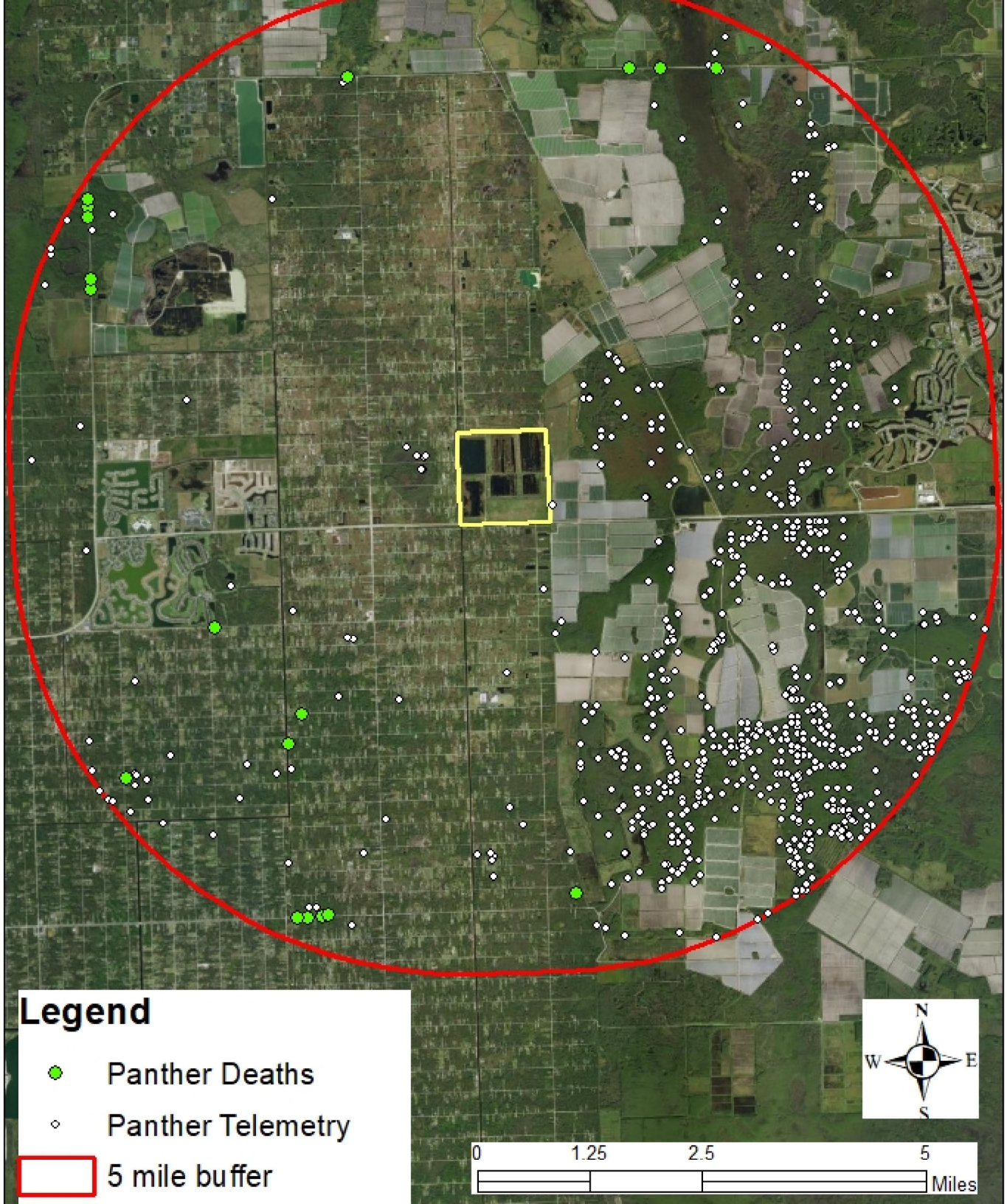
Legend
Panther Deaths
Panther Telemetry
5 mile buffer
N
W
E
S
0
1.25
2.5
5
Miles

FID,Date,PantherID,Sex,Age,Location,CauseLong,Type,Year,NAD83E,NAD83N,CauseShort,DATE_SORT
130,11/28/2002,FP099,M,33 mos,"CR 846, 1/4 mile N of Collier fairgrounds",Vehicle,DEATH,2002.000000000000000,440632.000000000000000,2912671.000000000000000,Vehicle,11/28/2002 0:00:00
132,1/26/2003,UCFP050 (K033),M,3 to 4,"CR 846, 3.4 miles E of Everglades Blvd.",Vehicle,DEATH,2003.000000000000000,450950.000000000000000,2916386.000000000000000,Vehicle,1/26/2003 0:00:00
147,6/30/2003,UCFP058,F,~1,"CR 846, 3/4 miles E of Everglades Blvd.",Vehicle,DEATH,2003.000000000000000,451966.000000000000000,2916362.000000000000000,Vehicle,6/30/2003 0:00:00
190,1/26/2006,UCFP079,F,2,"CR 846, 2 miles N of CR 858 - near Collier fairgrounds",Vehicle,DEATH,2006.000000000000000,440615.000000000000000,2914139.000000000000000,Vehicle,1/26/2006 0:00:00
243,7/28/2008,UCFP108,F,3 to 4,"CR 846, 1.7 mile E of Oil Grade Rd",Vehicle,DEATH,2008.000000000000000,450941.000000000000000,2916386.000000000000000,Vehicle,7/28/2008 0:00:00
343,6/19/2012,UCFP173,F,7 mo.,"CR 846, 2.4 km E of Oil Well Grade Rd",Vehicle,DEATH,2012.000000000000000,450396.000000000000000,2916383.000000000000000,Vehicle,6/19/2012 0:00:00
349,10/9/2012,UCFP176,F,3 mo,"Immokalee Rd, 2 miles N of fairgrounds, Collier County",Vehicle,DEATH,2012.000000000000000,440615.000000000000000,2912846.000000000000000,Vehicle,10/9/2012 0:00:00
350,11/4/2012,UCFP177,F,4 mo.,"18th Ave NE, Golden Gate Estates",Vehicle,DEATH,2012.000000000000000,444239.000000000000000,2904966.000000000000000,Vehicle,11/4/2012 0:00:00
354,11/26/2012,UCFP181,F,2 to 3 mos.,"Immokalee Rd, 3.6 miles N of Oil Well Rd, Collier County",Vehicle,DEATH,2012.000000000000000,440604.000000000000000,2913945.000000000000000,Vehicle,11/26/2012 0:00:00
395,4/25/2014,FP231,M,2,"Golden Gate Blvd, just west of Everglades, Collier Co",Vehicle,INJURY,2014.000000000000000,444507.000000000000000,2901327.000000000000000,Injured,4/25/2014 0:00:00
402,8/4/2014,FP231,M,2.5yrs,"Golden Gate Estates, Collier County",Unknown,DEATH,2014.000000000000000,441059.000000000000000,2903916.000000000000000,Unknown,8/4/2014 0:00:00
441,7/5/2015,UCFP244,M,1.5,"Immokalee Rd., 0.4 mi south of Wild Turkey Dr.",Vehicle,DEATH,2015.000000000000000,440610.000000000000000,2914266.000000000000000,Vehicle,7/5/2015 0:00:00
445,7/30/2015,UCFP248,F,4-5 mo,"Golden Gate Blvd (2300 GGBlvd E), Collier Co.",Vehicle,DEATH,2015.000000000000000,444240.000000000000000,2901319.000000000000000,Vehicle,7/30/2015 0:00:00
455,11/23/2015,UCFP254,M,8-10 mos.,"CR846, just W Everglades Blvd., Collier Co.",Vehicle,DEATH,2015.000000000000000,445326.000000000000000,2916359.000000000000000,Vehicle,11/23/2015 0:00:00
478,4/10/2016,UCFP277,M,5-6 mo,Golden Gate Blvd just east of 22nd St NE in Collier County,Vehicle,DEATH,2016.000000000000000,444053.000000000000000,2901324.000000000000000,Vehicle,4/10/2016 0:00:00
479,4/15/2016,UCFP278,M,16-18 mo,Randall Blvd (just east of 16th St. NE) in Collier County,Vehicle,DEATH,2016.000000000000000,442711.000000000000000,2906561.000000000000000,Vehicle,4/15/2016 0:00:00
499,10/31/2016,UCFP289,F,3,Golden Gate Blvd 1km west of Everglades Blvd,Vehicle,DEATH,2016.000000000000000,444626.000000000000000,2901349.000000000000000,Vehicle,10/31/2016 0:00:00
508,2/23/2017,UCFP299,Unknown,Unknown,east of Desoto Blvd and north of Golden Gate Blvd in Golden Gate

Estates,Unknown,DEATH,2017.000000000000000,449088.000000000000000,2901640.000000000000000,Unknown,2/23/2017 0:00:00
563,12/29/2018,UCFP345,M,4.5 mo.,"west of Everglades Blvd. on 14thÂ Avenue NE, Collier County",Intaspecific Agression,DEATH,2018.000000000000000,443987.000000000000000,2904443.000000000000000,Intaspecific Agression,12/29/2018 0:00:00

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103278,320879,2014-04-18T00:00:00.000Z,FP231,07:51,no data,FWC, ,441440,2903498,2018-08-28T17:19:09.000Z
103301,320902,2014-04-21T00:00:00.000Z,FP231,07:45,no data,FWC, ,445238,2916235,2018-08-28T17:19:09.000Z
103351,320952,2014-04-25T00:00:00.000Z,FP231,07:25,no data,FWC, ,444420,2901492,2018-08-28T17:19:09.000Z
103367,320968,2014-04-28T00:00:00.000Z,FP231,07:23,no data,FWC, ,445682,2903040,2018-08-28T17:19:09.000Z
103414,321015,2014-05-02T00:00:00.000Z,FP231,07:40,no data,FWC, ,446394,2909546,2018-08-28T17:19:09.000Z
103435,321036,2014-05-05T00:00:00.000Z,FP231,09:27,no data,FWC, ,444123,2906828,2018-08-28T17:19:09.000Z
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103573,321174,2014-05-30T00:00:00.000Z,FP224,07:40,no data,FWC, ,445284,2902445,2018-08-28T17:19:09.000Z
103580,321181,2014-06-02T00:00:00.000Z,FP224,07:22,no data,FWC, ,447610,2902352,2018-08-28T17:19:09.000Z
103598,321199,2014-06-04T00:00:00.000Z,FP224,07:46,no data,FWC, ,447920,2903199,2018-08-28T17:19:09.000Z
103607,321208,2014-06-06T00:00:00.000Z,FP224,07:29,no data,FWC, ,447307,2902381,2018-08-28T17:19:09.000Z
103642,321243,2014-06-13T00:00:00.000Z,FP224,07:32,no data,FWC, ,445049,2901167,2018-08-28T17:19:09.000Z
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103674,321275,2014-06-18T00:00:00.000Z,FP231,07:27,no data,FWC, ,445993,2905185,2018-08-28T17:19:09.000Z
103703,321304,2014-06-23T00:00:00.000Z,FP231,07:33,no data,FWC, ,446564,2909519,2018-08-28T17:19:09.000Z
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103776,321377,2014-06-30T00:00:00.000Z,FP231,07:22,no data,FWC, ,443235,2904094,2018-08-28T17:19:09.000Z
103799,321400,2014-07-02T00:00:00.000Z,FP231,08:05,no data,FWC, ,443752,2903931,2018-08-28T17:19:09.000Z
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103918,321519,2014-07-16T00:00:00.000Z,FP231,09:36,no data,FWC, ,442305,2910634,2018-08-28T17:19:09.000Z
103937,321538,2014-07-18T00:00:00.000Z,FP231,09:15,no data,FWC, ,443917,2914182,2018-08-28T17:19:09.000Z
103956,321557,2014-07-21T00:00:00.000Z,FP231,07:26,no data,FWC, ,440406,2904578,2018-08-28T17:19:09.000Z
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104051,321652,2014-07-30T00:00:00.000Z,FP231,09:19,no data,FWC, ,440439,2904063,2018-08-28T17:19:09.000Z
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106846,324447,2015-11-06T00:00:00.000Z,FP215,07:59,no data,FWC, ,455263,2904506,2018-08-28T17:19:09.000Z

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106876,324477,2015-11-18T00:00:00.000Z,FP215,07:32,no data,FWC, ,453905,2903173,2018-08-28T17:19:09.000Z
106920,324521,2015-12-02T00:00:00.000Z,FP224,08:05,no data,FWC, ,441686,2903067,2018-08-28T17:19:09.000Z
106929,324530,2015-12-09T00:00:00.000Z,FP215,08:43,no data,FWC, ,455218,2904787,2018-08-28T17:19:09.000Z
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107673,325274,2016-05-09T00:00:00.000Z,FP215,07:30,no data,FWC, ,453017,2902894,2018-08-28T17:19:09.000Z
107686,325287,2016-05-11T00:00:00.000Z,FP215,07:46,no data,FWC, ,453121,2902056,2018-08-28T17:19:09.000Z
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109356,327957,2018-06-27T00:00:00.000Z,FP251,07:40,no data,FWC, ,447571,2902391,2018-08-28T17:19:09.000Z
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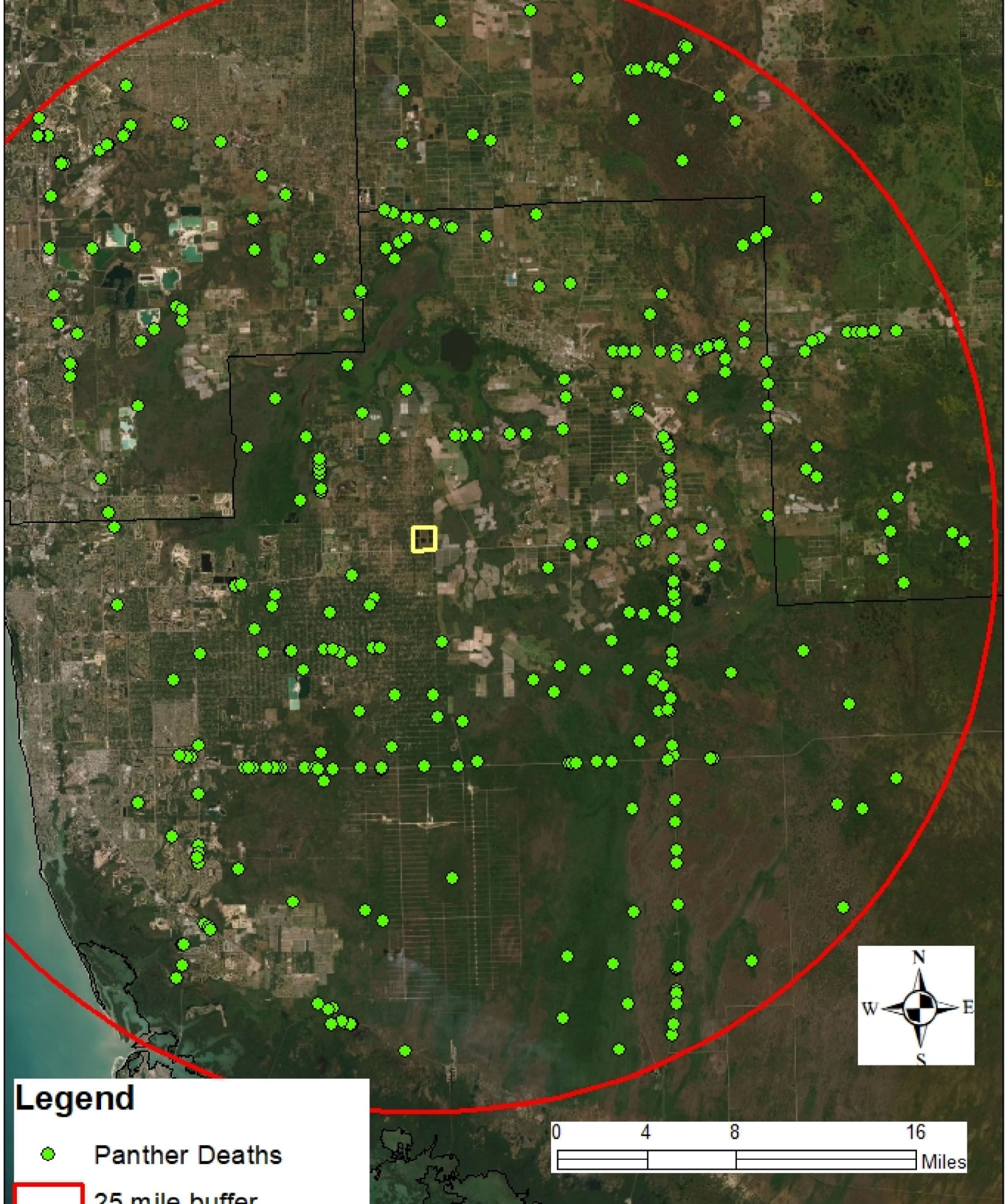
Legend
Panther Deaths
25 mile buffer
N
W
E
S
0
4
8
16
Miles

FID,Date,PantherID,Sex,Age,Location,CauseLong,Type,Year,NAD83E,NAD83N,CauseShort,DATE_SORT
5,12/23/1979,UCFP004-(G80-4),F,1.5 to 2.5,SR 29 just N SR 84 (now I-75),Vehicle,DEATH,1979.000000000000000,465507.000000000000000,2893149.000000000000000,Vehicle,12/23/1979 0:00:00
6,2/7/1980,UCFP005-(G80-15),M,1.5 to 2.5,SR 29 near Sunniland,Vehicle,DEATH,1980.000000000000000,465823.000000000000000,2907202.000000000000000,Vehicle,2/7/1980 0:00:00
7,4/19/1981,UCFP006-(G81-19),F,2 to 3,SR 29 near Copeland,Vehicle,DEATH,1981.000000000000000,465423.000000000000000,2877804.000000000000000,Vehicle,4/19/1981 0:00:00
9,1/17/1983,FP003,F,9+,FSSP,Capture,DEATH,1983.000000000000000,457121.000000000000000,2874505.000000000000000,Other,1/17/1983 0:00:00
12,11/18/1983,FP005,F,8 to 9,Fakahatchee Conservation Club (now FPNWR),Unknown,DEATH,1983.000000000000000,464450.000000000000000,2898837.000000000000000,Unknown,11/18/1983 0:00:00
14,12/14/1983,FP001,M,12 to 14,SR 84 (now I-75),Vehicle,DEATH,1983.000000000000000,461019.000000000000000,2892796.000000000000000,Vehicle,12/14/1983 0:00:00
15,11/28/1984,FP002,M,14+,FSSP,Intraspecific aggression,DEATH,1984.000000000000000,461819.000000000000000,2875457.000000000000000,ISA,11/28/1984 0:00:00
18,11/12/1984,UCFP012-(G84-26),F,8 to 10,SR 84 (now I-75),Vehicle,DEATH,1984.000000000000000,458039.000000000000000,2892767.000000000000000,Vehicle,11/12/1984 0:00:00
19,1/8/1985,UCFP013-(G85-BNZ),F,1.5 to 2,SR 84 (now I-75),Vehicle,DEATH,1985.000000000000000,458233.000000000000000,2892755.000000000000000,Vehicle,1/8/1985 0:00:00
20,3/23/1985,UCFP014,F,2 to 3,"Collier Seminole State Park, Collier Co.",Illegally shot (skeleton),DEATH,1985.000000000000000,440612.000000000000000,2875625.000000000000000,Other,3/23/1985 0:00:00
21,4/18/1985,FP004,M,12+,SR 84 (now I-75),Vehicle,DEATH,1985.000000000000000,460020.000000000000000,2892787.000000000000000,Vehicle,4/18/1985 0:00:00
22,5/12/1985,NONE,F,UNK,"CR 951, 2 miles N of US 41",Vehicle,INJURY,1985.000000000000000,431269.000000000000000,2886200.000000000000000,Injured,5/12/1985 0:00:00
23,10/26/1985,FP007,M,10,"SR 29, 4 miles S of SR 84 (now I-75)",Vehicle,DEATH,1985.000000000000000,465540.000000000000000,2886357.000000000000000,Vehicle,10/26/1985 0:00:00
25,11/15/1986,UCFP015,F,4 to 5,SR 84 (now I-75),Vehicle,DEATH,1986.000000000000000,458521.000000000000000,2892736.000000000000000,Vehicle,11/15/1986 0:00:00
26,1/27/1987,FP010,M,16 to 20 mos,"Mud Lake Strand, now FPNWR",Intraspecific aggression - by adult male panther,DEATH,1987.000000000000000,462621.000000000000000,2903405.000000000000000,ISA,1/27/1987 0:00:00
27,6/17/1987,FP020,M,3 to 4,CR 858 .8 miles E of SR 29,Vehicle - injured,INJURY,1987.000000000000000,467963.000000000000000,2909321.000000000000000,Injured,6/17/1987 0:00:00
28,12/14/1987,FP013,M,6 to 8,SR 29 Sunniland,Vehicle,DEATH,1987.000000000000000,465846.000000000000000,2904968.000000000000000,Vehicle,12/14/1987 0:00:00
34,8/24/1988,FP020,M,4 to 5,Bear Island,Congenital heart defect,DEATH,1988.000000000000000,469834.000000000000000,2898945.000000000000000,Disease,8/24/1988

0:00:00
35,8/26/1988,FP025,M,4 to 5,FPNWR,Intraspecific aggression - bacterial infection,DEATH,1988.000000000000000,463108.000000000000000,2894283.000000000000000,ISA,8/26/1988 0:00:00
36,11/29/1988,FP028,M,1.5 to 2,"Near Daniels Road, RSW Airport",Vehicle - injured,INJURY,1988.000000000000000,422562.000000000000000,2936632.000000000000000,Injured,11/29/1988 0:00:00
37,1/25/1989,UCFP018,M,3,"CR 850, 1.5 miles S of SR 82",Vehicle,DEATH,1989.000000000000000,446776.000000000000000,2930336.000000000000000,Vehicle,1/25/1989 0:00:00
39,11/25/1989,FP033,M,3,2 mi. NW of Hendry Prison,Rabies,DEATH,1989.000000000000000,475528.000000000000000,2913423.000000000000000,Disease,11/25/1989 0:00:00
41,1/29/1990,FP030,M,22 mos.,FSSP,Intraspecific aggression- killed by FP37,DEATH,1990.000000000000000,461062.000000000000000,2872171.000000000000000,ISA,1/29/1990 0:00:00
47,11/26/1990,FP037,M,4 to 5,"SR 29, 0.5 miles N of I-75",Vehicle,DEATH,1990.000000000000000,465498.000000000000000,2893906.000000000000000,Vehicle,11/26/1990 0:00:00
48,2/4/1991,UCFP020,F,9 mos.,"SR 29, at Pistol Pond",Vehicle,DEATH,1991.000000000000000,465865.000000000000000,2903058.000000000000000,Vehicle,2/4/1991 0:00:00
52,4/7/1992,NONE,M,Unknown,"Alico Road, Lee County",Vehicle - injured,INJURY,1992.000000000000000,421522.000000000000000,2930493.000000000000000,Injured,4/7/1992 0:00:00
53,5/27/1992,FP029,M,4,"Hendry Co., Gum Swamp",Pseudorabies,DEATH,1992.000000000000000,476339.000000000000000,2914976.000000000000000,Disease,5/27/1992 0:00:00
55,11/9/1992,UCFP021,F,7 mos.,"SR 29, Sunniland",Vehicle,DEATH,1992.000000000000000,465838.000000000000000,2905164.000000000000000,Vehicle,11/9/1992 0:00:00
56,2/19/1993,FP047,M,18 mos.,FSSP,Intraspecific aggression - killed by FP51,DEATH,1993.000000000000000,460837.000000000000000,2878301.000000000000000,ISA,2/19/1993 0:00:00
57,2/26/1993,FP053,M,11 mos.,Private lands N of FPNWR,"Intraspecific aggression-killed, eaten by uncollared male",DEATH,1993.000000000000000,461282.000000000000000,2901483.000000000000000,ISA,2/26/1993 0:00:00
59,8/9/1993,UCFP022,M,2 to 3,"Daniels Rd, 1 mile E of I-75",Vehicle,DEATH,1993.000000000000000,422754.000000000000000,2936570.000000000000000,Vehicle,8/9/1993 0:00:00
61,12/6/1993,FP050,M,2.5,"CR 846, 5 miles E of Immokalee",Vehicle,DEATH,1993.000000000000000,468132.000000000000000,2922159.000000000000000,Vehicle,12/6/1993 0:00:00
62,2/28/1994,UCFP023,M,8 mos.,"County Line Road, 3 miles N of CR 858",Vehicle,DEATH,1994.000000000000000,472936.000000000000000,2916364.000000000000000,Vehicle,2/28/1994 0:00:00
63,3/3/1994,FP031,F,12 to 14,SR 29 Sunniland,Vehicle,DEATH,1994.000000000000000,465783.000000000000000,2905097.000000000000000,Vehicle,3/3/1994 0:00:00
64,7/8/1994,FP026,M,11 to 12,4 mi. E. Hendry Prison,"Intraspecific aggression- killed by FP46, punctured skull",DEATH,1994.000000000000000,482075.000000000000000,2911254.000000000000000,ISA,7/8/1994 0:00:00
66,11/8/1994,FP012,M,13 to 14,"Private lands, Hendry County",Intraspecific aggression - infected bite wounds by FP46,DEATH,1994.000000000000000,485927.000000000000000,2908569.000000000000000,ISA,11/8/1994 0:00:00
67,1/14/1995,FP052,F,3.3,CR 846 near Dupree Road,Vehicle,DEATH,1995.000000000000000,465323.000000000000000,2922095.000000000000000,Vehicle,1/14/1995 0:00:00
70,3/18/1996,UCFP024,F,1.5 to 2 weeks,FPNWR,Unknown

(dehydrated),DEATH,1996.000000000000000,464593.000000000000000,2896321.000000000000000,Unknown,3/18/1996 0:00:00
71,4/24/1996,UCFP029,M,3 to 5,"CR 832, 5.5 miles E of SR 29",Vehicle,DEATH,1996.000000000000000,465184.000000000000000,2942494.000000000000000,Vehicle,4/24/1996 0:00:00
73,3/30/1997,FP058,M,3,Sadie Cypress - Collier Co.,Intraspecific aggression-septicemia from bite wounds,DEATH,1997.000000000000000,467529.000000000000000,2918794.000000000000000,ISA,3/30/1997 0:00:00
74,7/13/1997,UCFP031,U,UNK,"CR 846, 1.5 miles W of CR 858",Vehicle,DEATH,1997.000000000000000,468752.000000000000000,2922323.000000000000000,Vehicle,7/13/1997 0:00:00
75,12/2/1997,FP019,F,11.5,FPNWR,Ruptured aorta,DEATH,1997.000000000000000,463629.000000000000000,2903280.000000000000000,Disease or Other??,12/2/1997 0:00:00
77,2/2/1998,FP040,F,10,NBCNP,"Intraspecific aggression, infected bite wounds",DEATH,1998.000000000000000,478215.000000000000000,2896462.000000000000000,ISA,2/2/1998 0:00:00
78,2/14/1998,FP064,M,1.5,"SR 29, at clearcut, FPNWR",Vehicle - injured,INJURY,1998.000000000000000,465598.000000000000000,2900595.000000000000000,Injured,2/14/1998 0:00:00
79,4/18/1998,TX104,F,6 to 7,S of Sabal Palm Road in citrus grove,Illegally shot,DEATH,1998.000000000000000,434078.000000000000000,2885711.000000000000000,Other,4/18/1998 0:00:00
80,6/13/1998,UCFP025,F,2,"CR 846, 3 miles E of CR 858",Vehicle,DEATH,1998.000000000000000,480724.000000000000000,2923118.000000000000000,Vehicle,6/13/1998 0:00:00
81,7/17/1998,FP051,M,9,"SR 29, Bear Island Grade",Vehicle,DEATH,1998.000000000000000,465563.000000000000000,2899931.000000000000000,Vehicle,7/17/1998 0:00:00
87,3/26/1999,FP064,M,2.5,Audubon's Corkscrew Sanctuary,Intraspecific aggression- killed by uncollared male,DEATH,1999.000000000000000,442780.000000000000000,2921636.000000000000000,ISA,3/26/1999 0:00:00
88,7/8/1999,UCFP027,F,2,Farm Road E of Hendry Prison,Vehicle,DEATH,1999.000000000000000,481523.000000000000000,2908764.000000000000000,Vehicle,7/8/1999 0:00:00
92,11/13/1999,FP076,M,2.5 to 3,"FSSP, 1.9 miles W of SR 29 off of Lancaster Grade",Intraspecific aggression-killed by FP54,DEATH,1999.000000000000000,462442.000000000000000,2882010.000000000000000,ISA,11/13/1999 0:00:00
94,1/15/2000,FP063,M,5,"SR 29, N of Pistol Pond",Vehicle-drowning,DEATH,2000.000000000000000,465882.000000000000000,2904204.000000000000000,Vehicle,1/15/2000 0:00:00
96,2/28/2000,K076,M,3 mos.,"CR 858, 1 mile W of SR 29",Vehicle,DEATH,2000.000000000000000,463602.000000000000000,2908495.000000000000000,Vehicle,2/28/2000 0:00:00
98,3/23/2000,UCFP034,M,1.5 to 2,"CR 846, 2 miles E of Collier/Hendry line",Vehicle,DEATH,2000.000000000000000,478823.000000000000000,2923096.000000000000000,Vehicle,3/23/2000 0:00:00
101,6/23/2000,UCFP035,M,1.5 to 2,"CR 846, 2 miles E of Immokalee",Vehicle,DEATH,2000.000000000000000,461924.000000000000000,2922139.000000000000000,Vehicle,6/23/2000 0:00:00
102,8/13/2000,UCFP036,F,1.7,"CR 846, near big powerline",Vehicle,DEATH,2000.000000000000000,476749.000000000000000,2922759.000000000000000,Vehicle,8/13/2000 0:00:00
105,12/29/2000,UCFP037,F,5,"CR 846, 4.5 miles E of SR 29",Vehicle,DEATH,2000.000000000000000,466429.000000000000000,2922124.000000000000000,Vehicle,12/29/2000 0:00:00

107,2/27/2001,FP011,F,19 to 20,"Private land, 200yds. S of CR846, 1 mile E of Dupree Rd.",Intraspecific aggression,DEATH,2001.000000000000000,466432.000000000000000,2921725.000000000000000,ISA,2/27/2001 0:00:00
110,5/7/2001,UCFP039,F,10 mos.,"SR 29, 1/2 mile N of Jerome",Vehicle,DEATH,2001.000000000000000,465311.000000000000000,2876343.000000000000000,Vehicle,5/7/2001 0:00:00
111,5/7/2001,UCFP040,M,10 mos.,"SR 29, 1/2 mile N of Jerome",Vehicle,DEATH,2001.000000000000000,465304.000000000000000,2876102.000000000000000,Vehicle,5/7/2001 0:00:00
112,5/22/2001,UCFP041,M,2 to 3,"SR 29, Sunniland, near mine entrance",Vehicle,DEATH,2001.000000000000000,465838.000000000000000,2905584.000000000000000,Vehicle,5/22/2001 0:00:00
113,6/14/2001,UCFP042,F,3 to 4,"CR 846, 1 mile E of big powerline",Vehicle,DEATH,2001.000000000000000,479459.000000000000000,2923106.000000000000000,Vehicle,6/14/2001 0:00:00
114,8/17/2001,UCFP043,M,2 to 3,"CR 846, 1 mile E of big powerline",Vehicle,DEATH,2001.000000000000000,479859.000000000000000,2923112.000000000000000,Vehicle,8/17/2001 0:00:00
115,9/1/2001,FP092,M,2.2,"CREW, N Flint Pen Strand",Unknown,DEATH,2001.000000000000000,430954.000000000000000,2925167.000000000000000,Unknown,9/1/2001 0:00:00
116,12/2/2001,FP097,M,2,"Private land, E of Gopher Ridge Grove, N of Immokalee",Intraspecific aggression,DEATH,2001.000000000000000,465530.000000000000000,2926205.000000000000000,ISA,12/2/2001 0:00:00
118,1/15/2002,FP096,M,1.75,"Private land, Hogan Island, Collier Co.",Intraspecific aggression,DEATH,2002.000000000000000,447028.000000000000000,2919759.000000000000000,ISA,1/15/2002 0:00:00
119,1/16/2002,FP105,F,~7,"FPNWR, SW corner of clearcut",Unknown,DEATH,2002.000000000000000,462406.000000000000000,2899372.000000000000000,Unknown,1/16/2002 0:00:00
121,4/10/2002,UCFP046,M,6 mos.,"SR 29, 1/2 mile N of Deep Lake, Collier Co.",Vehicle,DEATH,2002.000000000000000,465549.000000000000000,2882397.000000000000000,Vehicle,4/10/2002 0:00:00
122,7/1/2002,FP098,M,4 to 5,"SR 29, 1 km N of Pistol Pond",Vehicle,DEATH,2002.000000000000000,465866.000000000000000,2904227.000000000000000,Vehicle,7/1/2002 0:00:00
123,9/5/2002,FP111,M,9 to 10,"OSSF, N of CR 832",Intraspecific aggression,DEATH,2002.000000000000000,466715.000000000000000,2942996.000000000000000,ISA,9/5/2002 0:00:00
124,9/11/2002,FP112,F,4,BCNP - Bear Island,Intraspecific aggression,DEATH,2002.000000000000000,475019.000000000000000,2900359.000000000000000,ISA,9/11/2002 0:00:00
125,9/12/2002,FP032,F,15,FPNWR - Rock Island,Malnutrition (old-age),DEATH,2002.000000000000000,451463.000000000000000,2893061.000000000000000,Other,9/12/2002 0:00:00
126,10/16/2002,FP078,F,6,FPNWR - Fire Tower,Intraspecific aggression,DEATH,2002.000000000000000,465318.000000000000000,2896243.000000000000000,ISA,10/16/2002 0:00:00
127,11/10/2002,UCFP048,F,8 to 9 mos,"CR 846, 5 miles E of Immokalee",Vehicle,DEATH,2002.000000000000000,468536.000000000000000,2922250.000000000000000,Vehicle,11/10/2002 0:00:00
129,11/25/2002,UCFP049 (K098),F,19 mos,"CR 846, 3 miles E of Immokalee",Vehicle,DEATH,2002.000000000000000,463459.000000000000000,2922165.000000000000000,Vehicle,11/25/2002 0:00:00
130,11/28/2002,FP099,M,33 mos,"CR 846, 1/4 mile N of Collier

fairgrounds",Vehicle,DEATH,2002.000000000000000,440632.000000000000000,2912671.000000000000000,Vehicle,11/28/2002 0:00:00
131,1/15/2003,FP067,F,5.5,"Private land, Gum Slough, Hendry Co.",Intraspecific aggression-killed by FP65,DEATH,2003.000000000000000,481007.000000000000000,2910064.000000000000000,ISA,1/15/2003 0:00:00
132,1/26/2003,UCFP050 (K033),M,3 to 4,"CR 846, 3.4 miles E of Everglades Blvd.",Vehicle,DEATH,2003.000000000000000,450950.000000000000000,2916386.000000000000000,Vehicle,1/26/2003 0:00:00
133,02/20/2003,FP106,F,3,"SR 29, entrance to Sunniland Mine",Vehicle,DEATH,2003.000000000000000,465838.000000000000000,2905517.000000000000000,Vehicle,2/20/2003 0:00:00
134,2/22/2003,FP109,M,10+,"OSSF, N of CR 832",Intraspecific aggression,DEATH,2003.000000000000000,467496.000000000000000,2943851.000000000000000,ISA,2/22/2003 0:00:00
138,5/10/2003,FP082,F,6,OSSF,Intraspecific aggression,DEATH,2003.000000000000000,472378.000000000000000,2930052.000000000000000,ISA,5/10/2003 0:00:00
139,5/17/2003,FP115,F,4 to 5,"OSSF, Sick Island",FeLV,DEATH,2003.000000000000000,463792.000000000000000,2938739.000000000000000,Disease,5/17/2003 0:00:00
140,5/25/2003,UCFP053,F,2 to 3,"SR 29, 1.4 miles N of CR 858, Collier Co.",Vehicle,DEATH,2003.000000000000000,465768.000000000000000,2911711.000000000000000,Vehicle,5/25/2003 0:00:00
141,6/3/2003,UCFP054,M,8 to 10 mos,"SR 29, 1.7 miles N of CR 858, Collier Co.",Vehicle,DEATH,2003.000000000000000,465757.000000000000000,2912513.000000000000000,Vehicle,6/3/2003 0:00:00
147,6/30/2003,UCFP058,F,~1,"CR 846, 3/4 miles E of Everglades Blvd.",Vehicle,DEATH,2003.000000000000000,451966.000000000000000,2916362.000000000000000,Vehicle,6/30/2003 0:00:00
149,10/17/2003,FP114,M,1.5,"FPNWR, S of Oil Pad Rd.",Intraspecific aggression,DEATH,2003.000000000000000,465228.000000000000000,2896405.000000000000000,ISA,10/17/2003 0:00:00
150,11/2/2003,UCFP059,M,3 to 4 mos.,"CR 858, 1.2 miles W of SR 29",Vehicle,DEATH,2003.000000000000000,463862.000000000000000,2908608.000000000000000,Vehicle,11/2/2003 0:00:00
152,12/9/2003,UCFP060,M,~2 to 3,"US 41, 1 mile E of CR 92",Vehicle,DEATH,2003.000000000000000,442007.000000000000000,2874458.000000000000000,Vehicle,12/9/2003 0:00:00
156,2/13/2004,FP122,F,2 to 3,"OSSF, NW Wild Cow Island",FeLV,DEATH,2004.000000000000000,467194.000000000000000,2935632.000000000000000,Disease,2/13/2004 0:00:00
157,2/26/2004,UCFP063,M,~3.5,"I-75, 99 mm, Ebound lane",Vehicle,DEATH,2004.000000000000000,435304.000000000000000,2892991.000000000000000,Vehicle,2/26/2004 0:00:00
160,3/15/2004,FP123,M,3.5,OSSF,Intraspecific aggression,DEATH,2004.000000000000000,473125.000000000000000,2930457.000000000000000,ISA,3/15/2004 0:00:00
161,4/6/2004,UCFP065,M,~2,"SR 29, 200 yds. N of Bear Island Grade",Vehicle,DEATH,2004.000000000000000,465618.000000000000000,2900494.000000000000000,Vehicle,4/6/2004 0:00:00
162,6/27/2004,UCFP066,M,~3,"I-75, 93 mm, 0.5 miles W of Everglades Blvd.",Vehicle,DEATH,2004.000000000000000,444566.000000000000000,2892721.000000000000000,Vehicle,6/27/2004 0:00:00
163,7/7/2004,FP055,F,~11.5,BCNP,Intraspecific aggression,DEATH,2004.000000000000000,479007.000000000000000,2888961.000000000000000,ISA,7/7/2004

0:00:00
165,7/22/2004,FP132,M,3 to
3.5,OSSF,FeLV,DEATH,2004.000000000000000,471379.000000000000000,2929545.000000000000000,Disease,7/22/
2004 0:00:00
166,7/28/2004,FP117,M,27
mos,OSSF,Pseudorabies,DEATH,2004.000000000000000,471133.000000000000000,2938399.000000000000000,Dise
ase,7/28/2004 0:00:00
168,8/17/2004,K094,M,3.3,"I-75, near 98 mm, Ebound
land",Vehicle,DEATH,2004.000000000000000,437335.000000000000000,2892925.000000000000000,Vehicle,8/17/20
04 0:00:00
169,9/2/2004,UCFP67,F,< 7 days,FPNWR - Ridge
Road,Unknown,DEATH,2004.000000000000000,464197.000000000000000,2898501.000000000000000,Unknown,9/2
/2004 0:00:00
171,10/25/2004,UCFP69,F,2,SR 29 2.5 miles N of CR
858,Vehicle,DEATH,2004.000000000000000,465720.000000000000000,2913557.000000000000000,Vehicle,10/25/20
04 0:00:00
172,11/22/2004,FP059,M,9.4,"Private property, just E of Ford Test Track, Collier Co.",Intraspecific
aggression,DEATH,2004.000000000000000,450406.000000000000000,2895887.000000000000000,ISA,11/22/2004
0:00:00
173,12/1/2004,UCFP070,F,1,"SR 29, Owl Hammock
Curve",Vehicle,DEATH,2004.000000000000000,465552.000000000000000,2915727.000000000000000,Vehicle,12/1/
2004 0:00:00
174,12/6/2004,K128,M,2.5,"CR 832, 1 mile E of RR
grade",Vehicle,DEATH,2004.000000000000000,463683.000000000000000,2942254.000000000000000,Vehicle,12/6/2
004 0:00:00
175,1/1/2005,FP126,M,1.6,"Private property, 1/2 mile S of CR 846, Sadie Cypress",Intraspecific
aggression,DEATH,2005.000000000000000,469938.000000000000000,2921469.000000000000000,ISA,1/1/2005
0:00:00
177,2/25/2005,UCFP072,M,2,"SR 29, near
Jerome",Vehicle,DEATH,2005.000000000000000,465414.000000000000000,2877883.000000000000000,Vehicle,2/25
/2005 0:00:00
178,4/7/2005,UCFP073,M,7 mos.,"CR 951, S of Rattlesnake Hammock
Road",Vehicle,DEATH,2005.000000000000000,431288.000000000000000,2887496.000000000000000,Vehicle,4/7/20
05 0:00:00
182,6/19/2005,UCFP075,M,2,"SR 29, Owl Hammock
Curve",Vehicle,DEATH,2005.000000000000000,465567.000000000000000,2915710.000000000000000,Vehicle,6/19/
2005 0:00:00
183,8/29/2005,K153,M,2.1,"CR951, 1.2 miles S of Davis
Blvd.",Vehicle,DEATH,2005.000000000000000,431340.000000000000000,2891189.000000000000000,Vehicle,8/29/2
005 0:00:00
185,9/18/2005,UCFP076,M,1,"US 41, 1.4 miles E of CR
951",Vehicle,DEATH,2005.000000000000000,431911.000000000000000,2881582.000000000000000,Vehicle,9/18/20
05 0:00:00
186,12/2/2005,K049,F,7.8,"SR 29,1 mile N of Wagon Wheel
Road",Vehicle,DEATH,2005.000000000000000,464904.000000000000000,2873124.000000000000000,Vehicle,12/2/2
005 0:00:00
189,1/25/2006,UCFP078,M,9 mos.,"CR 846, 1 miles W of CR
858",Vehicle,DEATH,2006.000000000000000,471348.000000000000000,2922532.000000000000000,Vehicle,1/25/20
06 0:00:00
190,1/26/2006,UCFP079,F,2,"CR 846, 2 miles N of CR 858 - near Collier
fairgrounds",Vehicle,DEATH,2006.000000000000000,440615.000000000000000,2914139.000000000000000,Vehicle,
1/26/2006 0:00:00
193,2/27/2006,UCFP082,U,unknown,"Private property, 0.2 miles W of SR 29 Hendry County",Unknown (skeletal
remains),DEATH,2006.000000000000000,456148.000000000000000,2948092.000000000000000,Unknown,2/27/2006

0:00:00
195,3/11/2006,UCFP083,M,3,"CREW, 1 mile S of Corkscrew Rd., Flint Pen Strand",Intraspecific aggression,DEATH,2006.000000000000000,427977.000000000000000,2923726.000000000000000,ISA,3/11/2006 0:00:00
200,7/6/2006,UCFP086,U,unknown,"SR 29, 0.6 miles S of Sunniland",Vehicle - carcass not found (gator?),DEATH,2006.000000000000000,465849.000000000000000,2904680.000000000000000,Vehicle,7/6/2006 0:00:00
201,8/24/2006,UCFP087,M,3,"Corkscrew Rd. near Alico, Lee County",Vehicle,DEATH,2006.000000000000000,430633.000000000000000,2926086.000000000000000,Vehicle,8/24/2006 0:00:00
202,10/23/2006,FP048,F,15,"Sunniland, Collier County",Unknown,DEATH,2006.000000000000000,468859.000000000000000,2906560.000000000000000,Unknown,10/23/2006 0:00:00
204,11/26/2006,UCFP088,F,2,"US 41, between Manatee Rd and CR951",Vehicle,DEATH,2006.000000000000000,431529.000000000000000,2881851.000000000000000,Vehicle,11/26/2006 0:00:00
205,12/12/2006,UCFP089,M,3 to 5,"County Line Road, Collier/Hendry",Vehicle,DEATH,2006.000000000000000,472931.000000000000000,2919548.000000000000000,Vehicle,12/12/2006 0:00:00
206,1/10/2007,FP116,F,4.5,"Williams Ranch, Hendry County",Intraspecific aggression,DEATH,2007.000000000000000,486816.000000000000000,2907943.000000000000000,ISA,1/10/2007 0:00:00
207,1/24/2007,UCFP090,F,4 to 6 mos.,"CR 832, 1mile W of Forestry tower",Vehicle,DEATH,2007.000000000000000,464073.000000000000000,2942326.000000000000000,Vehicle,1/24/2007 0:00:00
210,3/9/2007,UCFP091,M,5 mos.,"CR 832, W of Keri tower, OSSF",Vehicle,DEATH,2007.000000000000000,466030.000000000000000,2942127.000000000000000,Vehicle,3/9/2007 0:00:00
213,3/30/2007,UCFP093,M,2,"I-75, 0.5 miles N Corkscrew Road, Lee County",Vehicle,DEATH,2007.000000000000000,422046.000000000000000,2925101.000000000000000,Vehicle,3/30/2007 0:00:00
214,4/3/2007,UCFP094,M,2 to 3,"I-75, 2 miles E of toll booth 98mm, Collier County",Vehicle,DEATH,2007.000000000000000,436950.000000000000000,2892941.000000000000000,Vehicle,4/3/2007 0:00:00
216,4/27/2007,K249,F,10 to 12 days,"FPNWR, Unit12",Septicemia,DEATH,2007.000000000000000,457008.000000000000000,2897886.000000000000000,Disease,4/27/2007 0:00:00
217,5/3/2007,K247,F,16 to 18 days,"FPNWR, Unit12",Complications related to dermatophytosis,DEATH,2007.000000000000000,457008.000000000000000,2897886.000000000000000,Disease,5/3/2007 0:00:00
218,5/3/2007,K248,M,16 to 18 days,"FPNWR, Unit12",Unknown,DEATH,2007.000000000000000,457008.000000000000000,2897886.000000000000000,Unknown,5/3/2007 0:00:00
220,5/14/2007,UCFP097,F,4 to 5,"Corkscrew Road, near Alico, Lee County",Vehicle,DEATH,2007.000000000000000,431034.000000000000000,2925884.000000000000000,Vehicle,5/14/2007 0:00:00
221,6/11/2007,UCFP098,M,20 to 24 mos.,"SR 29, at Jerome wildlife crossing",Vehicle,DEATH,2007.000000000000000,465116.000000000000000,2873894.000000000000000,Vehicle,6/11/2007 0:00:00
222,6/14/2007,UCFP099,M,12 to 15 mos.,"SR 82, 0.7 miles W of Sunshine Blvd",Vehicle,DEATH,2007.000000000000000,431354.000000000000000,2939145.000000000000000,Vehicle,6/14/2007 0:00:00
223,6/23/2007,UCFP100,M,2 to 3,"SR 29, 3 miles S of Immokalee",Vehicle,DEATH,2007.000000000000000,463466.000000000000000,2917969.000000000000000,Vehicle,

6/23/2007 0:00:00
224,6/23/2007,K199,F,20 mos.,"CR 832, 0.6 miles W of Forestry tower",Vehicle,DEATH,2007.000000000000000,465720.000000000000000,2942363.000000000000000,Vehicle,6/23/2007 0:00:00
227,8/27/2007,K259,M,3 wks,SBCNP,suspected black bear predation at den,DEATH,2007.000000000000000,477435.000000000000000,2881964.000000000000000,Other,8/27/2007 0:00:00
228,8/27/2007,K260,Unk,3 wks,SBCNP,suspected black bear predation at den,DEATH,2007.000000000000000,477435.000000000000000,2881964.000000000000000,Other,8/27/2007 0:00:00
229,9/12/2007,UCFP102,M,2,"I-75, 1.5 miles E of SR 29",Vehicle,DEATH,2007.000000000000000,468382.000000000000000,2892857.000000000000000,Vehicle,9/12/2007 0:00:00
231,3/9/2008,UCFP103,M,2 to 3,"Pine Ridge Road, half way between CR951, Logan",Vehicle,DEATH,2008.000000000000000,429716.000000000000000,2899370.000000000000000,Vehicle,3/9/2008 0:00:00
233,4/9/2008,FP157,M,3,CREW,Intraspecific aggression,DEATH,2008.000000000000000,435452.000000000000000,2915916.000000000000000,ISA,4/9/2008 0:00:00
235,4/16/2008,FP131,M,9,"Horse Trial grounds, N of CR 858, W of SR 29",Pneumonia,DEATH,2008.000000000000000,464672.000000000000000,2910001.000000000000000,Disease,4/16/2008 0:00:00
236,4/23/2008,UCFP105,F,5 to 6,"FSSP, 0.24 miles W of Janes Scenic, N side of Mud Tram",Unknown or Accidental,DEATH,2008.000000000000000,457504.000000000000000,2878948.000000000000000,Unknown,4/23/2008 0:00:00
237,5/4/2008,UCFP106,M,2,"Leonard Boulevard, Lehigh Acres, Lee County",Vehicle,DEATH,2008.000000000000000,427411.000000000000000,2942010.000000000000000,Vehicle,5/4/2008 0:00:00
239,5/22/2008,UCFP107,F,2 to 3,"CR 951, 2.4 km S of US 41 on CR951, crossed E to W",Vehicle,DEATH,2008.000000000000000,429934.000000000000000,2880448.000000000000000,Vehicle,5/22/2008 0:00:00
243,7/28/2008,UCFP108,F,3 to 4,"CR 846, 1.7 mile E of Oil Grade Rd",Vehicle,DEATH,2008.000000000000000,450941.000000000000000,2916386.000000000000000,Vehicle,7/28/2008 0:00:00
244,8/6/2008,FP107,F,8,FPNWR,Unknown,DEATH,2008.000000000000000,464961.000000000000000,2898111.000000000000000,Unknown,8/6/2008 0:00:00
245,9/15/2008,FP155,M,3,"Lee-Hendry Landfill, Hendry Co.",Unknown,DEATH,2008.000000000000000,447316.000000000000000,2941199.000000000000000,Unknown,9/15/2008 0:00:00
246,9/15/2008,UCFP109,M,8,"Private Property (J. Ivey), 2 miles E of Corkscrew Sanctuary",Unknown,DEATH,2008.000000000000000,443711.000000000000000,2918211.000000000000000,Unknown,9/15/2008 0:00:00
249,10/24/2008,UCFP111,F,6 to 8 mos.,"SR 29, 2.4km N of Oil Well Road",Vehicle,DEATH,2008.000000000000000,465744.000000000000000,2911732.000000000000000,Vehicle,10/24/2008 0:00:00
252,11/26/2008,UCFP113,M,4 to 5,"Alico Road, Lee County",Vehicle,DEATH,2008.000000000000000,427752.000000000000000,2930530.000000000000000,Vehicle,11/26/2008 0:00:00
253,11/28/2008,UCFP114,F,4,"CR 858, 1 miles E of Camp Keais Rd",Vehicle,DEATH,2008.000000000000000,460001.000000000000000,2908422.000000000000000,Vehicle,11/28/2008 0:00:00
255,1/17/2009,K253,M,18 mos.,"I-75, eastbound exit ramp for SR 29",Vehicle,DEATH,2009.000000000000000,465085.000000000000000,2892821.000000000000000,Vehicle,1/17/2009 0:00:00
256,1/20/2009,UCFP116,F,4 to 5,"SR 29, 3 miles S of Immokalee",Vehicle,DEATH,2009.000000000000000,462104.000000000000000,2919224.000000000000000,Vehicle,

1/20/2009 0:00:00
258,3/25/2009,UCFP118,M,1.5,"Treeline Ave, Lee
County",Vehicle,DEATH,2009.000000000000000,421750.000000000000000,2934266.000000000000000,Vehicle,3/25
/2009 0:00:00
260,4/21/2009,UCFP120,F,2,Big Cypress Mitigation Bank,Illegally
Shot,DEATH,2009.000000000000000,480876.000000000000000,2906834.000000000000000,Other,4/21/2009 0:00:00
261,5/14/2009,UCFP121,M,2,"SR 29, ~4 miles S of I-
75",Vehicle,DEATH,2009.000000000000000,465517.000000000000000,2885439.000000000000000,Vehicle,5/14/200
9 0:00:00
262,5/25/2009,UCFP122,M,2,"CR 846, near Camp Kaeis
Rd",Vehicle,DEATH,2009.000000000000000,458157.000000000000000,2916617.000000000000000,Vehicle,5/25/200
9 0:00:00
263,6/12/2009,FP140,F,7,"FPNWR, SE of Hog Pond",Intraspecific
aggression,DEATH,2009.000000000000000,459374.000000000000000,2899450.000000000000000,ISA,6/12/2009
0:00:00
265,8/5/2009,UCFP124,M,1.5,"I-75,
90mm",Vehicle,DEATH,2009.000000000000000,450073.000000000000000,2892715.000000000000000,Vehicle,8/5/2
009 0:00:00
266,9/6/2009,UCFP125,F,2,"I-75,
96.5mm",Vehicle,DEATH,2009.000000000000000,438968.000000000000000,2892868.000000000000000,Vehicle,9/6
/2009 0:00:00
267,9/15/2009,UCFP126,M,2,"E of Ave Maria, Ranch 1 Orange
Gr.",Vehicle,DEATH,2009.000000000000000,462259.000000000000000,2913067.000000000000000,Vehicle,9/15/20
09 0:00:00
270,10/10/2009,UCFP128,F,3,North Belle Meade,Illegally
shot,DEATH,2009.000000000000000,443002.000000000000000,2896786.000000000000000,Other,10/10/2009
0:00:00
271,10/19/2009,UCFP129,M,3 to 4 mos.,"CR 846, 2 miles E of
Immokalee",Vehicle,DEATH,2009.000000000000000,462585.000000000000000,2922158.000000000000000,Vehicle,
10/19/2009 0:00:00
272,10/21/2009,UCFP130,F,3 to 4,"CR 846, 2 miles E of
Immokalee",Vehicle,DEATH,2009.000000000000000,462611.000000000000000,2922165.000000000000000,Vehicle,
10/21/2009 0:00:00
276,12/23/2009,UCFP134,M,3,"Corkscrew Road, near CREW Gate
5",Vehicle,DEATH,2009.000000000000000,443900.000000000000000,2926770.000000000000000,Vehicle,12/23/200
9 0:00:00
277,12/29/2009,UCFP135,F,4,"SR 29, 2 miles N of
Jerome",Vehicle,DEATH,2009.000000000000000,465433.000000000000000,2878029.000000000000000,Vehicle,12/2
9/2009 0:00:00
278,12/31/2009,UCFP136,F,3 to 4 mos.,"County Barn Rd, 0.3 miles S of Davis
Blvd",Vehicle,DEATH,2009.000000000000000,426997.000000000000000,2890657.000000000000000,Vehicle,12/31/
2009 0:00:00
279,1/16/2010,UCFP137,M,2.5,"I mile S Corkscrew Rd, near Bella Terra",Intraspecific
aggression,DEATH,2010.000000000000000,428936.000000000000000,2924514.000000000000000,ISA,1/16/2010
0:00:00
280,1/29/2010,UCFP138,M,6 to 8,"N of Shell Island Rd, Rookery Bay",Unknown (skeletal
remains),DEATH,0.000000000000000,429466.000000000000000,2878078.000000000000000,Unknown,1/29/2010
0:00:00
281,3/12/2010,UCFP139,F,3,"Corkscrew Rd, CREW Marsh Trailhead
1",Vehicle,DEATH,2010.000000000000000,446749.000000000000000,2930324.000000000000000,Vehicle,3/12/2010
0:00:00
282,3/16/2010,FP174,M,4 to 5,"I-75, 95mm,
eastbound",Vehicle,DEATH,2010.000000000000000,441018.000000000000000,2892768.000000000000000,Vehicle,3
/16/2010 0:00:00

284,4/15/2010,UCFP140,M,1.5 to 2,"I-75, mm 117, Lee
County",Vehicle,DEATH,2010.000000000000000,424910.000000000000000,2913912.000000000000000,Vehicle,4/15
/2010 0:00:00
285,4/29/2010,UCFP141,F,6 mos.,"Church Road, near Hendry Co
landfill",Vehicle,DEATH,2010.000000000000000,447119.000000000000000,2937469.000000000000000,Vehicle,4/29
/2010 0:00:00
286,5/4/2010,UCFP142,F,8 mos.,"Golden Gate Blvd., between 5th and 7th St
NW",Vehicle,DEATH,2010.000000000000000,438174.000000000000000,2901280.000000000000000,Vehicle,5/4/201
0 0:00:00
288,5/22/2010,FP158,F,5,"US 41, 1km E of
SR92",Vehicle,DEATH,2010.000000000000000,441448.000000000000000,2874545.000000000000000,Vehicle,5/22/2
010 0:00:00
289,5/23/2010,UCFP143,M,7 to 8 mos.,"US 41, 2.2km E of
CR951",Vehicle,DEATH,2010.000000000000000,431881.000000000000000,2881593.000000000000000,Vehicle,5/23
/2010 0:00:00
292,6/24/2010,UCFP145,M,16 to 18 mos.,"SR 29, 3.7km S of Farm Workers
Village",Vehicle,DEATH,2010.000000000000000,463430.000000000000000,2917905.000000000000000,Vehicle,6/24
/2010 0:00:00
293,8/3/2010,UCFP146,F,3 to 4,"SR 29, 1 miles S of Owl Hammock, Collier
Co.",Vehicle,DEATH,2010.000000000000000,465735.000000000000000,2913730.000000000000000,Vehicle,8/3/201
0 0:00:00
295,10/15/2010,FP168,F,8,"CREW, Flint Pen Strand",Intraspecific
aggression,DEATH,2010.000000000000000,427706.000000000000000,2919067.000000000000000,ISA,10/15/2010
0:00:00
297,11/17/2010,FP176,M,4 to 5,"CR 832,
OSSF",Vehicle,DEATH,2010.000000000000000,466107.000000000000000,2942070.000000000000000,Vehicle,11/17
/2010 0:00:00
299,12/13/2010,UCFP149,M,1.5,"Golden Gate Blvd., 7th ST NW, Collier
County",Vehicle,DEATH,2010.000000000000000,438253.000000000000000,2901267.000000000000000,Vehicle,12/1
3/2010 0:00:00
301,12/22/2010,FP173,M,5,Lee County Port Authority Mitigation
Land,Pseudorabies,DEATH,2010.000000000000000,436373.000000000000000,2932175.000000000000000,Disease,1
2/22/2010 0:00:00
302,12/23/2010,UCFP151,F,10 to 18 mo,"Private property, Collier County",Intraspecific
aggression,DEATH,2010.000000000000000,456810.000000000000000,2906704.000000000000000,ISA,12/23/2010
0:00:00
304,1/7/2011,K284,M,1.5,"SR 29, S of Sears Rd., Hendry
County",Vehicle,DEATH,2011.000000000000000,456583.000000000000000,2946741.000000000000000,Vehicle,1/7/
2011 0:00:00
305,1/13/2011,UCFP152,F,3,"I-75, 98mm, eastbound, Collier
County",Vehicle,DEATH,2011.000000000000000,436807.000000000000000,2892929.000000000000000,Vehicle,1/13
/2011 0:00:00
306,1/21/2011,UCFP153,M,8 mos.,"I-75, 98mm, westbound, Collier
County",Vehicle,DEATH,2011.000000000000000,436221.000000000000000,2892997.000000000000000,Vehicle,1/21
/2011 0:00:00
308,2/23/2011,UCFP155,F,4,Golden Gate Estates,Illegally
Shot,DEATH,2011.000000000000000,435649.000000000000000,2902906.000000000000000,Other,2/23/2011 0:00:00
309,2/26/2011,UCFP156,M,3 to 4,"I-75, near 114mm, Collier
County",Vehicle,DEATH,2011.000000000000000,425712.000000000000000,2910414.000000000000000,Vehicle,2/26
/2011 0:00:00
310,3/2/2011,FP170,F,4.5,"PSSF, Swan Lake Prairie, Collier County",Intraspecific
aggression,DEATH,2011.000000000000000,449388.000000000000000,2884684.000000000000000,ISA,3/2/2011
0:00:00
313,3/25/2011,UCFP159,F,4 to 5,"SR 29, near Farmworkers Village",Vehicle (survived gunshot to

head),DEATH,2011.000000000000000,463534.000000000000000,2917803.000000000000000,Vehicle,3/25/2011 0:00:00
314,3/25/2011,FP83,F,11 10 mo.,"US 41, W of Port of the Islands",Vehicle,DEATH,2011.000000000000000,445757.000000000000000,2872465.000000000000000,Vehicle,3/25/2011 0:00:00
320,6/1/2011,FP186,M,11.5 mo.,"CREW, Bird Rookery Swamp, Collier County",Intraspecific aggression,DEATH,2011.000000000000000,439160.000000000000000,2912018.000000000000000,ISA,6/1/2011 0:00:00
321,7/6/2011,UCFP161,M,7 to 9,"Silver Strand Grove, N of Immokalee, Collier County",Intraspecific aggression,DEATH,2011.000000000000000,458884.000000000000000,2927078.000000000000000,ISA,7/6/2011 0:00:00
322,7/11/2011,UCFP162,M,1 to 1.5,"SR 29, Owl Hammock Curve",Vehicle,DEATH,2011.000000000000000,465480.000000000000000,2915822.000000000000000,Vehicle,7/11/2011 0:00:00
323,7/29/2011,FP156,M,6,"PSSF, Belle Meade, Collier County",Pseudorabies,DEATH,2011.000000000000000,440343.000000000000000,2891975.000000000000000,Disease,7/29/2011 0:00:00
325,9/14/2011,FP188,F,3.5,"Private Land, Collier County",Unknown,DEATH,2011.000000000000000,445765.000000000000000,2929982.000000000000000,Unknown,9/14/2011 0:00:00
326,9/19/2011,UCFP164,F,3 to 4,"SR 29, Owl Hammock Curve",Vehicle,DEATH,2011.000000000000000,465708.000000000000000,2915138.000000000000000,Vehicle,9/19/2011 0:00:00
327,10/30/2011,UCFP165,F,3 to 4,"SR 29, Collier-Hendry line",Vehicle,DEATH,2011.000000000000000,456647.000000000000000,2932165.000000000000000,Vehicle,10/30/2011 0:00:00
328,1/2/2012,UCFP166,M,4 to 5,"SR 82, 3.8km W of SR 29, Collier County",Vehicle,DEATH,2012.000000000000000,453015.000000000000000,2930599.000000000000000,Vehicle,1/2/2012 0:00:00
329,1/5/2012,FP189,M,3.5,"Tomato field S of Oil Well Rd, Collier County",Intraspecific aggression,DEATH,2012.000000000000000,469224.000000000000000,2908189.000000000000000,ISA,1/5/2012 0:00:00
330,1/7/2012,UCFP167,F,4,"US 41, 0.5km W of Manatee Rd, Collier County",Vehicle,DEATH,2012.000000000000000,431817.000000000000000,2881626.000000000000000,Vehicle,1/7/2012 0:00:00
333,2/23/2012,K351,M,12 days,SBCNP,Malnutrition,DEATH,2012.000000000000000,477170.000000000000000,2889331.000000000000000,Other,2/23/2012 0:00:00
334,2/27/2012,FP133,M,12,FSSP,Intraspecific aggression,DEATH,2012.000000000000000,462430.000000000000000,2889381.000000000000000,ISA,2/27/2012 0:00:00
337,4/7/2012,UCFP169,M,9 wks,"Orange grove N of Church Rd., Hendry County",Vehicle,DEATH,2012.000000000000000,452153.000000000000000,2937920.000000000000000,Vehicle,4/7/2012 0:00:00
338,4/16/2012,UCFP170,M,3 to 4,"Alico Rd, 0.1 km W of Airport Haul Rd, LeeCounty",Vehicle,DEATH,2012.000000000000000,424642.000000000000000,2930503.000000000000000,Vehicle,4/16/2012 0:00:00
339,5/18/2012,FP212,M,3,2 km NW of CR 846 and County Line Rd intersection,Intraspecific aggression,DEATH,2012.000000000000000,471367.000000000000000,2923762.000000000000000,ISA,5/18/2012 0:00:00
340,5/21/2012,FP211,M,2,"Orange grove 8.7km SE of prison, Hendry County",Intraspecific aggression,DEATH,2012.000000000000000,482344.000000000000000,2905027.000000000000000,ISA,5/21/2012 0:00:00
342,5/26/2012,UCFP172,M,4 mo.,"Found injured on SR82, E of Church Rd., Lee County",Vehicle - rescued but died in

captivity due to injuries,DEATH,2012.000000000000000,447325.000000000000000,2932145.000000000000000,Vehicle,5/26/2012 0:00:00
343,6/19/2012,UCFP173,F,7 mo.,"CR 846, 2.4 km E of Oil Well Grade Rd",Vehicle,DEATH,2012.000000000000000,450396.000000000000000,2916383.000000000000000,Vehicle,6/19/2012 0:00:00
344,7/18/2012,FP197,M,4.5,Lee County Port Authority Mitigation Land,Unknown,DEATH,2012.000000000000000,436245.000000000000000,2932312.000000000000000,Unknown,7/18/2012 0:00:00
347,10/6/2012,FP196,F,2.5,"US 41, 1.4km E of San Marco Rd, Collier County",Vehicle,DEATH,2012.000000000000000,441862.000000000000000,2874470.000000000000000,Vehicle,10/6/2012 0:00:00
349,10/9/2012,UCFP176,F,3 mo,"Immokalee Rd, 2 miles N of fairgrounds, Collier County",Vehicle,DEATH,2012.000000000000000,440615.000000000000000,2912846.000000000000000,Vehicle,10/9/2012 0:00:00
350,11/4/2012,UCFP177,F,4 mo.,"18th Ave NE, Golden Gate Estates",Vehicle,DEATH,2012.000000000000000,444239.000000000000000,2904966.000000000000000,Vehicle,11/4/2012 0:00:00
351,11/14/2012,UCFP178,F,1,"SR 29, 1.5 miles S of I-75, Collier County",Vehicle,DEATH,2012.000000000000000,465514.000000000000000,2889930.000000000000000,Vehicle,11/14/2012 0:00:00
352,11/19/2012,UCFP179,M,3,"SR 29, Owl Hammock Curve",Vehicle,DEATH,2012.000000000000000,465601.000000000000000,2915635.000000000000000,Vehicle,11/19/2012 0:00:00
353,11/19/2012,UCFP180,M,4 to 5,"US 41, 0.5 miles W of Manatee Road",Vehicle,DEATH,2012.000000000000000,431994.000000000000000,2881506.000000000000000,Vehicle,11/19/2012 0:00:00
354,11/26/2012,UCFP181,F,2 to 3 mos.,"Immokalee Rd, 3.6 miles N of Oil Well Rd, Collier County",Vehicle,DEATH,2012.000000000000000,440604.000000000000000,2913945.000000000000000,Vehicle,11/26/2012 0:00:00
359,1/3/2013,UCFP185,M,10 mos.,"SR 29, 600 ft. S Oil Well Rd, Collier County",Vehicle,DEATH,2013.000000000000000,465804.000000000000000,2909046.000000000000000,Vehicle,1/3/2013 0:00:00
360,1/26/2013,UCFP186,M,2 to 4,"Sadie Cypress, 2 miles S 846, Collier County",Intraspecific aggression,DEATH,2013.000000000000000,469878.000000000000000,2920440.000000000000000,ISA,1/26/2013 0:00:00
362,2/1/2013,UCFP188,M,2 to 3,"OSSF, S of Dove Field Rd, Hendry County",Intraspecific aggression,DEATH,2013.000000000000000,467771.000000000000000,2943810.000000000000000,ISA,2/1/2013 0:00:00
363,2/20/2013,UCFP189,F,5 to 6 mo.,"Everglades Blvd S, Golden Gate Estates, Collier County",Vehicle,DEATH,2013.000000000000000,445637.000000000000000,2897918.000000000000000,Vehicle,2/20/2013 0:00:00
366,4/28/2013,UCFP192,F,10,"CR 846, 2.3 miles W of County Line Road, Collier County",Vehicle,DEATH,2013.000000000000000,469133.000000000000000,2922379.000000000000000,Vehicle,4/28/2013 0:00:00
367,5/13/2013,FP224,F,9 mo.,"12th St NE, GGE, 200 m south of GG Blvd, Collier County",Vehicle,INJURY,2013.000000000000000,441795.000000000000000,2901094.000000000000000,Injured,5/13/2013 0:00:00
370,7/8/2013,UCFP195,M,2 to 3,"CR 846, 7.9km E of County Line Rd, Hendry County",Vehicle,DEATH,2013.000000000000000,480715.000000000000000,2923136.000000000000000,Vehicle,7/8/2013 0:00:00
371,7/15/2013,UCFP196,M,2 to 3,"I-75, 96.5mm, Collier County",Vehicle,DEATH,2013.000000000000000,439756.000000000000000,2892872.000000000000000,Vehicle,7/15/2013 0:00:00

373,8/19/2013,UCFP198,F,3 yrs,"I-75, 93 MM on Miller Canal Bridge, Collier County",Vehicle,DEATH,2013.000000000000000,444510.000000000000000,2892765.000000000000000,Vehicle,8/19/2013 0:00:00
374,9/20/2013,UCFP199,M,4 yrs,"CR951,Î“Ã¶Â¼â”œÃ Collier County",Vehicle,DEATH,2013.000000000000000,431279.000000000000000,2886995.000000000000000,Vehicle,9/20/2013 0:00:00
375,11/12/2013,UCFP200,M,2-3,"Treeline Ave. N of Daniels Pkwy., Lee County",Vehicle,DEATH,2013.000000000000000,421689.000000000000000,2938537.000000000000000,Vehicle,11/12/2013 0:00:00
376,12/2/2013,UCFP201,M,1 yr,"Northbound I75 west of FakaUnion MM92, Collier County",Vehicle,DEATH,2013.000000000000000,447599.000000000000000,2892764.000000000000000,Vehicle,12/2/2013 0:00:00
378,12/11/2013,UCFP202,U,9 mo.,"FL Panther National Wildlife Refuge, Collier County",Intraspecific Aggression,DEATH,2013.000000000000000,465089.000000000000000,2903487.000000000000000,ISA,12/11/2013 0:00:00
379,1/2/2014,UCFP203,M,2-3,"I-75 near MM 111, Collier County",Vehicle,DEATH,2014.000000000000000,425824.000000000000000,2904812.000000000000000,Vehicle,1/2/2014 0:00:00
381,1/22/2014,UCFP204,M,1.5,"SR 29, Owl Hammock Curve, Collier County",Vehicle,DEATH,2014.000000000000000,465702.000000000000000,2915370.000000000000000,Vehicle,1/22/2014 0:00:00
382,1/23/2014,UCFP205,M,7 days,"FPNWR, Collier County","Hypothermic at den, removed from wild to captivity",DEATH,2014.000000000000000,455582.000000000000000,2898700.000000000000000,Other,1/23/2014 0:00:00
390,4/8/2014,UCFP210,M,2-3,"CR 846, 6 miles E of Immokalee, Collier County",Vehicle,DEATH,2014.000000000000000,469644.000000000000000,2922475.000000000000000,Vehicle,4/8/2014 0:00:00
391,4/11/2014,UCFP211,M,8-10 mos.,"Belle Meade, PSSF, Collier County",Intraspecific Aggression,DEATH,2014.000000000000000,437969.000000000000000,2883331.000000000000000,ISA,4/11/2014 0:00:00
394,4/25/2014,FP163,M,7yr 2mo.,"Co Line Rd, Collier/Hendry Co. Line",Vehicle,DEATH,2014.000000000000000,472937.000000000000000,2917981.000000000000000,Vehicle,4/25/2014 0:00:00
395,4/25/2014,FP231,M,2,"Golden Gate Blvd, just west of Everglades, Collier Co",Vehicle,INJURY,2014.000000000000000,444507.000000000000000,2901327.000000000000000,Injured,4/25/2014 0:00:00
396,5/1/2014,UCFP213,F,3,"I-75 near MM 134, Lee County",Vehicle,DEATH,2014.000000000000000,421083.000000000000000,2939808.000000000000000,Vehicle,5/1/2014 0:00:00
397,5/16/2014,UCFP214,M,14 mo.,"Oil Well Rd, east of Pacific Grade, Collier Co.",Vehicle,DEATH,2014.000000000000000,460119.000000000000000,2908418.000000000000000,Vehicle,5/16/2014 0:00:00
398,6/12/2014,K390/UCFP215,F,1-2,"US41, SE of Collier Seminole SP, Collier Co.",Vehicle,DEATH,2014.000000000000000,441230.000000000000000,2874724.000000000000000,Vehicle,6/12/2014 0:00:00
399,6/25/2014,UCFP216,F,1,"Corkscrew Rd, near CREW gate 5",Vehicle,DEATH,2014.000000000000000,443882.000000000000000,2926931.000000000000000,Vehicle,6/25/2014 0:00:00
402,8/4/2014,FP231,M,2.5yrs,"Golden Gate Estates, Collier County",Unknown,DEATH,2014.000000000000000,441059.000000000000000,2903916.000000000000000,Unknown,8/4/2014 0:00:00
404,8/24/2014,UCFP218,F,4 mo.,Immokalee Rd/Wildwood Blvd (Bonita Bay Club East),Vehicle,DEATH,2014.000000000000000,434792.000000000000000,2906157.000000000000000,Vehicle,8/24/2014 0:00:00

405,8/24/2014,UCFP219,F,4 mo.,Immokalee Rd/Krape Rd,Vehicle,DEATH,2014.000000000000000,434826.000000000000000,2906117.000000000000000,Vehicle,8/24/2014 0:00:00
410,11/13/2014,UCFP223,F,3-4 yrs,"County Line Road, just south of CR846, Collier County",Vehicle,DEATH,2014.000000000000000,472874.000000000000000,2921198.000000000000000,Vehicle,11/13/2014 0:00:00
412,11/21/2014,K434,F,11 wks.,"Parker's Hammock Road, Collier County","Separated from dam, removed from wild to captivity",DEATH,2014.000000000000000,429403.000000000000000,2888204.000000000000000,Other,11/21/2014 0:00:00
413,11/28/2014,UCFP224,M,6 mo.,Golden Gate Blvd/6th St NE,Vehicle,DEATH,2014.000000000000000,440644.000000000000000,2901299.000000000000000,Vehicle,11/28/2014 0:00:00
415,12/18/2014,UCFP226,M,3 yrs,"Collier Blvd, 2.4km south of US41, Collier County",Vehicle,DEATH,2014.000000000000000,429971.000000000000000,2880459.000000000000000,Vehicle,12/18/2014 0:00:00
417,12/28/2014,UCFP228,M,2 yrs,Golden Gate Blvd/10th St NE,Vehicle,DEATH,2014.000000000000000,441272.000000000000000,2901290.000000000000000,Vehicle,12/28/2014 0:00:00
418,12/30/2014,UCFP229,F,2.5,"16th ST SE, Golden Gate Estates, Collier County",Vehicle,DEATH,2014.000000000000000,442620.000000000000000,2900388.000000000000000,Vehicle,12/30/2014 0:00:00
419,12/31/2014,FP213,F,5.5,"Dinner Island Ranch WMA, Hendry County",Intraspecific Aggression,DEATH,2014.000000000000000,476803.000000000000000,2932808.000000000000000,ISA,12/31/2014 0:00:00
420,1/16/2015,UCFP230,F,1.5,"I-75 1/2 mile east of west toll booth, Collier County",Vehicle,DEATH,2015.000000000000000,434627.000000000000000,2893049.000000000000000,Vehicle,1/16/2015 0:00:00
421,1/20/2015,UCFP231,F,1.5,"Immokalee Rd, 250m S of Bethune RD, Collier Co",Vehicle,DEATH,2015.000000000000000,458394.000000000000000,2920241.000000000000000,Vehicle,1/20/2015 0:00:00
422,1/24/2015,UCFP232,M,4 yrs,"MM132, I75, Lee County",Vehicle,DEATH,2015.000000000000000,421023.000000000000000,2938590.000000000000000,Vehicle,1/24/2015 0:00:00
423,1/25/2015,UCFP233,M,5-6 yrs,"MM95, I75, Collier County",Vehicle,DEATH,2015.000000000000000,443049.000000000000000,2892800.000000000000000,Vehicle,1/25/2015 0:00:00
424,1/29/2015,UCFP234,U,U,"Corkscrew Swamp Sanctuary, Collier Co. (skeletal)",Unknown (skeletal remains),DEATH,2014.000000000000000,439704.000000000000000,2916586.000000000000000,Unknown,1/29/2015 0:00:00
425,2/6/2015,UCFP235,M,10 mo.,"Golden Gate Estates, Collier Co.",Unknown,DEATH,2015.000000000000000,439060.000000000000000,2899850.000000000000000,Unknown,2/6/2015 0:00:00
428,2/25/2015,FP183,M,9,"SR29, 2.75 mi south of I-75",Vehicle,DEATH,2015.000000000000000,465511.000000000000000,2888327.000000000000000,Vehicle,2/25/2015 0:00:00
429,3/7/2015,K402,M,1.5,"I-75, 0.5 miles S of Exit 123, Corkscrew Road",Vehicle,DEATH,2015.000000000000000,422915.000000000000000,2922176.000000000000000,Vehicle,3/7/2015 0:00:00
430,3/8/2015,UCFP237,M,2.5,"CR951, 300 m north of Port au Prince Rd, Collier Co.",Vehicle,DEATH,2015.000000000000000,429869.000000000000000,2878940.000000000000000,Vehicle,3/8/2015 0:00:00
431,3/20/2015,FP148,F,11.5,"Picayune Strand State Forest, Collier Co.",Intraspecific Aggression,DEATH,2015.000000000000000,443102.000000000000000,2882562.000000000000000,ISA,3/20/2015

0:00:00
432,3/22/2015,UCFP238,M,5,"Immokalee Road, 3.4km west of Camp Keais Rd., Collier Co.",Illegal take - Under Investigation,DEATH,2015.000000000000000,455546.000000000000000,2916438.000000000000000,Unknown,3/22/2015 0:00:00
433,3/30/2015,FP237,M,1,"Audubonâ•¬Ã´â”œÃ§â”œÃ»s Corkscrew Sanctuary, Collier Co.",Intraspecific Aggression,DEATH,2015.000000000000000,437544.000000000000000,2919326.000000000000000,ISA,3/30/2015 0:00:00
434,4/3/2015,UCFP239,M,3-4,"I75, 1.1 miles east of tollbooth, Collier Co.",Vehicle,DEATH,2015.000000000000000,434965.000000000000000,2893008.000000000000000,Vehicle,4/3/2015 0:00:00
435,4/13/2015,UCFP240,F,1,"SR29, 1.3 mi N. of CR858",Vehicle,DEATH,2015.000000000000000,465771.000000000000000,2911308.000000000000000,Vehicle,4/13/2015 0:00:00
436,4/27/2015,FP159,M,12-13,"Private land, 2 miles north of Corkscrew Rd., Lee Co.",Unknown,DEATH,2015.000000000000000,440954.000000000000000,2929314.000000000000000,Unknown,4/27/2015 0:00:00
437,4/30/2015,UCFP241,M,U,"I-75, 0.5 miles S of Exit 123, Corkscrew Road",Vehicle,DEATH,2015.000000000000000,422857.000000000000000,2922300.000000000000000,Vehicle,4/30/2015 0:00:00
440,6/16/2015,FP153,F,14,Big Cypress National Preserve,Unknown,DEATH,2015.000000000000000,481475.000000000000000,2891180.000000000000000,Unknown,6/16/2015 0:00:00
441,7/5/2015,UCFP244,M,1.5,"Immokalee Rd., 0.4 mi south of Wild Turkey Dr.",Vehicle,DEATH,2015.000000000000000,440610.000000000000000,2914266.000000000000000,Vehicle,7/5/2015 0:00:00
442,7/8/2015,UCFP245,M,10-11 mo,"Daniels Pkwy, 1 mi SW of SR82",Vehicle,DEATH,2015.000000000000000,427645.000000000000000,2939120.000000000000000,Vehicle,7/8/2015 0:00:00
443,7/1/2015,UCFP246,U,2 weeks,Lee County Port Authority Mitigation Land,Unknown,DEATH,2015.000000000000000,436272.000000000000000,2930040.000000000000000,Unknown,7/1/2015 0:00:00
445,7/30/2015,UCFP248,F,4-5 mo,"Golden Gate Blvd (2300 GGBlvd E), Collier Co.",Vehicle,DEATH,2015.000000000000000,444240.000000000000000,2901319.000000000000000,Vehicle,7/30/2015 0:00:00
446,8/9/2015,FP240,F,2.7,"Deep Lake Unit of Big Cypress NP, Collier Co.",Intraspecific Aggression,DEATH,2015.000000000000000,470754.000000000000000,2878256.000000000000000,ISA,8/9/2015 0:00:00
447,9/18/2015,FP219,F,4.3,"I-75, just west of exit 101, Collier Co.",Vehicle,DEATH,2015.000000000000000,430857.000000000000000,2893841.000000000000000,Vehicle,9/18/2015 0:00:00
448,9/22/2015,UCFP249,M,4 mo.,CR858. 1/4 mi west of County Line Rd,Vehicle,DEATH,2015.000000000000000,472684.000000000000000,2910202.000000000000000,Vehicle,9/22/2015 0:00:00
450,9/30/2015,K432,F,13 mo,"I-75, mm 102",Vehicle,DEATH,2015.000000000000000,430515.000000000000000,2893907.000000000000000,Vehicle,9/30/2015 0:00:00
451,10/8/2015,UCFP251,F,3,"US 41, west of CR 92, Collier Co.",Vehicle,DEATH,2015.000000000000000,439610.000000000000000,2876037.000000000000000,Vehicle,10/8/2015 0:00:00
452,10/23/2015,FP222,F,10.5,"I75, MM90, Collier Co.",Vehicle,DEATH,2015.000000000000000,449994.000000000000000,2892752.000000000000000,Vehicle,10/23/2015 0:00:00
453,10/31/2015,UCFP252,M,4 mos.,"CSSP near boat ramp, Collier. Co.",Emaciation due to orphaning,DEATH,2015.000000000000000,440531.000000000000000,2874451.000000000000000,Other,10/31/2015

0:00:00
454,11/2/2015,UCFP253,F,4 mos.,"CSSP campground, Collier Co.",Removed from wild to permanent captivity,DEATH,2015.000000000000000,440337.000000000000000,2875504.000000000000000,Other,11/2/2015 0:00:00
455,11/23/2015,UCFP254,M,8-10 mos.,"CR846, just W Everglades Blvd., Collier Co.",Vehicle,DEATH,2015.000000000000000,445326.000000000000000,2916359.000000000000000,Vehicle,11/23/2015 0:00:00
458,12/8/2015,UCFP255,F,1,"CR832, Hendry Co.",Vehicle,DEATH,2015.000000000000000,469937.000000000000000,2940274.000000000000000,Vehicle,12/8/2015 0:00:00
459,12/15/2015,UCFP256,F,2.5,"Corkscrew Road, Collier Co.",Vehicle,DEATH,2015.000000000000000,447258.000000000000000,2930661.000000000000000,Vehicle,12/15/2015 0:00:00
461,12/21/2015,UCFP258,M,1,"SR29, Owl Hammock Curve, Collier Co.",Vehicle,DEATH,2015.000000000000000,465350.000000000000000,2915951.000000000000000,Vehicle,12/21/2015 0:00:00
463,1/3/2016,UCFP260,M,6 mo,"18th Ave SE, W of Desoto, Collier Co.",Unknown,DEATH,2016.000000000000000,448314.000000000000000,2897846.000000000000000,Unknown,1/3/2016 0:00:00
464,1/18/2016,UCFP261,M,3 mo,"Sakata Farms off SR82, Lee Co.",Separated from dam. Removed to permanent captivity,DEATH,2016.000000000000000,438606.000000000000000,2933975.000000000000000,Other,1/18/2016 0:00:00
465,1/20/2016,UCFP262,F,7-9 mo,"Daniel's Parkway, 1/2 mile east of Treeline Avenue, Lee Co.",Vehicle,DEATH,2016.000000000000000,422550.000000000000000,2936563.000000000000000,Vehicle,1/20/2016 0:00:00
467,1/30/2016,UCFP264,F,4,"SR82, 1.4 km west of Church Rd, Hendry Co.",Vehicle,DEATH,2016.000000000000000,445693.000000000000000,2932704.000000000000000,Vehicle,1/30/2016 0:00:00
468,2/2/2016,UCFP265,M,2-3,"I75, 2 km north of Daniel's Parkway, Lee Co.",Vehicle,DEATH,2016.000000000000000,420926.000000000000000,2938625.000000000000000,Vehicle,2/2/2016 0:00:00
469,2/12/2016,UCFP266,F,1.5-2,"SR82, near Sparta Avenue, Lee County",Vehicle,DEATH,2016.000000000000000,436931.000000000000000,2935388.000000000000000,Vehicle,2/12/2016 0:00:00
470,2/15/2016,UCFP267,U,5-6 mo,"SR82, just E of Hendry Co line, Collier County",Vehicle,DEATH,2016.000000000000000,445938.000000000000000,2932627.000000000000000,Vehicle,2/15/2016 0:00:00
471,2/17/2016,UCFP268,M,4,"SR 82, 1.25 miles E of Corkscrew Road, Collier County",Vehicle,DEATH,2016.000000000000000,450318.000000000000000,2931355.000000000000000,Vehicle,2/17/2016 0:00:00
472,2/18/2016,UCFP269,U,2,"Lely Resort Golf Course, 200 yds west of CR951, Collier County",Unknown,DEATH,2016.000000000000000,431073.000000000000000,2886708.000000000000000,Unknown,2/18/2016 0:00:00
475,3/25/2016,UCFP272,M,14-16 mo,Golden Gate Blvd. in Collier County,Vehicle,DEATH,2016.000000000000000,431721.000000000000000,2901236.000000000000000,Vehicle,3/25/2016 0:00:00
476,4/1/2016,UCFP273,U,1,I-75 near mile marker 96 (Belle Meade) on Alligator Alley in Collier County,Vehicle,DEATH,2016.000000000000000,439936.000000000000000,2892818.000000000000000,Vehicle,4/1/2016 0:00:00
478,4/10/2016,UCFP277,M,5-6 mo,Golden Gate Blvd just east of 22nd St NE in Collier County,Vehicle,DEATH,2016.000000000000000,444053.000000000000000,2901324.000000000000000,Vehicle,4/10/2016 0:00:00
479,4/15/2016,UCFP278,M,16-18 mo,Randall Blvd (just east of 16th St. NE) in Collier County,Vehicle,DEATH,2016.000000000000000,442711.000000000000000,2906561.000000000000000,Vehicle,4/15/

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482,4/9/2016,UCFP276,M,4-5,"I-75, 0.6 mi south of Bonita Beach Rd, Lee County",Vehicle,DEATH,2016.000000000000000,425385.000000000000000,2911541.000000000000000,Vehicle,4/9/2016 0:00:00
483,4/26/2016,UCFP279,F,3-4,"I-75, southbound at 122 MM, Lee County",Vehicle,DEATH,2016.000000000000000,422859.000000000000000,2921332.000000000000000,Vehicle,4/26/2016 0:00:00
486,4/6/2016,UCFP275,M,3,Immokalee Road (2.6 mi east of CR951) in Collier County,Vehicle,DEATH,2016.000000000000000,434362.000000000000000,2906112.000000000000000,Vehicle,4/6/2016 0:00:00
487,5/26/2016,K403,F,2.5,Danielâ€™s Parkway in Lee County,Vehicle,DEATH,2016.000000000000000,426002.000000000000000,2937857.000000000000000,Vehicle,5/26/2016 0:00:00
489,6/16/2016,UCFP284,F,6 mo.,Intersection Oil Well Rd. and Camp Keais Rd.,Vehicle,DEATH,2016.000000000000000,458456.000000000000000,2908417.000000000000000,Vehicle,6/16/2016 0:00:00
490,6/22/2016,FP215,F,11,"Private property north of the Florida panther National Wildlife Refuge in Collier County, FL",Unknown,DEATH,2016.000000000000000,457572.000000000000000,2899737.000000000000000,Unknown,6/22/2016 0:00:00
491,8/05/2016,UCFP285,F,4,"SR 82, 1/2 mi. west of Church Road",Vehicle,DEATH,2016.000000000000000,446336.000000000000000,2932501.000000000000000,Vehicle,8/5/2016 0:00:00
492,8/05/2016,FP242,M,10,Immokalee Ranch in Hendry County,Unknown,DEATH,2016.000000000000000,475714.000000000000000,2921881.000000000000000,Unknown,8/5/2016 0:00:00
493,8/14/2016,FP171,M,9-10,"State Road 29 in Collier County, Florida",Vehicle,DEATH,2016.000000000000000,465441.000000000000000,2897227.000000000000000,Vehicle,8/14/2016 0:00:00
494,8/29/2016,FP195,F,8.5,Golden Gate Estates in Collier County,Intraspecific Aggression,DEATH,2016.000000000000000,445252.000000000000000,2894222.000000000000000,Intraspecific Aggression,8/29/2016 0:00:00
495,10/2/2016,K421,M,2yr 5mo,"2685 Florida 29, Immokalee, 34142",Vehicle,DEATH,2016.000000000000000,456695.000000000000000,2926971.000000000000000,Vehicle,10/2/2016 0:00:00
498,10/28/2016,UCFP288,M,6 mos.,"Daniels Parkway southwest of SR82, Lee County",Vehicle,DEATH,2016.000000000000000,427205.000000000000000,2938572.000000000000000,Vehicle,10/28/2016 0:00:00
499,10/31/2016,UCFP289,F,3,Golden Gate Blvd 1km west of Everglades Blvd,Vehicle,DEATH,2016.000000000000000,444626.000000000000000,2901349.000000000000000,Vehicle,10/31/2016 0:00:00
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501,11/20/2016,UCFP291,F,9 mos.,CR832 two miles east of SR29 in Hendry County,Vehicle,DEATH,2016.000000000000000,459840.000000000000000,2941775.000000000000000,Vehicle,11/20/2016 0:00:00
502,12/7/2016,UCFP 292,F,2,"State Road 29 in Collier County, 2 miles north of County Road 858",Vehicle,DEATH,2016.000000000000000,465765.000000000000000,2911797.000000000000000,Vehicle,12/7/2016 0:00:00
503,12/8/2016,UCFP 293,F,4 mos.,Lee County,Vehicle,DEATH,2016.000000000000000,425337.000000000000000,2937400.000000000000000,Vehicle,12/8/2016 0:00:00
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2016 0:00:00
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508,2/23/2017,UCFP299,Unknown,Unknown,east of Desoto Blvd and north of Golden Gate Blvd in Golden Gate Estates,Unknown,DEATH,2017.000000000000000,449088.000000000000000,2901640.000000000000000,Unknown,2/23/2017 0:00:00
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513,3/14/2017,UCFP304,F,4,2 miles east of Immokalee in Collier County,Vehicle,DEATH,2017.000000000000000,462624.000000000000000,2922152.000000000000000,Vehicle,3/14/2017 0:00:00
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517,7/3/2017,UCFP311,M,5,Immokalee Rd in Collier County,Vehicle,DEATH,2017.000000000000000,434401.000000000000000,2906053.000000000000000,Vehicle,7/3/2017 0:00:00
518,7/18/2017,UCFP312,F,2.5,Collier Blvd (CR951) just north of City Gate Blvd in Collier County,Vehicle,DEATH,2017.000000000000000,431376.000000000000000,2894656.000000000000000,Vehicle,7/18/2017 0:00:00
524,11/7/2017,K4111,M,3.7,Immokalee Rd near the Corkscrew Swamp Sanctuary in Collier County,Vehicle,DEATH,2017.000000000000000,440593.000000000000000,2914679.000000000000000,Vehicle,11/7/2017 0:00:00
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528,12/9/2017,UCFP320,M,3 mo.,Desoto Blvd. just south of 24th Ave SE in the Golden Gate Estates subdivision of Naples in Collier County,Vehicle,DEATH,2017.000000000000000,448599.000000000000000,2896292.000000000000000,Vehicle,12/9/2017 0:00:00
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547,3/21/2018,FP236,M,9-10yr,Rock Road within Golden Gate Estates in Collier County,Unknown,DEATH,2018.000000000000000,437239.000000000000000,2905278.000000000000000,Unknown,12/30/1899 0:00:00
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570,5/21/2019,UCFP355,M,2,SR 82 in Lee County,Vehicle,DEATH,2019.000000000000000,431028.000000000000000,2939292.000000000000000,Vehicle,5/21/2019 0:00:00
571,6/27/2019,UCFP356,F,5,private land in Collier County,Vehicle,DEATH,2019.000000000000000,464626.000000000000000,2924788.000000000000000,Vehicle,6/27/2019 0:00:00
572,7/5/2019,UCFP357,F,1.5,SR82 in Lee County,Vehicle,DEATH,2019.000000000000000,434018.000000000000000,2937807.000000000000000,Vehicle,7/5/2019 0:00:00

January 6, 2020

Andrew D. Kelly, Colonel
District Commander
U.S. Army Corps of Engineers
1520 Royal Palm Square Blvd, Suite 310
Fort Myers, Florida 33919

Service Consultation Code:	04EF2000-2019-F-1146
Corps Application Number:	SAJ-2018-01385 (SP-EMC)
Date Received:	September 20, 2019
Consultation Initiation Date:	December 3, 2019
Applicant:	Winchester Land, LLC
Project:	Hyde Park
County:	Collier

Dear Colonel Kelly:

The U.S. Fish and Wildlife Service (Service) has received the U.S. Army Corps of Engineers (Corps) request for consultation dated September 20, 2019, for the Winchester Land, LLC (Applicant) proposed Hyde Park residential and commercial development (Project). This document transmits the Service's biological opinion based on our review of the proposed Project located in Collier County, Florida, and its effects on the Florida panther (*Puma concolor coryi*; panther). It also includes and summarizes our concurrences for the Corps' determinations regarding the endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*; snail kite) and Florida bonneted bat (*Eumops floridanus*; FBB), and the threatened wood stork (*Mycteria Americana*). This document is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 et seq.).

This biological opinion is based on information provided in the Corps' September 20, 2019, consultation request letter, and other information provided by DexBender Environmental Consulting (Consultant). As of September 20, 2019, the Service has received all the information necessary for initiation of formal consultation on the panther for this Project, as required in the regulations governing interagency consultations (50 Code of Federal Regulations (CFR) § 402.14). A complete record of this consultation is on file at the Service's South Florida Ecological Services Office in Vero Beach, Florida.

Consultation history

By email dated September 20, 2019, the Corps submitted a request to the Service for consultation, including a description of Project impacts, species assessments, and information to

support a "may affect, and is likely to adversely affect" determination for the eastern indigo snake and panther; and a "may affect, but is not likely to adversely affect" determination for the snail kite, FBB, Florida scrub-jay, and wood stork.

In a meeting on December 3, 2019, the Service met with the Consultant and other Applicant representatives to discuss the Project. It was decided that since the property bordering the east side of the Project conducted an FBB acoustic survey and recorded FBBs that an acoustic survey on this site was not necessary. The Service informed them that based on eastern indigo snake interim guidance from the State Supervisor on November 22, 2019, this Project is outside the 0.62-mile (mi) buffer of the nearest indigo snake occurrence and further consultation is not warranted. It was also agreed that habitat on site was not very suitable for eastern indigo snakes, nor Florida scrub-jays.

By email dated December 4, 2019, the Service suggested that the Corps revise their determination for eastern indigo snakes and Florida scrub-jays to "no effect" based on distance to nearest known occurrences and little suitable habitat on site.

By email dated December 6, 2019, the Service asked the Consultant to clarify which site plan was accurate and confirm the acreages of each land use type post-construction.

By email dated December 19, 2019, the Consultant provided the accurate site plan with post-construction land use acreages and a revised Panther Habitat Unit (PHU) calculation.

By email dated December 19, 2019, the Service requested clarification on where PHUs would be purchased, suggested a minimization measure for the panther to provide educational materials to construction workers and residents about the risk of panther-vehicle interactions, and suggested a voluntary donation to the FBB Conservation Fund.

By email dated December 19, 2019, the Corps revised the determination for the eastern indigo snake and Florida scrub-jay to "no effect."

By email dated December 20, 2019, the Consultant clarified where PHUs would be purchased, stated that the Applicant would agree to provide educational materials about panthers to construction workers and residents, and provide a $1,000 voluntary donation to the FBB Conservation Fund.

BIOLOGICAL OPINION

This Biological Opinion provides the Service's opinion as to whether the proposed Project is likely to jeopardize the continued existence of the panther. There is no designated critical habitat for the panther; therefore, this Biological Opinion will not address destruction or adverse modification of critical habitat.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATIONS

Jeopardy determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which determine the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) the Cumulative Effects, which evaluate the effects of future, non-federal activities in the action area on the species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the species, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

DESCRIPTION OF THE PROPOSED ACTION

The Applicant's proposed Project is the construction of a residential and commercial development on a 654.79-acre (ac) parcel, which would consist of 1,500 single-family and 300 multi-family residential units, 45,000 square feet (sf) of commercial units and 18,000 sf of government/institutional units. The Project site is located in Section 16, Township 48 South, Range 28 East, at 4697 Oil Well Road, Naples, Collier County, Florida. The property is surrounded by roadways and developed residential properties to the north, west, and south and agricultural fields to the east (Latitude 26.301950, Longitude -81.521390) (Figure 1).

The Project site was converted to row crops and improved pasture prior to 1980. By 1993, the entire property had been converted to row crop production. In 2002 the property became a fill pit and currently has seven borrow pits totaling 391.30 acres. Along the southern edge of the property, 12.26 ac of the Project site is right-of-way and impacts are covered under a previous Corps permit for the widening of Oil Well Road (Service consultation code 41420-2006-F-1011). The remainder of the property consists of 129.63 ac of disturbed land, 110.49 ac of improved pastures, 400.52 ac of water and ditches, and 1.89 ac of exotic plants. The proposed Project would impact 75.55 ac of jurisdictional non-wetland waters as the existing borrow areas are reshaped to match the development plan (Figure 2). Of the 75.55 ac of impacts, only

11.79 ac of waters will be filled. Post-construction there will be approximately 246.91 ac of lakes, 208.60 ac of open space, 185.46 ac of impervious surfaces, and 1.56 ac of preserve (Figure 2).

Minimization and conservation measures

The proposed Project would result in the loss of 242.01 ac of panther habitat (129.63 ac of disturbed land, 110.49 ac of improved pasture, and 1.89 ac of exotics), which equates to 1,324 PHUs (Table 1). The Applicant proposes to purchase 0.47 credits at the Panther Island Mitigation Bank Expansion (PIMBE) for impacts to state jurisdictional wetlands, which equals 16 PHUs. The remaining 1,308 PHUs will be purchased from Panther Passage Conservation Bank (PPCB). The Applicant also proposes to provide educational materials and install signage to inform construction workers and residents about the risk of panther-vehicle interactions in the vicinity of the Project site, especially during evening hours.

Conservation Contribution

Even though take is not anticipated for the FBB, the Applicant proposes to donate $1,000 to the FBB Conservation Fund administered by the Wildlife Foundation of Florida to support recovery actions that benefit the FBB.

Action Area

The action area is defined as all areas to be directly or indirectly affected by the Federal action and not merely the immediate area involved in the action. The Service considers the action area as all lands within the footprint of the Project, and all lands within 25 mi (40.2 kilometers [km]) of the Project footprint. The 25-mi buffer around the Project footprint is designed to encompass mean dispersal distance of sub adult male panthers which was reported by Maehr et al. (2002) to be 23.2 mi (37.3 km) and by Comiskey et al. (2002) to be 24.9 mi (40.0 km). The 25-mi (40.2-km) buffer distance encompasses the dispersal distance of both male and female panthers because male panther dispersal distances are known to exceed those reported for female panthers (Comiskey et al. 2002; Maehr et al. 2002). The size of the action area for this consultation is consistent with action areas defined in our recent biological opinions for the panther, and it encompasses the wide ranging movements of sub adult panthers and the large home territories of adult panthers.

SPECIES NOT LIKELY TO BE ADVERSELY AFFECTED BY THE PROPOSED ACTION

Everglade snail kite

The proposed Project is within the consultation area for the snail kite. The nearest documented nest in the Service's database is approximately 20 mi to the northwest. However, snail kites have recently been documented carrying nest material approximately 8 mi northwest from the Project site and foraging in tomato fields about 1.6 mi to the east (eBird 2019). No snail kites were observed during the listed species survey in February of 2018 and the site does not contain optimum foraging habitat. The Service concurs with the Corps' determination that the Project may affect, but is not likely to adversely affect the snail kite.

Florida bonneted bat

The proposed Project is within the consultation area for the FBB and contains foraging habitat. There are no trees or buildings on site, therefore roosting is unlikely. The nearest documented roost in the Service's database is approximately 9 mi away. Acoustic surveys were not conducted on this site, but the two neighboring properties directly to the east, Rural Lands West and Ave Maria conducted FBB acoustic surveys in 2017 and 2016, respectively. These two surveys recorded some FBB activity and a likelihood of roosting, with some calls recorded within 90 minutes of sunrise and sunset (Passarella and Associates, Inc. 2017, Service 2018). Because of several confirmed presences within 0.5 to 5.7 mi from the Project site, the Service expects that FBBs forage over the entire Project site. A loss of 185.46 ac of foraging habitat represents between 0.18 percent and 9.22 percent of a FBB's foraging area (Ober 2015, 2016). This amount of loss is not likely to impair FBB foraging behavior. The lakes and open space within the Project design will continue to provide foraging habitat after Project completion. The proposed off-site wetland and panther mitigation may provide foraging and possibly roosting habitat for the FBB. The Applicant also proposes to implement Best Management Practices 5, 6, 8, 11, and 12 from the *Florida Bonneted Bat Consultation Guidelines* (Service 2019). The Service concurs with the Corps determination that the Project may affect, but is not likely to adversely affect the FBB.

Wood stork

The ditches and wetlands on the Project site currently provide 8.77 kilograms of wood stork foraging biomass. The Applicant proposes to purchase 0.47 credits at the PIMBE for impacts to state jurisdictional wetlands and 1,308 PHUs at PPCB. Together, these credits exceed the current on-site value of foraging biomass for wood storks. The Service concurs with the Corps' determination that the Project may affect, but is not likely to adversely affect the wood stork.

STATUS OF THE SPECIES

Please see enclosure for the status of the species for the panther.

Summary of threats to the species

The panther is a wide-ranging species that requires large areas of diverse landscape to survive. Dispersing sub adult males wander widely through unforested and disturbed habitat. Human population in South Florida has dramatically increased, from 1 million in 1950 to 6.6 million in 2010, resulting in secondary disturbances such as increased human presence and noise, light, air, and water pollution. In southwest Florida, where the reproducing panther population is primarily located, human population has increased from 833,892 in 2000, to an estimate of 1,231,100 in 2010, representing an increase of 47.6 percent over the 10-year period (University of Florida 2009). Increasing human population has resulted in increasing impacts on native habitat, and flora and fauna. Resulting threats to panthers include direct effects, such as human disturbance from Project construction, and habitat loss and fragmentation; and indirect effects from road mortality, human disturbance following construction, and intra-specific aggression. Table

2 provides a yearly tabulation of the population counts of the panther with the annual mortalities also shown.

The threats posed by human disturbance during and after Project construction, habitat loss and fragmentation, road mortality, and intra-specific aggression are relevant to this Project and will be discussed in the remainder of this Biological Opinion.

ENVIRONMENTAL BASELINE

Status of the species within the action area

The Service used current and historical radio-telemetry data, information on habitat quality, prey base, and evidence of uncollared panthers to evaluate panther use in the action area. Panther telemetry data are collected three days per week from fixed-wing aircraft, usually in early to midmorning. However, researchers have shown panthers are most active between dusk and dawn (Beier 1995) and are typically at rest in dense ground cover during daytime monitoring flights (Land 1994). Comiskey et al. (2002) suggested that, because data is collected when panthers are least active, these locations may present an incomplete picture of activity patterns and habitat use. However, this potential bias was not detected in a recent analysis by Land et al. (2008) using Global Positioning System (GPS) satellite location data collected throughout a 24 hour day. This study revealed panther habitat selection patterns are similar when using either aerial telemetry data collected during the day or 24 hour satellite GPS location data. Both methods showed upland and wetland forests were the habitats most selected by panthers. The study also indicated that grassland-dry prairie habitats were used more at night than during daytime hours.

Only a subset of the panther population has been radio-collared. For example, 42 radio-collared panthers, representing about 40 percent of the estimated panther population, were monitored in 2013. However, the large database of telemetry locations taken from radio-collared panthers south of the Caloosahatchee River can be used to estimate the size and number of home ranges and travel corridors south of the Caloosahatchee River. The Florida Fish and Wildlife Conservation Commission (FWC) also uses observational data collected during telemetry flights to assess the yearly breeding activity of radio-collared panthers. Female panthers accompanied by kittens or male panthers within proximity of an adult female are assumed to have engaged in breeding activity during that year.

According to the Service's Geographical Information System (GIS) database, there have been 357 panther deaths documented within 25 mi of the proposed Project as of November 2019 (Figure 3). The Service's GIS data shows that 245 of those deaths were attributed to motor vehicles. Between November 1984 and November 2019 there have been 54 panther deaths due to intraspecific aggression.

A total of 829 telemetry locations, from 36 panthers, have been documented within 5 mi of the Project from May 1983 through June 2018 (Figure 4). Since 2002, 17 vehicle-related panther mortalities have occurred within 5 mi of the proposed Project site. The status and activities of uncollared Florida panthers within the action area are unknown. The Service believes other

non-collared panthers may use the area surrounding the Project site because 17 out of 20 deaths within a 5 mi radius of the Project were uncollared panthers (Figure 4). Panthers have historically used and currently still use the Project vicinity, as indicated by the recently recorded telemetry locations and deaths within 5 mi of the Project site.

Factors affecting the species environment within the action area

Factors that affect the species environment (positively and negatively) within the action area include, but are not limited to Federal, State, or private actions and other human activities in the action area, such as: construction of highways and urban development, agriculture operations, resource extraction, public lands management (prescribed fire, public use, exotic eradication, etc.), hydrological restoration projects, and public and private land protection efforts.

Conservation lands acquired through the land acquisition programs of Federal, State, and County resource agencies within the action area have benefited panthers by preserving and maintaining habitat in perpetuity. Public conservation lands within the action area include the Big Cypress National Preserve, Florida Panther National Wildlife Refuge, Ten Thousand Islands National Wildlife Refuge, Rookery Bay National Estuarine Research Reserve, Picayune Strand State Forest, Fakahatchee Strand Preserve State Park, Corkscrew Regional Ecosystem Watershed, Okaloacoochee Slough State Forest, Dinner Island Ranch Wildlife Management Area, Spirit of the Wild Wildlife Management Area, and several county preserves. Private conservation lands include Corkscrew Swamp Sanctuary, mitigation areas, and conservation easements.

Climate Change

Our analyses under the Act include consideration of observed or likely environmental effects related to ongoing and projected changes in climate. As defined by the Intergovernmental Panel on Climate Change (IPCC), "climate" refers to average weather, typically measured in terms of the mean and variability of temperature, precipitation, or other relevant properties over time; thus "climate change" refers to a change in such a measure which persists for an extended period, typically decades or longer, due to natural conditions (*e.g.*, solar cycles) or human-caused changes in the composition of the atmosphere or in land use (IPCC 2013, p. 1450). Detailed explanations of global climate change and examples of various observed and projected changes and associated effects and risks at the global level are provided in reports issued by the IPCC (2014 and citations therein). Information for the United States at national and regional levels is summarized in the National Climate Assessment (Melillo et al. 2014 entire and citations therein; see Melillo et al. 2014, pp. 28-45 for an overview). Because observed and projected changes in climate at regional and local levels vary from global average conditions, rather than using global scale projections, we use "downscaled" projections when they are available and have been developed through appropriate scientific procedures, because such projections provide higher resolution information that is more relevant to spatial scales used for analyses of a given species and the conditions influencing it. (See Melillo et al. 2014, Appendix 3, pp. 760-763 for a discussion of climate modeling, including downscaling). In our analysis, we use our expert judgment to weigh the best scientific and commercial data available in our consideration of relevant aspects of climate change and related effects.

Climate change may result in an increase in the intensity or frequency of tropical storms and hurricanes in Florida. The Atlantic Multi-decadal Oscillation (AMO) influences rain patterns in Florida. We are currently in an AMO warm phase that is predicted to persist through 2020 (Miller 2010). The increased rainfall associated with both of these factors could reduce our ability to effectively use prescribed burning to manage habitat in optimal conditions for panthers and their prey. Increased rainfall could also reduce the amount of area suitable for panther denning, by increasing the area covered with standing water or the duration of inundation of seasonally wet areas.

It is difficult to estimate, with any degree of precision, which species will be affected by climate change or exactly how they will be affected. The Service will use Strategic Habitat Conservation planning, an adaptive science-driven process that begins with explicit trust resource population objectives, as the framework for adjusting our management strategies in response to climate change (Service 2006).

EFFECTS OF THE ACTION

Adverse effects

The proposed Project site contains panther habitat and is located within the geographic range of the panther. The timing of construction for the Project, relative to sensitive periods of the panther's lifecycle, is unknown. Panthers may be found in the Project vicinity year-round. The Project will be constructed in an ongoing, disruptive event, over a span of multiple years, and result in the permanent loss and alteration of the habitat on the Project site.

The land to be affected by the Project currently provides about 242.01 ac of habitat for the panther. This habitat is located in the Secondary Zone of the Focus Area (Kautz et al. 2006), approximately 7 mi northwest of Florida Panther National Wildlife Refuge. The majority of the land to be affected consists of improved pasture and barren disturbed lands that provide habitat for the panther and its prey. A variety of wildlife species that provide potential prey for the panther are known to occur within the action area. Potential prey include: white-tailed deer (*Odocoileus virginianus*), feral hog (*Sus scrofa*), wild turkey (*Meleagris gallopavo*), nine-banded armadillo (*Dasypus novemcinctus*), striped skunk (*Mephitis mephitis*), Eastern grey squirrel (*Sciurus carolinensis*), Eastern cottontail rabbit (*Sylivilagus floridanus*), and various species of small mammals, wading birds, amphibians, and reptiles.

The Consultant used the Service's *Panther Habitat Assessment Methodology* (2012) to evaluate the panther habitat lost due to the Project (Table 1). The proposed action will result in the loss of 242.01 ac of panther habitat in the *Panther Focus Area and Panther Consultation Area* (Service 2007). The loss of 242.01 ac of panther habitat on the Project site equates to 668.68 PHUs. The Habitat Assessment Methodology uses a base ratio to provide for the protection of sufficient acreage of primary zone equivalent lands for a population of 90 panthers from the acreage of primary zone equivalent non-urban lands at risk. Multiplying by the base ratio of 1.98 equals 1,324 PHUs necessary to offset the Project impacts. Each wetland mitigation credit from PIMBE provides 34.80 PHUs. The 0.47 credits proposed to be purchased would provide a total of 16 PHUs. The remaining 1,308 PHUs will be purchased at PPCB.

The proposed compensation plan is consistent with goal 1.1.1.2.3 in the *Panther Recovery Plan* (Service 2008) which recommends that habitat preservation and restoration be provided in situations where land use intensification cannot be avoided. The Applicant's compensation will provide habitat protection and restoration, to compensate for the function and value of the lost habitat. The Applicant has agreed not to begin construction on the Project until: (1) they provide the Service with a receipt (in the form of a letter or email) from PIMBE and PPCB stating at least 16 and 1,308 PHUs, respectively, have been acquired by the Applicant, and (2) the Corps and the Applicant have received an email or letter from the Service indicating we have received a receipt from PIMBE and PPCB.

Development projects may have a number of direct and indirect effects on the panther and panther habitat which include: (1) the permanent loss of habitat for panthers and their prey; (2) a reduction in the geographic distribution of habitat for the species; (3) disturbance of panthers due to construction activities; (4) increased potential for panther mortality due to motor vehicle collisions; (5) increased disturbance to panthers and their prey due to human activities; (6) an increase in the potential for intraspecific aggression among panthers due to reduction of the geographic distribution of habitat of the panther; and (7) an increase in the potential for panther-human interactions.

Land clearing

The Project will result in the loss of 242.01 ac of panther habitat in the Secondary Zone of the Focus Area. The land will be converted to land uses that aren't expected to be used by panthers or their prey. The habitat lost due to the Project may adversely affect the panther by decreasing the spatial extent of lands available to the panther and their prey. The Service anticipates any resident panthers with home ranges overlapping in the vicinity of the Project area will adjust the size and location of their ranges to account for this loss and disturbance, and the adjustment is anticipated to occur in concert with the Project construction phases. This loss represents 0.02 percent of the 1,202,699 ac of non-urban private lands available to the panther. The habitat value lost due to the Project will be offset by the habitat compensation proposed by the Applicant.

As discussed in the Status of the Species, panther mortalities resulting from attacks of con-specifics are known to occur in the panther population (*e.g.,* males may kill other rival males when defending a territory). Habitat loss may increase the potential for intraspecific aggression among panthers in the action area. The Project will result in the loss of 242.01 ac of panther habitat. According to the most current home range estimates of the panther (Lotz et al. 2005), this loss represents 0.83 percent of a female panther's average home range (29,059 ac) and 0.39 percent of a male panther's average home range (62,542 ac). Between 1984 and 2019, there have been 54 panther deaths due to intraspecific aggression documented within the action area (35 male, 18 female, and 1 unknown). The closest intraspecific aggression mortality occurred on December 29, 2018, 3.3 mi southwest of the Project site in the low-density residential area.

The risk to panthers from increases in intraspecific aggression as a result of the Project is difficult to quantify. However, the risk of increasing intraspecific competition is considered unlikely because of the reduced quality of habitat lost on the Project site. Therefore, the relative

change or increase in intraspecific aggression among young male panthers as a result of this Project is also likely discountable.

Construction activities

The timing of construction for the Project, relative to sensitive periods of the panther's lifecycle, is unknown. However, land clearing associated with the Project will be completed in a single phase at the start of development activities. There are no known den sites within the Project boundaries. Therefore, we find it is unlikely that the Project construction will result in direct panther mortality, but it may result in temporary disturbance to resident or dispersing panthers.

Increase in vehicle traffic

The Project would result in increased vehicular traffic in the Project vicinity. In evaluating a Project's potential to increase injuries and mortalities to panthers resulting from motor vehicle collisions, we consider the location of the Project in relation to surrounding native habitats, preserved lands, and wildlife corridors that are frequently used by the panther. We also consider the current configuration and traffic patterns of surrounding roadways and the projected increase and traffic patterns expected to result from the proposed action. We evaluate the habitats present on site, their importance in providing feeding needs for the panther and panther prey species, and if the site development would further restrict access to surrounding lands important to the panther and panther prey species.

The Service also used traffic data from the Florida Department of Transportation Data and Analytics Office (FDOT; 2018), the Collier County Traffic Operations Department (2019), and the Applicant's Traffic Impact Statement (TIS) to estimate the risk to panthers from the Project's projected increase in traffic. JMB Transportation Engineering, Inc. prepared a TIS that examined the effects of the Project's traffic on surrounding roads. Based on information in the TIS, the Project will generate 16,700 annual average daily trips (AADT) from the proposed development. An estimated 14,375 AADT would be generated from the residential units and 2,325 AADT would be generated from the commercial and office space. The traffic generated from the Project site will use existing roads, with the majority travelling west on Oil Well Road to Immokalee Road and then gradually dispersing (Figures 5 and 6).

The current risk to panthers from Project traffic was assessed by looking at the number of panthers killed in the past 5 years within the TIS study area. Within this study area, 12 panthers were killed on 4 road segments included in the TIS in the last 5 years (7 on Golden Gate Blvd, 3 on Immokalee Road between Collier Blvd and Oil Well Road, 1 on I-75 between Immokalee Road and Bonita Beach Road, and 1 on Collier Blvd between White Blvd and I-75). The current number of vehicle trips leading to panther deaths was calculated for these roads by multiplying the 5-year total daily trips (AADT times 1,825 days), and dividing this number by the number of panther vehicle-related deaths during the last 5 years. This calculation provides a baseline estimate of the number of vehicle trips that lead to a road kill based on the AADT and panther mortality data over a 5-year period. Assuming that the rate of panther road kills is proportional to the AADT, we estimated changes in panther road kills from the projected changes in AADT caused by the Project. This was done by multiplying current 5-year ratio of panther kills per

vehicle trips by the projected number of trips occurring in 5-years. The calculation for Golden Gate Blvd is shown below:

Step 1:

21,909 (Current AADT) X 1,825 (number of days in 5 years) ÷
7 (number of vehicle-related panther deaths on this road segment in last 5 years)
=
Death rate for this road segment is 1 death per 5,712,011 vehicle trips or 0.000000175

Step 2:

(15% X 14,375 residential traffic from Project) +
(5% X 2,325 commercial/office traffic from Project)
=
2,273 additional AADT on Golden Gate Blvd

Step 3:

0.000000175 (death rate) X 2,273 (additional AADT)
=
0.726 additional panther deaths on Golden Gate Blvd

Table 3 shows the current AADT, estimated AADT upon Project completion, the number of panther deaths in the last 5 years, and the estimated future deaths for each road segment. Using this calculation for all 4 road segments, we estimate that vehicle-related panther deaths due to the Project would increase from 12 to 13.4 individuals over the next 5 years. This is a net increase of 1.4 road kills over the current baseline. Since this estimation of take is for a whole animal, the estimated 1.4 net increase in panther road kills is rounded to 1 individual panther in the next 5 years. The relative change or increase in vehicle-related panther deaths as a result of this Project would be hard to detect and likely discountable. To help minimize panther road kills, the Applicant has agreed to install signage to inform construction workers and residents about the risk of panther-vehicle interactions in the vicinity, especially during evening hours.

Increase in human activities

The construction of the Project will increase human activities at the Project site. The disturbance resulting from human activities at the Project site could affect the movements of panthers and panther prey species. Consequently, panthers and panther prey species may be less likely to approach the Project site, or they may choose to avoid the Project corridor altogether. The additional human activity at the Project in conjunction with the loss of panther habitat resulting from the Project may change panther use patterns in the Project area, and panthers may avoid the Project area.

Interrelated and interdependent actions

An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation. Interrelated or interdependent actions are not expected to result from the Project.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation under section 7 of the Act.

The past and ongoing state and county actions (non-Federal) affecting panther habitat within the action area include: (1) State of Florida Development of Regional Impact Orders; (2) County Comprehensive Plan Amendments; (3) County Zoning Amendments; (4) County Planned Unit Developments; (5) Florida Department of Environment Protection Permits; and (6) SFWMD Environmental Resources Permits (ERPs). To estimate future non-Federal actions, the Service chose to identify and tabulate recent non-Federal actions and project this level of development as representative of future non-Federal actions.

The projections of the non-Federal actions (*i.e.,* cumulative effects) in the action area incorporates Florida Land Use Cover and Forms Classification System (FLUCCS) mapping to determine if a property may be exempt from the Federal Clean Water Act, section 404 wetland regulatory review by the Corps. To determine if a development project would likely be exempt from regulatory review, the Service identified the percentage of the property site that was classified as wetland habitat based on the FLUCCS 600 series (wetland), and the 411 (pine flatwoods) and 261 (fallow cropland) mapping unit classifications. Projects on properties with less than 5 percent wetlands were considered to be exempt from the Corps regulatory review, because impacts to wetlands could likely be avoided by project design.

Using the above selection criteria to review ERP application to the Florida Department of Environmental Protection and the SFWMD and local government building permit applications from 2014 through 2017, 282 projects in the action area affecting 4,371 ac of land were assumed exempt from Corps regulatory review. Therefore, the Service estimates that approximately 1,093 ac per year (4,371 ac ÷ 4 years = 1,093 ac/year) would be exempt from regulatory review in the action area. We find this value representative of future yearly development likely to occur in the action area. Many unforeseen factors can affect the rate of development in the action area. Therefore, the Service acknowledges that it is difficult to forecast the rate of development as it relates to non-federal actions in the action area with certainty. However, the Service believes this estimate provides the best approximation available of future non-Federal development actions reasonably certain to occur.

This level of development represents 3.8 percent of a female panther's average home range (29,059 ac) and 1.7 percent of a male panther's average home range (62,542 ac). Based on the

above analysis, we believe the loss of the habitat associated with these lands is insignificant in the short term, but may adversely impact the panther as development continues to occur.

CONCLUSION

After reviewing the current status of the Florida panther, the environmental baseline for the action area, the effects of the proposed Project, and the cumulative effects, it is the Service's biological opinion that the Project, as proposed, is not likely to jeopardize the continued existence of the panther. We have reached this conclusion because: (1) the loss of 242.01 ac of panther habitat is a small percentage of a male (0.39 percent) and female (0.83 percent) panther territory; (2) the estimated increase in traffic is not expected to significantly increase the potential for vehicle-related injuries or deaths on area roads; (3) the acreage being lost is at the edge of urbanized and rural areas causing little habitat fragmentation; (4) the small reduction in panther habitat from the Project is not expected to result in increased potential for intraspecific aggression among panthers in the action area; and (5) the loss of panther habitat due to the Project will be compensated for through the Applicant's purchase of 1,324 PHUs from PIMBE and PPCB.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of the agency action, is not considered to be prohibited taking under the Act provided such taking is in compliance with the terms and conditions of this incidental take statement.

The terms and conditions described below are nondiscretionary and must be undertaken by the Corps so they become binding conditions of any grant or permit issued to the Applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps 1) fails to assume and implement the terms and conditions or 2) fails to require the Applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Applicant must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CFR § 402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE ANTICIPATED

The Service anticipates incidental take of the panthers will be difficult to detect because monitoring panthers in their large territories is difficult, especially for un-collared panthers. Therefore, the Service will use 242.01 ac of habitat as a surrogate for the number of individuals taken. The incidental take is expected to be in the form of harm due to habitat loss, and distubance due to construction and post-construction activities. Although there is a potential for take to occur, we find that the level of incidental take is moderated by the purchase of 1,324 PHUs from PIMBE and PPCB.

The Service finds that no more than 242.01 ac of panther habitat at the Project site will be incidentally taken as a result of the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately reinitiate consultation with the Service.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined this level of anticipated take is not likely to result in jeopardy to the panther. Critical habitat has not been designated for the panther and will not be affected.

REASONABLE AND PRUDENT MEASURES

When providing an incidental take statement, the Service is required to give reasonable and prudent measures it considers necessary or appropriate to minimize the take, along with terms and conditions that must be complied with to implement the reasonable and prudent measures. The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize effects of the Project on the panther:

1. Implementation of the Project as proposed and outlined in the "Description of the Proposed Action" section of this Biological Opinion.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above and outline required reporting/monitoring requirements. The terms and conditions are non-discretionary.

1. The Applicant shall provide to the Service receipts documenting the purchase of at least 16 PHUs from PIMBE and 1,308 PHUs from PPCB within 60 days of issuance of permit SAJ-2018-01385 (SP-EMC) and prior to land clearing authorized by the Corps permit.

MONITORING AND REPORTING REQUIREMENTS

Pursuant to 50 CFR § 402.14(i)(3), the Corps must provide adequate monitoring and reporting to determine if the amount or extent of take is approached or exceeded. In order to monitor the impacts of incidental take, the Corps will require the Applicant to report the progress of the final developed acreage, and its impacts on the panther to the Service as specified in the Incidental Take Statement.

DISPOSITION OF DEAD OR INJURED SPECIMENS

Upon locating a dead, injured, or sick threatened or endangered species, initial notification must be made to the nearest Service Law Enforcement Office: 20501 Independence Blvd., Groveland, Florida 34736; 352-429-1037. Additional notification should be made to the FWC; South Region; 8535 Northlake Blvd; West Palm Beach, Florida; 33412; 561-625-5122 or Wildlife Alert Hotline 1-888-404-3922, and the Service's South Florida Ecological Service's Office (1339 20th Street, Vero Beach, Florida 32960-3559; 772-562-3909). Care should be taken in handling sick or injured specimens to ensure effective treatment and in the handling of dead specimens to preserve biological material in the best possible state for later analysis as to the cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

CONSERVATION RECOMMENDATIONS

Section 7 (a)(l) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service has no conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the Project consultation request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Corps involvement or control over the action has been retained (or is authorized by law) and if: 1) the amount or extent of incidental take is exceeded (242.01 ac of panther habitat); 2) new information reveals effects of the Corps action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the Corps action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease until reinitiation.

Thank you for your cooperation and effort in protecting federally listed species and fish and wildlife resources. If you have any questions regarding this Project, please contact Heather Hitt by email at Heather_Hitt@fws.gov, or by phone at 772-469-4267.

Sincerely yours,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services Office

Enclosures

cc: electronic only
Corps, Fort Myers, Florida (Erin Campbell)
DexBender Environmental Consulting (Craig Smith)
FWC, Tallahassee, Florida (FWC-CPS)
Service, Vero Beach, Florida (David Shindle)

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Table 1: Panther habitat unit (PHU) calculations for the proposed Hyde Park project in Collier County, FL.

PROJECT

Habitat Type	*Assigned value*	Habitat types of land to be developed: Primary/d Zone	Secondary Zone	Other Zone	Primary Equivalent Habitat Units	Habitat types of land after development: Primary/d Zone	Secondary Zone	Other Zone	Primary Equivalent Habitat Units
Pine forest	9.5				0				0
Hardwood-Pine	9.3				0				0
Cypress swamp	9.2				0				0
Hardwood swamp	9.2				0				0
Hardwood Forest	9				0				0
Dry prairie	6.3				0				0
Unimproved pasture	5.7				0				0
Shrub swamp/brush	5.5				0				0
Improved pasture	5.2		110.49		396				0
Cropland	4.8				0				0
Orchards/groves	4.7				0				0
Marsh/ wet prairie	4.7				0				0
Xeric scrub	4.5				0				0
Exotic/Nuisance plants	3		1.89		4				0
Coastal wetlands	3				0				0
Barren/Disturbed lands	3		129.63		268				0
Water	0		400.52		0				0
Urban	0				0				0
Reservoirs*					0				0
STA*					0				0
TOTAL		0.00	642.53	0.00	668.68	0.00	0.00	0.00	0.00

CONTINUE

CLEAR SHEET

COMPENSATION TO OFF-SET
1324
Habitat Units

Table 2: Yearly Florida panther population estimates and annual number of mortalities**.**

Year	Total	Mortality	Net
2000	62	13	49
2001	78	11	67
2002	80	14	66
2003	87	24	63
2004	78	20	58
2005	82	12	70
2006	97	19	78
2007	117	25	92
2008	104	23	81
2009	113	24	89
2010	115	24	91
2011	111	24	87
2012	123	29	94
2013	133	29	104
2014	138	24	114
2015	140	41	99
2016	Not available	43	Not available
2017	120-230*	30	90-200

*2016 began a transition in the way the Florida panther population was estimated. In February 2017, FWC provided a minimum and maximum population estimate.

Table 3: Annual Average Daily Trips (AADT) and number of vehicle-related panther deaths in the last 5 years for road segments included in the Traffic Impact Study. These data were used to calculate the number of vehicle-related panther deaths due to the proposed Hyde Park project in Collier County, FL.

Road Segment	Current AADT	Project AADT*	Total Future AADT	Panther Deaths Last 5 yrs	Additional Panther Deaths Over the Next 5 yrs
Golden Gate Blvd	21,909	2,273 (15% of residential traffic, 5% of com/office traffic)	24,182	7	0.726
Immokalee Road (east of Collier Blvd)	33,777	6,701 (45% of residential traffic, 10% of com/office traffic)	40,478	3	0.595
I-75 between Bonita Beach Road and Immokalee Road	102,791	2,156 (15% of residential traffic, 0% of com/office traffic)	104,947	1	0.021
Collier Blvd (south of White Blvd)	23,733	1,869 (13% of residential traffic, 0% of com/office traffic)	25,642	1	0.078
Total Panther Deaths				12	1

***** See Figures 5 and 6 for percentages of residential and commercial traffic distribution from the Project site.

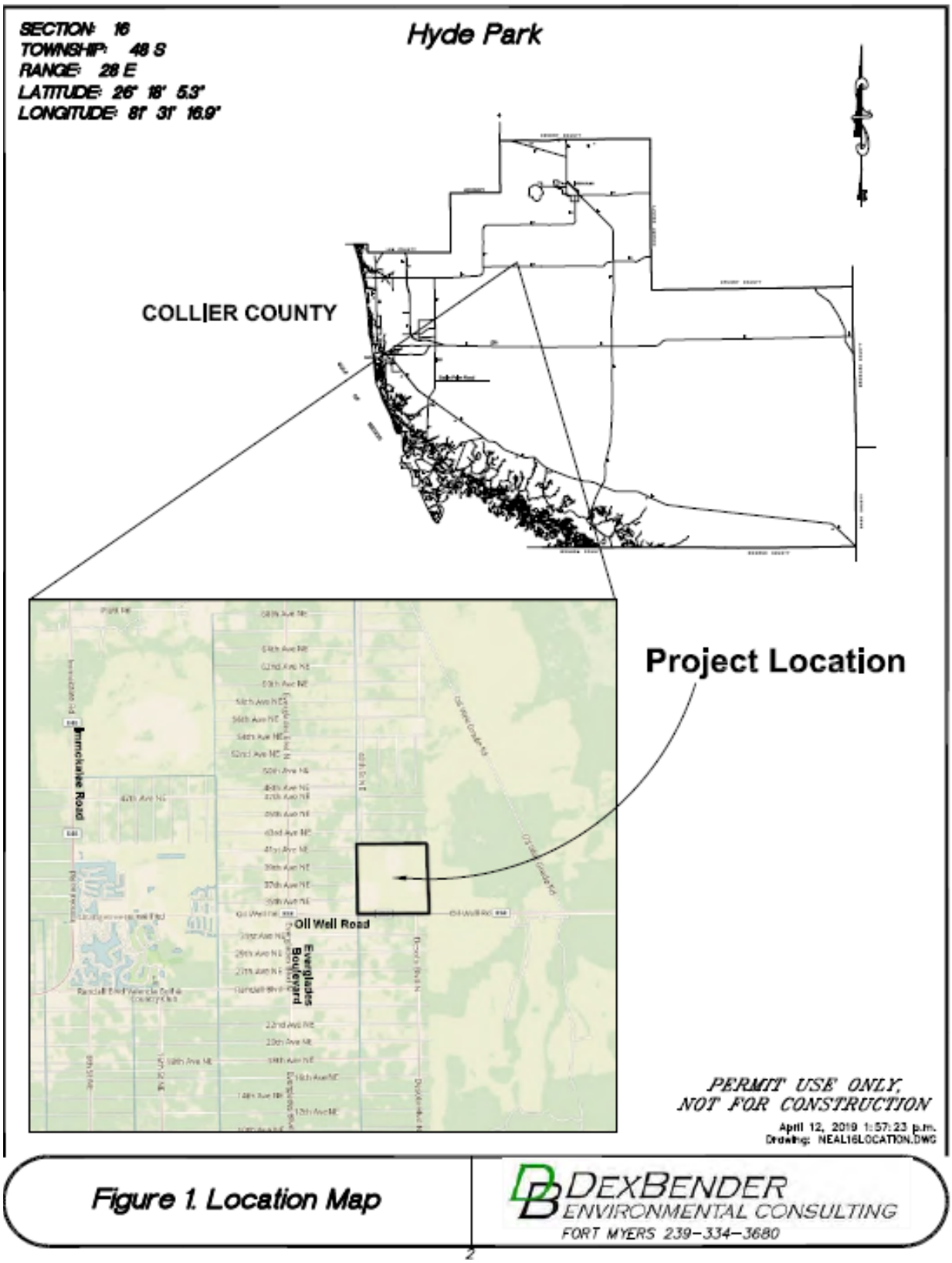

Figure 1: Proposed site location of Hyde Park project in Collier County, Florida.

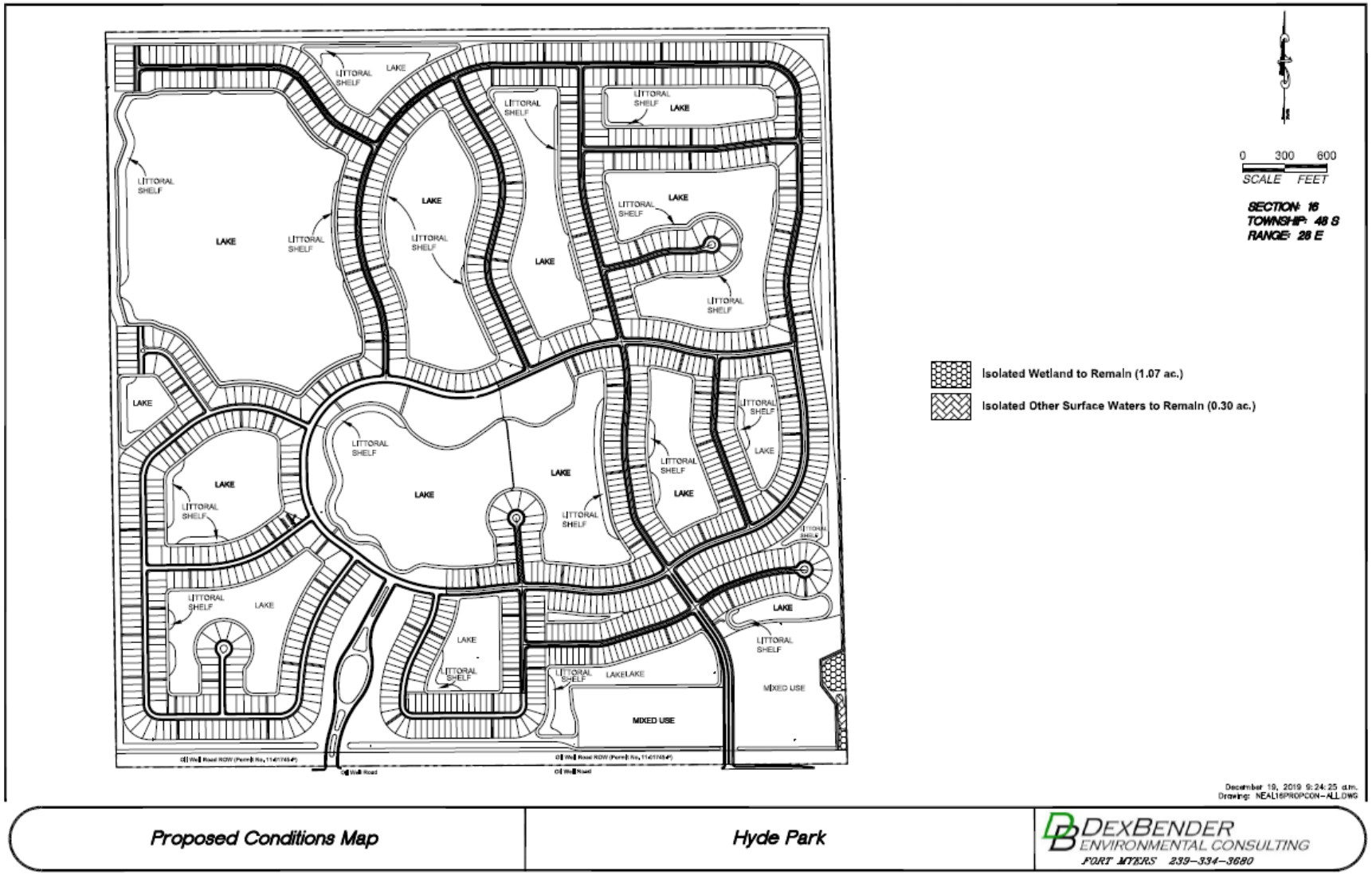

Figure 2: Proposed site plan for Hyde Park project in Collier County, FL.

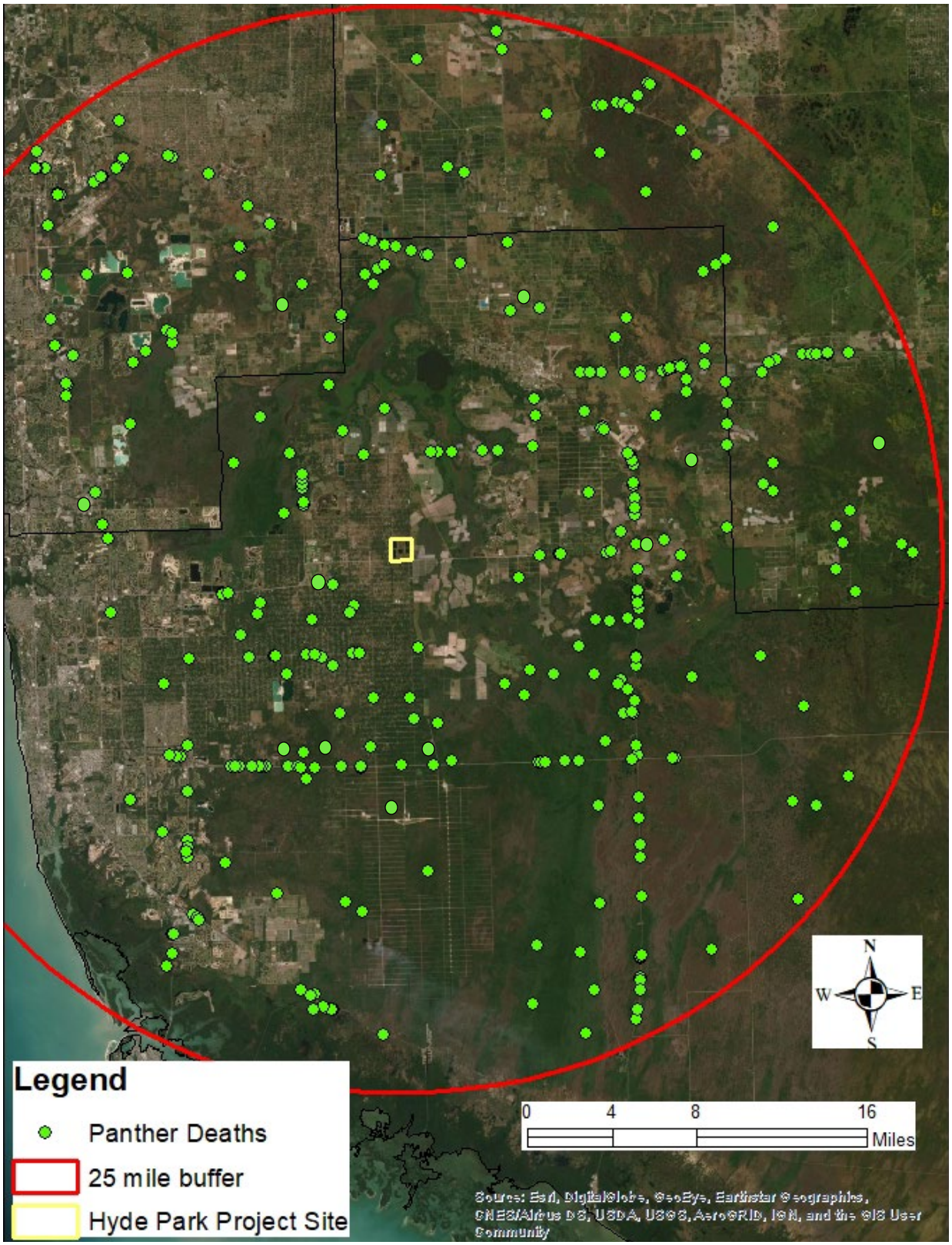

Figure 3: Panther mortalities within the 25-mile action area for the proposed Hyde Park project in Collier County, FL.

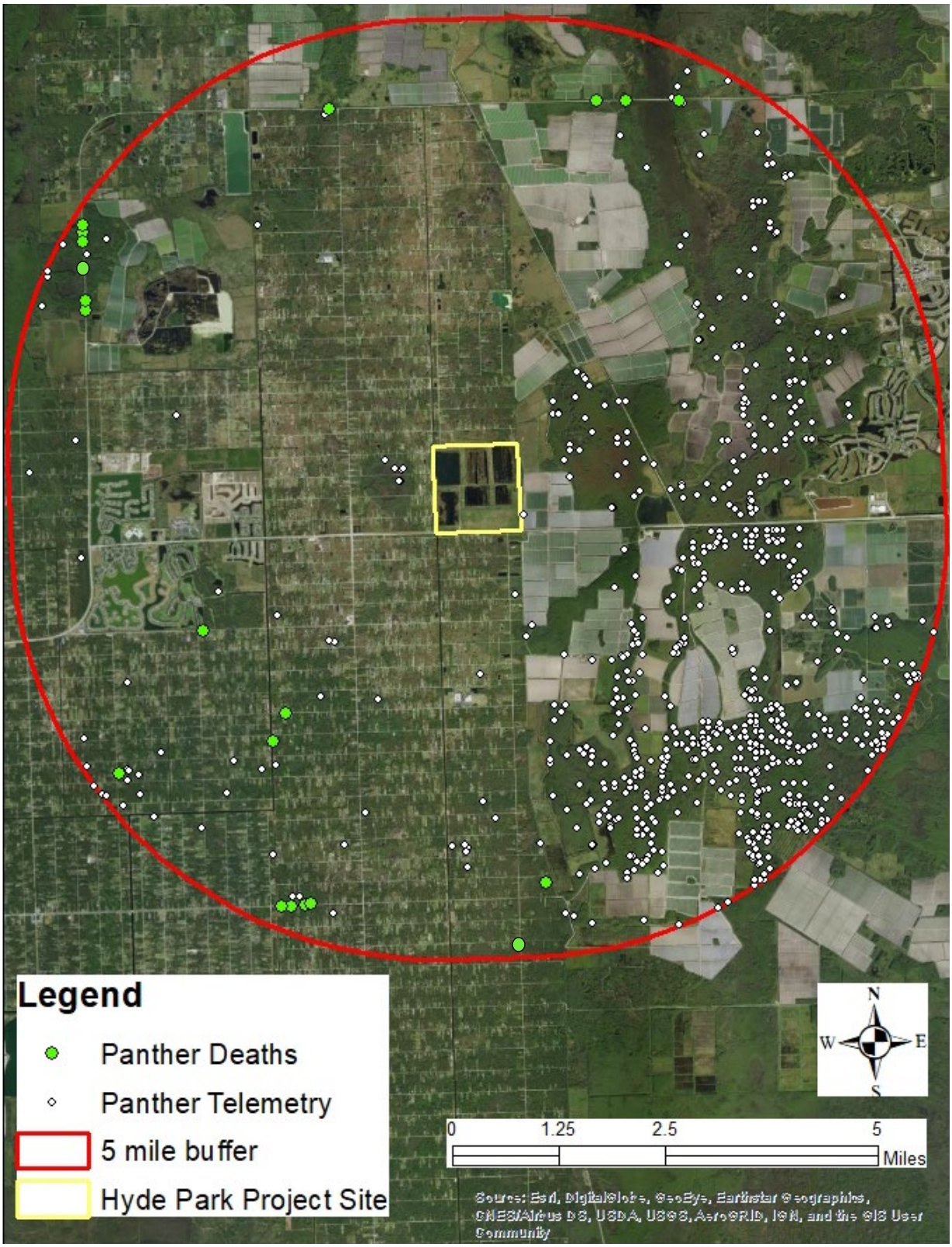

Figure 4: Panther telemetry and deaths within 5 miles of proposed Hyde Park project in Collier County, FL.

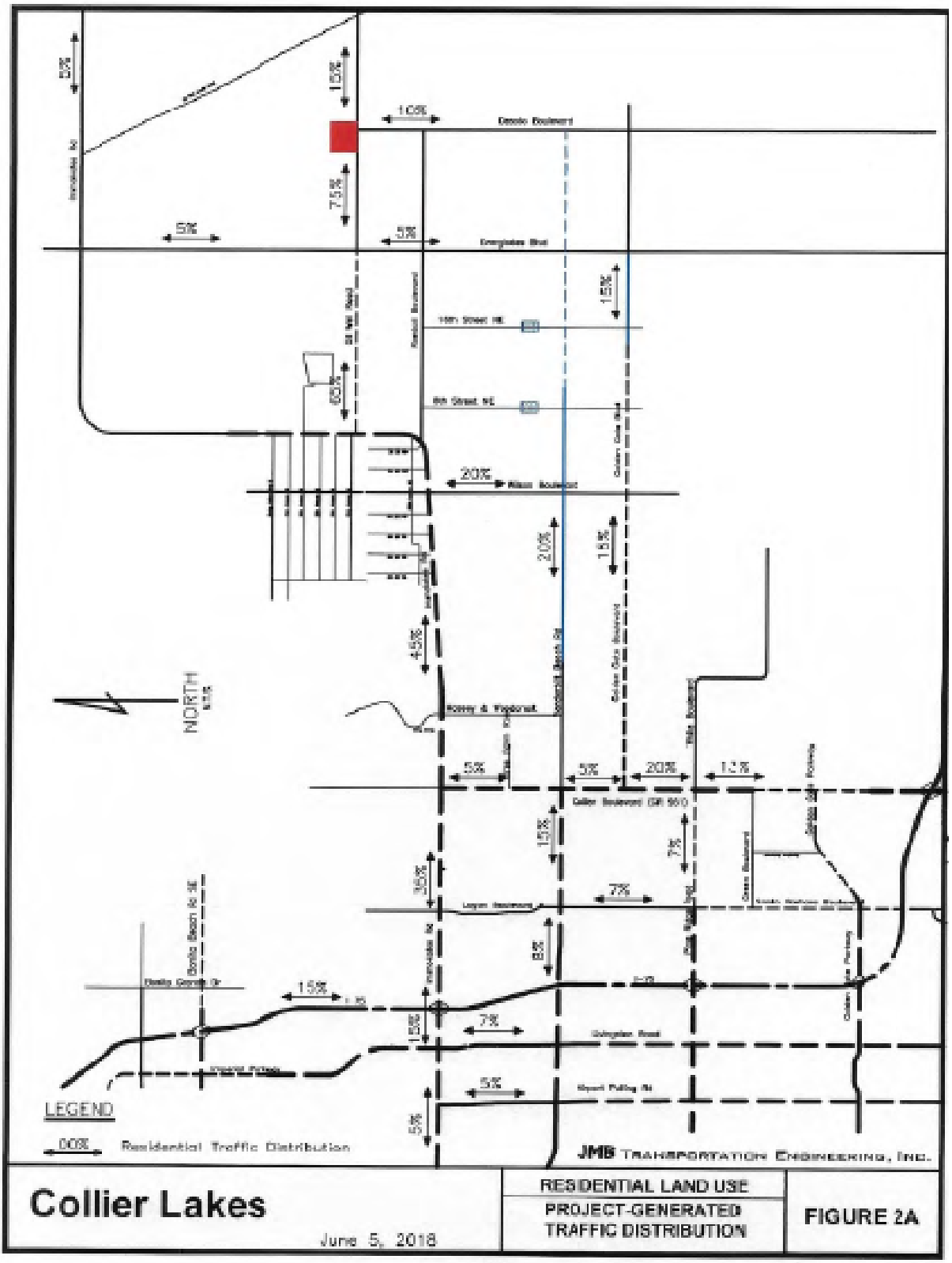

Figure 5: Residential traffic distribution from the proposed Hyde Park project in Collier County, FL. Total residential traffic was estimated to be 14,375 average daily trips.

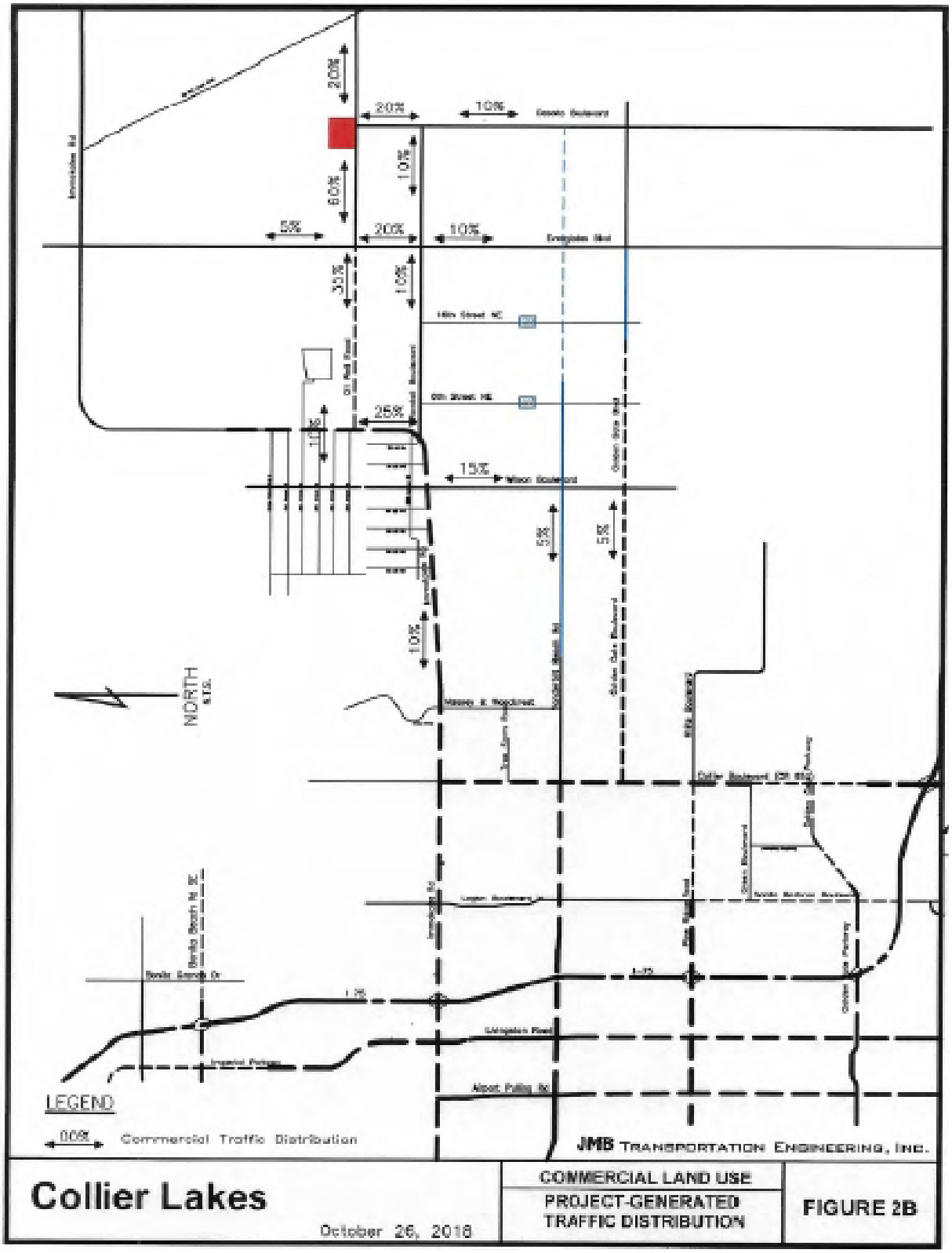

Figure 6: Commercial/office space traffic distribution from the proposed Hyde Park project in Collier County, FL. Total commercial/office space traffic was estimated to be 2,325 AADT.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

August 31, 2018

Jason A. Kirk, Colonel
District Commander
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Service Consultation Code: 41420-2006-F-1032 R001
Date Received: January 5, 2017
Consultation Initiation Date: June 8, 2018
Applicants: Ave Maria Development, LLLP
Project: Ave Maria University DRI
Corps Permit Application Number: SAJ-2005-03698 (SP-BEM)
County: Collier

Dear Colonel Kirk:

The U.S. Fish and Wildlife Service (Service) has received the U.S. Army Corps of Engineers' (Corps) request to reinitiate consultation dated January 5, 2016, for the reauthorization of permit SAJ-2005-03698 (SP-BEM) to Ave Maria Development, LLLP (Applicant), to complete construction of the Ave Maria University Development of Regional Impact (DRI) (Project). This document transmits the Service's biological opinion based on our review of the proposed Project located in Collier County, Florida, and its effects on the endangered Florida panther (*Puma concolor coryi*; panther), endangered Florida bonneted bat (*Eumops floridanus*; FBB); the threatened Audubon's crested caracara (*Polyborus plancus audubonii*; caracara), and the threatened eastern indigo snake (*Drymarchon corais couperi*; indigo snake). The Service previously issued a biological opinion (4-1-04-PL-6866, dated February 25, 2005), and three amended biological opinions (dated March 16, 2005; June 29, 2005; and April 4, 2006). Project construction had been divided into two phases. Phase-1 was described as the initial development of 683.4 acres (ac) under Corps permit SAJ-2003-9416, while Phase-2 was for the development of the Project's remaining 4,343.5 ac under Corps permit SAJ-2005-03698. Combined, these permits authorized the discharge of dredge and fill material into waters of the United States for the entire 5,027-ac Project. The Service determined at that time that the proposed activities of both Phase-1 and Phase-2 were satisfied by the limits assumed in the biological opinion and, subject to the revisions of the biological opinion, applied to both Corps permits SAJ-2003-09416 and SAJ-2005-3698. Consequent to a change in Service record tracking protocols in 2006, the Service Consultation Code for the Project was changed to 41420-2006-F-1032. Biological opinion (4-1-04-PL-6866) concluded that the anticipated level of incidental take was not likely to result in jeopardy to the panther and caracara. It additionally concurred with the Corp's

determinations of "may affect, but not likely to adversely affect" for the endangered red-cockaded woodpecker (*Picoides borealis;* RCW), the threatened wood stork (*Mycteria americana*), and indigo snake. The Corps requested reinitiation of consultation because the Florida bonneted bat (*Eumops floridanus*; FBB) was listed as federally endangered after consultation for the permit was completed. The Corps permit expired before the activities authorized by permit SAJ-2005-3698 and the associated biological opinion were completed, prompting new analysis of Project effects on listed species. This document transmits the Service's Biological Opinion based on our review of the proposed Project located in Collier County, Florida, and its effects on the FBB, panther, indigo snake, and caracara; and reiterates previous Service concurrences with the Corps' determinations of "may affect, but is not likely to adversely affect" for RCW and wood stork. All reasonable and prudent measures, and the terms and conditions in the previous biological opinions for the Project remain valid and applicable. This document is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 et seq.).

This Biological Opinion is based on information provided in the Corps' January 5, 2017, and February 10, 2016, consultation request letters; a FBB roost survey report from Collier Environmental Services (Consultant); correspondence, telephone conversations, emails, and other sources of information. As of June 8, 2018, the Service has received all the Project information necessary for initiation of formal consultation on the FBB, as required in the regulations governing interagency consultations (50 CFR § 402.14). A complete record of this consultation is on file at the South Florida Ecological Services Office (SFESO) in Vero Beach, Florida.

Consultation history

On February 22, 2005, the Service issued a biological opinion that concluded that Project actions were not likely to result in jeopardy to panther or caracara, and concurred with Corps' determinations of "may affect, not likely to adversely affect" for the indigo snake, wood stork, and RCW. The biological opinion was provided specifically to support SAJ-2003-09416 (NW-MAE); however, because information provided by the Applicant indicated that a maximum of 5,995 ac could be adversely affected upon Project build-out, the scope of the biological opinion included all impacts associated with the entire Project.

On March 16, 2005, the Service issued a revised biological opinion to correct errors and omissions in literature cited in the text, to clarify references cited in the document, and to correct errors in some of the tables referenced in the text. The corrections and clarifications did not change either the species compensation or the result of the prior affect determinations.

On June 29, 2005, the Service issued a revised biological opinion to provide the Service's assessment of additional information received from the Applicant and the Florida Fish and Wildlife Conservation Commission (FWC) regarding the status of the adjacent Camp Keais Strand as an important, documented panther movement corridor between resident and dispersing panthers in the Florida Panther National Wildlife Refuge and resident and dispersing panthers in the Corkscrew Regional Ecosystem Watershed (CREW) conservation lands. This revision also

addressed minor changes to the Project boundary, panther compensation lands, and established a 601-ac caracara compensation parcel.

On April 4, 2006, the Service issued a letter revising the panther compensation acreage, consistent with the results of the Service's habitat assessment methodology. The revision did not change the prior affect determinations, nor did it change prior caracara conservation measures.

On August 16, 2006, Corps permit SAJ-2005-03698 (IP-MAE) was issued for Phase-2 of the Project.

On January 28, 2016, a pre-application meeting for the Project was held at the Service's Vero Beach office. Issues discussed included current Project status, the need to federally re-authorize the unconstructed portion of the Project, and the anticipated scope for that consultation, and appropriate FBB survey methodology needed to support the pending consultation.

On February 11, 2016, the Service received a letter from the Corps requesting initiation of formal consultation for the Del Webb Crossing project, a bridge crossing within the Project site (also under Corps permit SAJ-2005-03698). The Corps provided determinations of "may affect, and is likely to adversely affect" for panther and FBB, and determinations of "may affect, but is not likely to adversely affect" the wood stork, RCW, caracara, Everglade snail kite, and indigo snake. Included was an Environmental Supplement prepared by the Applicants' consultant, Turner, Hall and Associates, Inc.

By letter to the Service dated January 5, 2017, the Corps requested initiation of formal consultation for the FBB. The letter requested Service concurrence with the previous determinations of biological opinion 4-1-04-PL-6866-R3, which had concluded that the "level of incidental take is not likely to result in jeopardy to the species" for the caracara and panther, and had concurred with the Corps' determinations of "may affect, but is not likely to adversely affect" for the indigo snake, wood stork, and RCW. The letter also provided results of the Consultant's May 2016 FBB acoustic roost survey.

Via email to the Corps, dated January 31, 2017, the Service requested additional information regarding Del Webb Crossing (SAJ-2005-03698; 2016-TA-0186) application.

Via email to the Service dated February 24, 2018, the Corps provided a copy of permit SAJ-2005-3698 (IP-MAE), issued on August 16, 2006, to Ave Maria Development, LLLP.

Via email to the Service, dated March 15, 2017, the Applicant's consultant submitted Geographic Information System (GIS) shape files of the off-site Ave Maria caracara and panther conservation areas.

On June 29, 2017, a meeting attended by the Service, the Applicant's representative, and the Consultant was held at the Service's Vero Beach office. The Service indicated that after coordination with the Corps, the Service would combine the Del Webb Crossing and the Ave Maria re-authorization in the same consultation. Meeting topics included discussion of Project

status and the consultation process for each species. Required tasks identified included the need to recalculate panther habitat impacts based on the Services 2009 updated habitat scoring methodology, a quantitative assessment of potential indigo snake territories, additional surveys of potential roost sites where FBB call sequences were detected within 1.5 hours of sunset, and developing protections for potential on-site nesting by the caracara.

On July 5, 2017, at the request of the Service, the Consultant submitted FBB call recordings of the May 2016 FBB roost survey in zero-crossing format.

Via email to the Service dated July 6, 2017, the Consultant submitted an e-mail (recapping a prior phone conversation) clarifying information required for consultation.

Via email to the Service and the Corps, dated August 9, 2017, the Consultant provided a response to the Service's January 31, 2017, request to the Corps for additional information concerning the Dell Webb Crossing component.

Via email to the Service and the Corps, dated August 22, 2017, the Consultant provided updated Project mapping and information indicating the amount of construction that was completed before expiration of permit SAJ-2005-3698.

Via email exchange between the Service and the Consultant, dated August 28, 2017, the Service provided current interpretation of habitat types suitable for indigo snake.

On October 19, 2017, a meeting attended by the Service, the Applicant's representative, and the Consultant was held at the Service's Vero Beach office. Topics included generating a new effects analysis for panther, and requirements and financial assurance requirements for the proposed 128.5-ac conservation easement addition to the off-site mitigation area.

In a series of emails between the Service and the Consultant from December 12, 2017, to December 20, 2017, protocol for caracara surveys for the 2018 nesting season were established.

On February 23, 2018, a teleconference meeting between the Services, the Applicant's representative, and the Consultant for the Project was held. Discussion included the need to quantitatively link panther mortality to the traffic study included in the 2005 Ave Maria DRI biological opinion, amend details of the Del Webb Crossing traffic calming design, and amend the Cumulative Effects section to reference data source and author.

Via email dated February 28, 2018, the Consultant provided the Service and the Corps with amended design plans for traffic calming for the Del Webb Crossing.

Via email of March 2, 2018, the Consultant provided the Service with a draft biological opinion for the Project.

Via email of March 30, 2018, the Service notified the Consultant that a new traffic analysis using updated methodology would be needed for an affects analysis of Project-generated traffic and panther mortality.

Via email of April 4, 2018, the Consultant provided the Service with an estimate that as of December 2016, the Ave Maria development was 44 percent complete.

Via email of April 9, 2018, the Service notified the Consultant that calculations for panther habitat compensation in the draft biological opinion had utilized outdated methodology and needed revision.

Via email dated April 12, 2018, the Consultant provided the Service with amended calculations for panther habitat compensation using current methodology, for which the Applicant proposed increasing the size of the conservation easement addition from 128.5 ac to 180.3 ac.

During an April 20, 2018, teleconference, the Service, the Consultant, and the Applicant's representative discussed the need to conduct a new affects analysis using updated methodology for Project-generated traffic and panther mortality.

During a May 9, 2018, teleconference, the Service, Consultant, and the Applicant's representative discussed in detail the features of the new methodology for assessing traffic effects on panther mortality.

Via email dated June 8, 2018, the Applicant's Consultant provided responses to the Service's questions and comments; provided an Off-site Preserve Expansion Management Plan; provided notification to that the Applicant no longer plans to construct the Del Webb Crossing and wishes to withdraw this Project component from the consultation; provided updated calculations reflecting PHU and related reduction in SSA6 preserve expansion from 180.3 ac to 179.3 ac due to removal of the Del Webb Crossing component; and provided a new estimate that the Ave Maria development is estimated to be 30 percent complete through 2017 and will require 20 years to achieve buildout.

In a July 17, 2018, meeting at the Service's Vero Beach office, the Service, Consultant, and Applicant's representative discussed the status of panther mortality calculations. The Service determined that correlating increases in traffic and panther mortality over the entire 20 construction schedule were subject to too much variability and would not be feasible.

BIOLOGICAL OPINION

This Biological Opinion provides the Service's opinion as to whether the proposed Project is likely to jeopardize the continued existence of the indigo snake, panther, and FBB. There is no designated critical habitat for the indigo snake, panther, or the FBB; therefore, this Biological Opinion will not address destruction or adverse modification of critical habitat.

ANALYTICAL FRAMEWORK FOR THE JEOPARDY DETERMINATIONS

Jeopardy determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, find, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this Biological Opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which determine the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) the Cumulative Effects, which evaluate the effects of future, non-federal activities in the Action Area on the species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the species, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

DESCRIPTION OF PROPOSED ACTION

The purpose of the proposed Project is to develop the 2,826.5-ac portion of the University and Town of Ave Maria that remain unconstructed when the prior Corps authorization under SAJ-2005-03698 expired. Project construction would complete approximately 70 percent of the originally planned development, which included 11,000 residential units, a 6,000 student university, commercial development, medical and assisted living facilities, schools, and recreational and community facilities (Table 1). The Project site is located in the Big Cypress Swamp watershed, approximately 5 miles (mi) south of the community of Immokalee, bordered by CR 858 (Oil Well Road) to the south, Camp Keais Road to the east, and Camp Keais Strand to the west in Sections 4 through 9 and 16 through 18, Township 47 South, Range 29 East, Collier County, Florida (latitude 20.33417, longitude -81.43639) (Figures 1, 2).

The Corps permit expired before the activities authorized by the Phase-2 Ave Maria permit and the associated biological opinion were completed. The Applicant had completed 1.80 ac of the 23.13 ac of previously-authorized wetland impacts, 4.9 ac of the 9.0 ac of ditch/canal impacts, 99.1 ac of 103.2 ac of on-site wetland mitigation, 2,094.7 ac of impacts to non-wetland areas, and had established 6,715 ac of off-site wildlife compensation areas to off-set impacts to panther and caracara habitat. To allow full construction of the Project, the Applicant is requesting that

Corps permit SAJ-2005-03698 be re-authorized for the un-executed balance of the previously authorized impacts. Figure 2 illustrates the limits of the Project that have been completed and those that are proposed to be re-authorized. Figures 3a-3d illustrate the site plan for the previously authorized and currently proposed Project elements.

The 2,826.5-ac Project site consists of 2,340.2 ac of croplands, 308.3 ac of pasture and grasslands, 44.3 ac of dry prairie, 28.2 ac of shrubs and brush, 14.1 ac of pine forest, 7.2 ac of pine/hardwood forest, 6.1 ac of cypress, 20.7 ac of marsh, 9.4 ac of agricultural drainages, and 48.0 ac of exotic vegetation (Figure 4). Included in that acreage are 25.43 ac of federally-jurisdictional wetlands and surface waters including wet prairie, cypress, Brazilian pepper, and canal.

A majority (99.1 ac of 103.2 ac) of the previously authorized on-site wetland mitigation has been completed. The remaining 4.1 ac of that mitigation are being re-proposed as previously designed under the Corps re-authorization action. The Applicant seeks to re-authorize the discharge of 91,600 cubic yards (CY) of fill into 18.93 ac of wetlands and to excavate 37,150 CY of fill material from 2.40 ac of wetlands. Also associated with the re-authorization are 1.20 ac of fill (6,760 CY) proposed in non-wetland surface waters and 2.9 ac of excavation (49,000 CY) from non-wetland surface waters.

On-site clearing and earthwork (vegetation removal, grading, filling, excavation, wetland restoration, and installation of infrastructure such as utilities and roads), and construction of residential, commercial and institutional buildings, will be completed in one or more phases over the course of approximately 20 years. The wetlands proposed to be impacted as part of the re-authorization range from exotic monoculture to mature cypress. These wetland impacts have been quantified and the appropriate mitigation designed per the prior federal authorization. The re-authorization is carrying the prior assessment and mitigation plan forward as one of the two Corps actions.

Minimization and conservation measures

The proposed action was previously authorized by Corps permit SAJ-2005-03698 and Service Log No. 4-1-04-PL-6866-R3. All conservation measures associated with that authorization, with the exception of the 4.1 ac of outstanding on-site wetland mitigation, were implemented prior to that authorization expiring. Therefore, other than carrying the 4.1 ac of outstanding wetland mitigation forward to the re-authorization, the following conservation measures are associated with: (1) new species listing for the FBB; (2) new assessment protocol for the indigo snake; and (3) revised assessment criteria for the panther. Conservation measures for caracara are precautionary in nature to minimize potential adverse effects in advance of construction.

Florida panther

The Project is located within the Service's Primary and Secondary Zones. A habitat assessment conducted for the 2006 biological opinion (Log No. 4-1-04-PL-6866-R3, dated April 4, 2006) determined that preservation of 45,229.3 panther habitat units (PHUs) in the Primary Zone would compensate for the loss of panther habitat from activities associated with

the entire Ave Maria DRI development. As a result, 45,419 PHUs (6,114 ac) were preserved via conservation easement of lands within Stewardship Sending Areas (SSAs) 1, 2, 3, 4, and 6, all located in regional proximity to Ave Maria (Figures 5 and 6a, 6b, 6c).

Subsequent to the original authorization, the Service's Habitat Assessment Methodology was updated in 2009 (Service 2012). Therefore, the Consultant recalculated PHU compensation recommendations using: (1) the Service's 2003 panther habitat values (used in the 2006 biological opinion) for habitat lost due to activities completed under the previous authorization (Table 2a); and (2) the Service's current (2009) panther habitat scoring for habitat loss due to proposed Project activities (Table 3a). The PHUs attributed as compensation for completed activities were partitioned from the panther habitat matrix for existing conservation lands within SSAs 1, 2, 3, 4, and 6 (Table 2b), and this acreage considered no longer available to compensate for proposed actions. Using the 2009 panther habitat values, the Consultant then calculated the number of PHUs associated with the remaining acreage within the existing conservation easement to determine net change in value. Using the 2003 habitat scoring (applicable at the time of the original authorization), the Consultant quantified that 20,422.7 PHUs would off-set the 2,200.5 ac of habitat lost to completed activities (Table 2a). Therefore, 20,422.9 PHUs associated with 779.1 ac of grassland/pasture, 1,614.9 ac of freshwater marsh in SSA1, 2, 3, 4, and 6 conservation easements, and 43.5 ac of hardwood forest in SSAs 3 and 4 were partitioned to off-set the completed activities (Table 2b).

The Consultant further quantified that proposed Project activities would result in the loss of 1,185.7 ac of Primary Zone habitat and 1,640.8 ac of Secondary Zone habitat (Table 3a). Using current panther habitat scoring, this represents a loss of 5,667.8 PHUs of Primary Zone habitat and 8,100.9 PHUs of Secondary Zone habitat (Table 3a). The recommended compensation to off-set the loss of Primary Zone habitat represents the 5,667.8 PHUs of lost habitat multiplied by the 2.5 base ratio multiplied by the Primary Zone landscape multiplier (1.0) to yield a total of 14,169.5 PHUs. The recommended compensation to off-set the loss of Secondary Zone habitat represents the 8,100.9 PHUs of lost habitat multiplied by the 2.5 base ratio multiplied by the Secondary Zone landscape multiplier (0.69) to yield a total of 13,974.5 PHUs. In total, 28,143.5 PHUs of compensation is recommended to off-set panther habitat loss associated with the proposed Project (Table 3a).

Using 2009 habitat scoring, the Consultant quantified that, after excluding acreage partitioned for completed activities, a total of 26,522.4 PHUs (3,673.1 ac) remained available within the encumbered conservation easements of SSA1, 2, 3, 4, and 6 to apply toward compensation for habitat loss from proposed Project activities. This represents a deficit of 1,621.1 PHUs (28,143.5 - 26,522.4 = 1,621.1). The Applicant proposes expanding the existing 1,477-ac easement within SSA6 by 179.3 ac, which will provide an additional 1,623.2 PHUs of compensation (Table 3b), bringing the total offered compensation to 28,145.6 PHUs (Table 3c). The expansion falls within SSA6, is located adjacent to, and to the west of, the existing SSA6 conservation easement (Figures 5 and 6c).

Within 60 days of Corps permit issuance, the amendment to the conservation easement for the 179.3-ac portion of SSA6 shall be recorded. A certified copy of the recorded easement shall be forwarded to the Corps within 60 days of recording.

The Applicant previously mitigated for the effects of Project traffic by coordinating with Collier County to install wildlife crossings and fencing near the Project site.

Florida bonneted bat

The Project's development footprint of 2,826.5 ac is wholly contained within the FBB consultation area. All habitat types on the Project site are considered suitable for FBB foraging, but only the 24.5 ac of mature pine, cypress and oak forests could contain potential roost structures (*e.g.*, cavities in trees). The Consultant's initial roost survey examined 12 forested areas and identified a total of 9 trees in 6 areas that contained cavities suitable for FBB. All of these were examined by cavity-directed acoustic methodology in accordance with Service protocols. Over a total of 26 nights, 57 acoustic signatures consistent with FBB were detected in the vicinity of 7 of the trees surveyed, 3 of which were recorded within 1.5 hours of sunset, indicating that FBBs likely roost at these locations.

The Applicant has agreed to implement conservation measures or Project commitments in coordination with the Service to minimize adverse effects to the FBB as a result of construction activities associated with the Project. These Project commitments specifically include the inspection of any potential roosts prior to removal to determine if any undocumented FBB roosts are present. These inspections should occur as near to the removal date as possible, but no more than 30 days prior to implementing any work in each development and construction phase because FBBs are known to move between alternate roosts or establish new roosts (Ober et al. 2017), and previously inspected cavities found to be unoccupied could be occupied when construction begins months later. All cavity trees are to be examined by a professional environmental consultant with expertise in detecting FBB roost sites. Cavity peeping would be performed using a video probe (peeper) and observing the cavity contents, including top and bottom portions of the cavity. If cavity peeping is not possible for any cavity, the Applicant shall conduct the standard 4-day acoustic survey of such trees in accordance with FWS guidelines to confirm presence/absence of roosting FBBs. The Applicant will provide a written report of the survey dates, personnel, equipment, and survey results to the U.S. Fish and Wildlife Service, 1339 20th Street, Vero Beach, FL 32960, verobeach@fws.gov. In the event that a FBB roost is detected, the Applicant will immediately re-consult with the Corps and the Service, and cease construction within 250 feet of the roost until an appropriate buffer or other conservation effort can be determined.

Additionally, 3,855.5 ac of FBB habitat will be preserved within the SSA1, 2, 3, 4, and 6 conservation easements and will be managed and maintained in perpetuity. It is unknown if any surveys for FBB have been conducted in the SSAs, but FBB detections have occurred near each of the SSAs and a roost was identified within 5 mi of SSA6 in FPNWR. Therefore, it is likely that these preserve areas could provide foraging habitat and potentially roosting opportunities for the FBB.

Eastern indigo snake

The Applicant has agreed to implement the Service's *Standard Protection Measures for the Eastern Indigo Snake* (SPM) (Service 2013a) to minimize potential harm, or harassment, to any

resident snakes during land clearing and construction activities. The 3,855.5 ac of lands preserved within the SSA1, 2, 3, 4, and 6 conservation easements could provide habitat for indigo snakes, including 2,545.3 ac of upland habitats potentially suitable for nesting snakes plus an additional 1,310.2 ac of wetland habitats that are suitable for foraging snakes.

Caracara

Mitigation for the taking of one caracara nest and on-site foraging habitat was completed through the incorporation of conservation measures from the 2005 biological opinion (Service 2005). The affected nest tree was removed outside of the nesting season and a habitat creation and restoration program was instituted. Exotic vegetation was removed and cabbage palms were planted on a total of 601 ac of pasture within SSA6 for the benefit of caracara (Figure 7).

While caracaras have been observed on the Project site and continue to use the area as foraging habitat, no nests have been detected on-site. To minimize potential adverse effects on potential nesting caracaras, the Applicant proposes conducting a nesting season caracara survey in advance of clearing of habitat containing cabbage palms of suitable height and landscape placement. The survey methodology shall be developed in coordination with Service caracara specialist(s). Results of the survey shall be conveyed to the SFESO in advance of construction proposed in the noted habitats. Consultation with the Service shall be re-initiated if an active caracara nest is identified on site by such survey.

Action area

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. For this Project, the Service considers the action area as all lands within the footprint of the Project, and all lands located in the Service's panther Focus Area (Focus Area) within 25 mi of the Project footprint (Figure 8). The Project action area includes portions Collier, Hendry, and Lee Counties. The 25-mi buffer around the Project footprint is based on mean dispersal distances of 23.2 mi (Maehr et al. 2002), and 24.9 mi (Comiskey et al. 2002) reported for subadult male panthers. The 25-mi buffer distance encompasses the dispersal distance of both male and female panthers because male panther dispersal distances are known to exceed those reported for female panthers (Maehr et al. 2002; Comiskey et al. 2002). The size of the action area for this consultation is consistent with action areas defined in our recent biological opinions for the panther, and it encompasses the wide ranging movements of subadult panthers and the large home territories of adult panthers.

The Focus Area denotes areas in Florida where development projects are most likely to affect the panther and is based on the scientific information on panther habitat usage provided in Kautz et al. (2006) and Thatcher et al. (2006). The Focus Area includes lands in Charlotte, Glades, Hendry, Lee, Collier, Palm Beach, Broward, Miami-Dade, and Monroe Counties, as well as the southern portion of Highlands County. Developed urban coastal areas in eastern Palm Beach, Broward, and Miami-Dade Counties, and in western Charlotte, Lee, and Collier Counties were excluded because they contain little or no panther habitat, and it is unlikely panthers would use such areas.

For purposes of our analysis of the Project's effects on the indigo snake, the area considered will be a subset of the greater action area and will focus on the areas where the Project has the potential to affect this species. This area is identified in the Status of the Species in the Action Area section.

SPECIES NOT LIKELY TO BE ADVERSELY AFFECTED BY THE PROPOSED ACTION

RCW

The RCW was considered in the June 29, 2005, biological opinion for the Ave Maria DRI, and its prior versions. At that time, the Corps made the determination that the proposed action "may affect, but is not likely to adversely affect" the RCW. The Service concurred with that determination. As regional RCW demography has not changed since the prior consultation, the impacts proposed by the current Project were included in the prior consultation, the Service's prior "may affect, but is not likely to adversely affect" determination remains unchanged. No further consultation is required.

Wood stork

The Project is located within the geographic range of the wood stork and the Project is located within the Core Foraging Area (within 18.6 mi) of known wood stork nesting colonies. In support of the 2006 Corps permit, the Applicant proposed to compensate for the loss of wood stork foraging habitat (wetlands) by preserving and enhancing 66 ac of on-site wetlands within the DRI. The Corps subsequently determined the Project "may affect, but is not likely to adversely affect" the wood stork. The Service concurred with that determination in Service Log No. 4-1-04-PL-6866-R3. The prior "may affect, but is not likely to adversely affect" determination remains consistent with the proposed actions. No further consultation is required.

Caracara

The Project falls within the caracara consultation area. During the 2005/2006 permitting process, an active caracara nest was found to be located on site. The Corps, then, made a determination that the proposed Ave Maria DRI development "may affect" the caracara and the Corps initiated formal consultation for the caracara with the Service. The Service generated a biological opinion (Service Log No. 4-1-04-PL-6866-R3) that considered the caracara. With the provision of 601 ac of in-kind compensation for direct impacts to improved pasture habitat, the protection of associated SSA6 lands (Figure 7), and the commitment to radio-tag and monitor the caracaras, the Service concluded that the "level of incidental take is not likely to result in jeopardy to the species".

While the removal of the formerly occupied caracara nest and effects to associated on-site habitats have been mitigated, a few potential nest trees remain on the Project site and caracaras continue to be observed in the area. The Applicant has committed to conduct a nesting season caracara survey in advance of clearing of habitat containing cabbage palms in order to minimize the potential adverse effects to the species. The survey methodology shall be developed in

coordination with Service caracara specialist(s). Results of the survey shall be conveyed to the SFESO in advance of construction proposed in the noted habitats. The Service has determined that based the previous mitigation and the measures described above, further analysis of potential affects to caracara are not needed at this time and will not be discussed further in this biological opinion. However, consultation with the Service shall be re-initiated if an active caracara nest is identified on site by such survey.

STATUS OF THE SPECIES

Florida panther

Please see Enclosure for the Status of the Species for the panther.

Summary of the threats to the species

The panther is a wide-ranging species that requires large areas of diverse landscape to survive. Dispersing sub-adult males wander widely through unforested and disturbed habitat. Human population in South Florida has dramatically increased, from 1million in 1950 to 6.6 million in 2010, resulting in secondary disturbances such as increased human presence and noise, light, air, and water pollution. In southwest Florida (Charlotte, Collier, and Lee Counties), where the reproducing panther population is primarily located, human population has increased from 833,892 in 2000 to an estimate of 1,231,100 in 2010, representing an increase of 47.6 percent over the 10-year period (University of Florida 2009). Between 2010 and 2017, the five counties within the Project action area (Collier, Lee, Charlotte, Hendry, and Glades) have seen an additional estimated 17.0 percent population increase (U.S. Census Bureau 2018). At the same time, the panther population has been increasing and so have mortalities. Increasing human population has resulted in increasing impacts on native habitat and flora and fauna. Resulting threats to panthers include direct effects, such as human disturbance from project construction, and habitat loss and fragmentation; and indirect effects from road mortality, human disturbance following construction, and intra-specific aggression. All known panther deaths and causes of death are tracked by the FWC, and its database identified at total of 520 deaths from 1972 to 2017 (Figure 9). Several factors have precluded accurate counts of panthers, but some estimates that have been used include: 20-30 throughout the 1970s and early 1980s; 30-50 in the late 1980s through the mid-1990s; 50-70 for several years following genetic restoration in 1995; 90-120 in the early 2000s; 100-180 in 2014; and 120-230 in 2017 (FWC 2017a). Current population estimates include only adults and subadults, not kittens that are still dependent on their mother, and is only for the areas south of the Caloosahatchee River identified as suitable breeding habitat based on Kautz et al.'s (2006) habitat analysis (FWC 2017a).

From 1944 to the present, approximately 3,656,680-ac of public lands in south Florida have been acquired, which benefit the panther (Table 4 and Figure 10). Lands of the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida encompass over 350,079 ac in south Florida. Of these tribal lands, 187,526 ac are used by panthers, and comprise 5 percent of the Primary Zone (Kautz et al. 2006). In general, these lands are not specifically managed for the panther and are largely in cultivation. However, in 2007, the Seminole Tribe of Florida reserved about 4,144 ac within the 14,724 ac Big Cypress Seminole Indian Reservation Native Area,

specifically for the benefit of the panther. The remaining native area, about 10,580 ac, although not specifically managed for the panther, provides high quality value habitat for the panther and panther prey species.

A variety of Federal, State, and private incentive programs are available to assist private landowners and other individuals with the protection and management of wildlife habitat. Voluntary agreements, estate planning, conservation easements, land exchanges, and conservation/mitigation banks are all methods that have the potential to conserve private lands. In 1954, the National Audubon Society established the 10,880-ac Corkscrew Swamp Sanctuary. However, little additional private land has been protected south of the Caloosahatchee River for panther conservation. A number of properties identified by the State Acquisition and Restoration Council for purchase by the Florida Forever Program are used by panthers (*e.g.,* Devil's Garden, Half Circle F Ranch, and Panther Glades). North of the Caloosahatchee River, the Fisheating Creek Conservation Easements are private holdings totaling 50,030 ac in Glades County used by dispersing panthers. In 2017, FWC verified the presence of at least two panther kittens at the privately held 67,619-ac Babcock Ranch Preserve in Charlotte County, presumed to be the offspring of the first female panther documented north of the Caloosahatchee River since 1973 (FWC 2017b).

The Service developed a Panther Habitat Assessment Methodology and refugia design in 2003 to help guide the agency in evaluating permit applications for projects that could affect panther habitat. This methodology provided a way to assess the level of impacts to panthers expected from a given project, and to evaluate the effect of any proposed compensation offered by the project's applicant. The Habitat Assessment Methodology was updated in 2009. A full description of our Habitat Assessment Methodology can be found at: https://www.fws.gov/verobeach/MammalsPDFs/20120924_Panther%20Habitat%20Assessment%20Method_Appendix.pdf.

The threats posed by human disturbance during and after Project construction, habitat loss and fragmentation, road mortality, and intra-specific aggression are relevant to this Project and will be discussed in the remainder of this Biological Opinion.

FBB

Please see Enclosure for the Status of the Species for the FBB.

Summary of threats to the species

Loss of native forested habitat and roost sites in south Florida are major threats to the FBB (Belwood 1992) and were primary considerations in listing the FBB as endangered (Service 2013b). The loss of crop-based agricultural lands in southwest and south-central Florida and increasing development are threats to foraging FBB (Bailey et al. 2017). Other threats include disease, effects of small population size and isolation, competition for tree cavities, direct and indirect harm by humans, pesticides and contaminants, ecological light pollution, climate change, and sea level rise. Threats that are relevant to the Project and will be discussed in the remaining sections of this biological opinion are the loss or degradation of native forested

habitat, foraging habitat, and roost sites; injury or mortality of FBBs in roosts; and direct and indirect harm by humans, including physical disturbance and ecological light pollution.

Indigo snake

Please see Enclosure for the Status of the Species for the indigo snake.

Summary of threats to the species

The modification and destruction of natural upland and freshwater wetland communities were a primary consideration in listing the indigo snake as threatened. The primary threats to the indigo snake throughout the state of Florida include habitat loss and fragmentation from on-going commercial and residential development. Collisions with motor vehicles on Florida's extensive roadway system may be a significant source of indigo snake injury and mortality. Another threat to the snake is loss of habitat converted to other uses, such as citrus orchard and canals. However, indigo snakes are very adaptable and can colonize agricultural areas and canal banks after conversion. Additionally, habitat degradation due to lack of management, including prescribed fire, is a threat to indigo snakes. The threats relevant to this Project are permanent loss of suitable habitat as well as a reduction in the ability to use prescribed fire in remaining suitable habitat and around the area. The Project's adverse effects to indigo snakes will be discussed in the remainder of this biological opinion.

ENVIRONMENTAL BASELINE

Status of the species within the action area

Panther

The Service used current and historical radio-telemetry data from collared panthers, information on habitat quality, prey-base, and evidence of un-collared panthers to evaluate panther use in the action area. Panther telemetry data are collected 3 days per week from fixed-wing aircraft, usually in early to midmorning. Studies indicate panthers are most active between dusk and dawn (Maehr et al. 1990, Beier 1995) and are typically at rest in dense ground cover during daytime monitoring flights (Land 1994). Therefore, telemetry locations may present an incomplete picture of panther activity patterns and habitat use (Comiskey et al. 2002). However, this potential bias was not detected in an analysis by Land et al. (2008) using Global Positioning System (GPS) location data collected throughout a 24 hour day. This study revealed panther habitat selection patterns are similar when using either aerial telemetry data or GPS location data, and upland and wetland forests were the habitats most selected by panthers. There was also an indication grassland-dry prairie habitats were used more at night than during daytime hours.

Only a subset of the panther population has been radio-collared. However, the large database of telemetry locations taken from radio-collared panthers south of the Caloosahatchee River can be used to estimate the size and number of home ranges and travel corridors south of the Caloosahatchee River. The FWC also uses observational data collected during telemetry flights to assess the yearly breeding activity of radio collared panthers.

The most recent available data indicates that between July 2005 and June 2017, a total of 28,450 telemetry observations from 115 radio-collared panthers have been documented within the action area, 35 of which have a current status of alive or unknown and were born after June 2005. Panthers greater than 12 years of age are not likely to still be alive based on the known longevity of panthers in the wild (FWC 2013). During June of 2017, telemetry points from 15 panthers were recorded within the action area (FP 185, FP193, FP199, FP 214, FP 217, FP 220, FP 224, FP 234, FP 239, FP 241, FP 244, FP 245, FP 246, FP 247 and FP 249); however, the deaths of FP 234, FP 245, and FP 249 have been recorded since that time. The status and activities of uncollared Florida panthers (UCFP) within the action area are unknown. The Service believes the area surrounding the Project site may be used by other non-collared panthers because the Project vicinity has been used historically by panthers as indicated by telemetry locations.

Available FWC data indicate there have been 382 panther deaths within 25 mi of the proposed Project (Figure 11), and that 240 of those deaths were attributed to panther collisions with vehicles (Table 5 and Figure 12). The most recent vehicle-related panther mortality in the action area occurred August 1, 2018, on Golden Gate Boulevard, 2.0 mi west of Wilson Boulevard, in Collier County, Florida, approximately 11. 4 mi southwest of the Project. A total of 34 vehicle-related panther deaths have occurred within 5 mi of the Project site. Five of those were within 2 mi of the Project site, including: UCFP 284 (0.9 mi east on CR-858 [Oil Well Road]), UCFP 114 and UCFP 214, (1.4 mi east on CR-858), and UCFP 122 and UCFP 328 (1.0 mi north on CR-846 [Immokalee Road]), and UCFP 231 (2.0 mi west on CR-846). The number of vehicle-related panther deaths within the Project action area has been trending upward in recent years, with 40 percent of those recorded since 1979 having occurred in the past 5 years (Figure 13).

Reported panther depredations of domestic animals are also tracked by FWC. Available data indicate that between December 2005 and May 2018 there have been 276 confirmed panther depredation incidents within the Project action area, 29 of which occurred within 5 mi of the Project.

FBB

As previously stated, the effects of the proposed action on the FBB do not extend across the entire Project action area. In one study using GPS-satellite tags at Babcock-Webb Wildlife Management Area, researchers found that most FBB locations were within 1 mi of the roost (point of capture) (Ober 2015). However, FBBs also tended to take one longer foray, up to 7 mi, shortly after sunset each night (Ober 2015, Ober 2016). For the purposes of our analysis we will focus on the entire Project site and areas within 7 mi of the Project boundary.

The FBB has one of the most restricted distributions of any species of bat in the New World, and it appears to be restricted to the southern portion of Florida, excluding the Keys. Southwest Florida (Collier/Monroe/Lee/Hendry Counties) is one of four main geographic focal areas identified by the Service (2013c). Within the Project analysis area and surrounding lands, FBBs have been recorded acoustically in FPNWR, CREW, Big Cypress National Preserve (BCNP), Fakahatchee Strand Preserve State Park (FSPSP), Picayune Strand State Forest, Collier-Seminole

State Park, Okaloacoochee Slough State Forest, and Dinner Island Ranch Wildlife Management Area. A FBB roost with at least 12 FBBs was identified in a dead pine snag on the FPNWR on July 7, 2015, at that time constituting only the second natural roost documented in 30 years (Braun de Torrez 2015). This roost at FPNWR, adjacent to SSA6, appears to have been subsequently abandoned due to snag deterioration. Two other roosts have been found in BCNP and FSPSP. Recent acoustic survey reports submitted to the Service for two other proposed projects within the Project's 7-mi FBB analysis area have identified the presence of FBBs.

The Project site and all conservation easement lands within SSA1, 2, 3, 4, and 6 are within the FBB Consultation Area. The entire 2,826.5-ac Project site consists of habitats suitable for foraging FBB. Currently, the Project site is primarily agricultural row crop, pasture, and other non-forested habitats; however, 24.5 ac of forested pine and cypress habitat contains trees of sufficient size to support potential roosting by FBBs. The Consultant determined that 6 of 12 forested areas on-site contained trees with cavities and conducted a cavity tree survey and inspection in December 2015. Cavities identified during the survey were monitored by acoustic survey between March 18, 2016, and May 12, 2016, for a minimum of 4 nights at 5 of the 6 locations. The cavity tree at the sixth location (a dead pine snag) fell between December, when it was identified, and March, when the acoustic survey commenced.

According to the Consultant's survey report, FBB call sequences were recorded at 3 of the 5 survey locations. FBB call sequences were detected within 1.5 hours of sunset at two locations, suggesting that those cavity trees likely represent active FBB roosts. Other FBB call sequences were recorded outside the period of emergence varied both geographically and in time suggesting that the FBB may use the site to forage. Based on the presence of suitable habitat and observed FBB activity, the Service determined that FBB are likely forage over the entire Project site and that additional acoustic surveys of non-forested areas were not necessary. Any future surveys will focus on potential roosts.

Indigo snake

As previously stated, the effects of the proposed action on the indigo snake do not extend across the entire Project action area. The eastern indigo snake is known to use about every habitat type except for bodies of water (Layne and Steiner 1996, Service 1999). Therefore, suitable habitat for the indigo snake exists on site. Although a majority of the Project site has been previously converted from natural habitats to agricultural uses, indigo snakes have been documented in similar conditions. Therefore, for the purposes of our analysis we will focus on the lands within the Project boundary.

Site-specific information on the number of indigo snakes does not exist. The Services' GIS database is a compilation of recorded locations of federally listed threatened and endangered species obtained through a variety of reliable sources. The nearest record of indigo snake is located approximately 5.4 mi southwest of the Project. The Service's database also lists several records for indigo snakes within the CREW area approximately 10 mi to the northwest with no barrier between the project and the sighting. Project site does not contain gopher tortoise burrows, but burrows made by other species, drainage pipes, and other refugia that could be used by indigo snakes are present. Due to the presence of suitable habitat and refugia, the proximity

of known locations, and lack of physical barriers, the Service expects that the indigo snake occupies the entire Project site.

It is difficult to estimate the density of eastern indigo snakes in the Project area due to a general lack of existing data. Therefore, the Service will use indigo snake home range information from other studies on the species to estimate its abundance. A 26-year study conducted by Layne and Steiner (1996) at Archbold Biological Station, Lake Placid, Florida, determined the average home range size for a female indigo snake was 46 ac and that of a male home range was 184 ac. The Project contains 2,826.5 ac of suitable indigo snake habitat including cropland, shrub and brush, dry prairie, improved pasture, hardwood-pine forest, and pine forest habitats. Considering overlapping home ranges between the sexes, we expect that there are 61 females and 15 males, for a total of 76 indigo snakes within the 2,826.5 ac of suitable indigo snake habitat located on the Project site. Because 61 female snakes are assumed to be present, we also assume that 61 nests with eggs could be present.

Factors affecting the species environment within the action area

Factors that affect the species environment (positively and negatively) within the action area include, but are not limited to Federal, State, or private actions and other human activities in the action area, such as: construction of highways and urban development, agriculture operations, resource extraction, public lands management (prescribed fire, public use, exotic eradication, etc.), hydrological restoration projects, and public and private land protection and management efforts.

Climate change

Our analyses under the Act include consideration of observed or likely environmental effects related to ongoing and projected changes in climate. As defined by the Intergovernmental Panel on Climate Change (IPCC), "climate" refers to average weather, typically measured in terms of the mean and variability of temperature, precipitation, or other relevant properties over time; thus "climate change" refers to a change in such a measure which persists for an extended period, typically decades or longer, due to natural conditions *(e.g.,* solar cycles) or human-caused changes in the composition of the atmosphere or in land use (IPCC 2013, p. 1450). Detailed explanations of global climate change and examples of various observed and projected changes and associated effects and risks at the global level are provided in reports issued by the IPCC (2014 and citations therein). Information for the United States at national and regional levels is summarized in the National Climate Assessment (Melillo *et al.* 2014 entire and citations therein; see Melillo *et al.* 2014, pp.28-45 for an overview). Because observed and projected changes in climate at regional and local levels vary from global average conditions, rather than using global scale projections, we use "downscaled" projections when they are available and have been developed through appropriate scientific procedures, because such projections provide higher resolution information that is more relevant to spatial scales used for analyses of a given species and the conditions influencing it (Melillo *et al.* 2014, Appendix 3, pp. 760-763 for a discussion of climate modeling, including downscaling). In our analysis, we use our expert judgment to weigh the best

scientific and commercial data available in our consideration of relevant aspects of climate change and related effects.

Climate change may result in an increase in the intensity or frequency of tropical storms and hurricanes in Florida. The Atlantic Multi-decadal Oscillation (AMO) influences rain patterns in Florida. We are currently in an AMO wet phase that is predicted to persist through 2020 (Miller 2010). The increased rainfall associated with both of these factors could reduce our ability to effectively use prescribed burning to manage habitat in optimal conditions for panthers, indigo snakes, FBBs, and their prey. Increased rainfall could also reduce the amount of area suitable for panther denning or for panther prey species by increasing the area covered with standing water or the duration of inundation of seasonally wet areas.

It is difficult to estimate, with any degree of precision, which species will be affected by climate change or exactly how they will be affected. The Service will use Strategic Habitat Conservation planning, an adaptive science-driven process that begins with explicit trust resource population objectives, as the framework for adjusting our management strategies in response to climate change (Service 2006).

EFFECTS OF THE ACTION

Adverse effects

Florida panther

The Project site contains panther habitat and is located within the geographic range of the panther. Panthers may be found on and adjacent to the proposed Project footprint year-round. Potential effects to the panther due to the proposed action include a number of direct and indirect effects on the panther and its habitat. Direct effects are those effects that are caused by the proposed action, at the time of construction, are primarily habitat based, are reasonably certain to occur and could include: (1) the permanent loss and fragmentation of habitat that supports panthers and their prey; and (2) disturbance by construction and on-going production activities. Indirect effects are those effects that result from the proposed action, are later in time, and are reasonably certain to occur. The indirect effects this Project could have on the panther within the action area are discussed below and in the assessment of functional habitat values previously discussed. They could include: (1) increased potential for panther mortality due to motor vehicle collisions; (2) increased disturbance to panthers and their prey due to human activities; and (3) an increase in the potential for intraspecific aggression among panthers due to reduction of the geographic distribution of habitat of the panther.

The Service's 2003 Panther Habitat Assessment Methodology was used in quantifying the impacts and compensation described in the 2005/2006 Ave Maria biological opinions. The Habitat Assessment Methodology was updated in 2009. Therefore, the 2003 habitat scoring methodology is used to calculate the compensation recommendations for Ave Maria DRI actions that have already occurred, and the 2009 habitat scoring methodology used to calculate the compensation recommendations for the Project re-authorization.

Land clearing and construction activities

The Project will be constructed in an ongoing disruptive event and result in permanent loss and alteration of the existing ground cover. The time required to complete construction of the Project estimated at approximately 20 years. Land clearing will be undertaken in multiple phases as construction begins in new sections of the proposed development.

The Project will result in the loss of 2,817.1 ac of panther habitat, including 1,177.1 ac in the Primary Zone and 1,640.0 ac in the Secondary Zone within the north-central portion of the Focus Area. The majority of the land to be effected by Project activities consists of improved pasture and agricultural lands that provide habitat for the panther and its prey. A variety of prey species for the panther are known to occur within the action area. These species include: white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), nine-banded armadillo (*Dasypus novemcinctus*), striped skunk (*Mephitis mephitis*), Eastern grey squirrel (*Sciurus carolinensis*), Eastern cottontail (*Sylivilagus floridanus*), and various species of small mammals, wading birds, amphibians, and reptiles. Habitat adjacent to the Project site includes upland and wetland habitats that panthers may use for feeding and dispersal. Adjacent upland areas are used for a mix of agricultural practices, primarily citrus production, row crops, and cattle grazing. Adjacent wetland areas include several isolated wetlands, as well as wetlands to the north, south, and west contiguous to Camp Keais Strand, which borders the Project's west boundary. Project lands will be converted to land uses that aren't expected to be used by panthers or their prey. The habitat lost due to the Project may adversely affect the panther by decreasing the spatial extent of lands available to the panther and their prey and results in a reduction in the geographic distribution of habitat for the panther. This loss represents 0.23 percent of the 1,202,699 ac of non-urban private lands available to the panther.

Panthers are particularly sensitive to habitat fragmentation (Harris 1984), and contiguous protected habitat and corridors in key locations in south Florida are needed for panther conservation. Habitat fragmentation can result from road construction, urban development, large-scale mining operations, and agricultural land conversions within the habitat of panther prey species, and it affects the ability of panthers to move freely throughout their home ranges. Female panthers appear to be less likely to cross roads than males, which may increase the effects of habitat fragmentation (Maehr 1990).

The permanent loss and fragmentation of habitat resulting from the proposed Project may adversely affect the panther by decreasing the overall spatial extent of lands available to the panther. We anticipate any resident panthers with home ranges overlapping in the vicinity of the Project area would adjust the size and location of their ranges to account for this loss and disturbance, and the adjustment is anticipated to occur in concert with Project development. Camp Keais Strand is contiguous to the entire west border of the Project, where it ranges from approximately 0.5 mi to 1.5 mi in width. Camp Keais Strand has been identified as an important north/south corridor for panthers dispersing between FPNWR and CREW (Swanson, et al. 2008; [Figure 14]). Because Project activities will not extend into Camp Keais Strand, fragmentation of the corridor is not expected to result from Project implementation.

Intraspecific aggression is a common behavioral attribute of this species and habitat loss resulting from land clearing may indirectly increase the potential for intraspecific aggression among panthers in the action area. Panther mortalities resulting from attacks of con-specifics are known to occur in the panther population (*e.g.*, males may kill other rival males when defending a territory). Therefore, we evaluated documented intraspecific aggression between panthers in the action area. Based on FWC mortality data, 67 panther deaths due to intraspecific aggression have occurred in the action area since 1984 (44 males, 21 females, 2 unknown). The most recent mortality in that data set (UCFP313-male) occurred on August 14, 2017 along CREW Marsh Hiking Trails, approximately 10.6 mi northwest of the Project site. There were two intraspecific aggression panther deaths within 5 mi of the Project site - the closest occurring on December 23, 2010, approximately 1.1 mi south of the Project site. Intraspecific aggression deaths may be underreported, as FWC data indicates that 52 of the 67 of those reported were collared panthers. Deaths of collared panthers are usually detected after telemetry shows no movement. Intraspecific deaths of uncollared panthers, especially those occurring in remote areas, may remain undetected.

The Project would result in the loss of 2,817.1 ac of panther habitat. According to the most current home range estimates of the panther (Lotz et al. 2005), this loss represents 6.69 percent of a female panther's average home range (29,059 ac) and 4.50 percent of a male panther's average home range (62,542 ac). As discussed above, development of the Project would result in a relatively small increase in the spatial extent of disturbance from human activity in the Project area compared to a panther home range. Based on the amount of panther habitat lost, the Service finds the Project should not significantly increase the potential for intraspecific aggression in the action area.

The panther compensation quantified in Service Log No. 4-1-04-PL-6866-R3 has been executed in full, yet less than half of the previously authorized impacts to panther habitat have been executed. Therefore, the Service carried the unused portion of the existing compensation forward and applied it to activities associated with the Project re-authorization. Using the Service's 2009 panther Habitat Assessment Methodology to assess proposed activities associated with the Project re-authorization, the Consultant determined that the recommended compensation to off-set proposed activities would total 28,143.5 PHUs. In total, the PHUs provided by the unencumbered portions of the conservation easements in SSA1 and SSA2 (4,807.3 PHUs), SSA3 and SSA4 (10,983.6 PHUs), and SSA6 (10,731.5 PHUs) equal 26,522.4 PHUs – resulting in a total net compensation deficit of 1,621.1 PHUs. Therefore, to off-set that PHU deficit, the Applicant proposes to expand the existing 1,477-ac panther conservation easement within SSA6 by 179.3 ac of habitat in the Primary Zone. The 179.3-ac conservation easement expansion provides an additional 1,623.2 PHUs, resulting in a total of 28,145.6 PHUs – fully off-setting the 28,143.5 PHUs of recommended compensation for proposed Project activities (Table 3c). The off-site compensation parcels are located within the Primary Zone (Figure 5).

Both temporary and long-term effects are anticipated to result from management of the off-site preserve areas that compensate for loss of panther habitat due to Project activities. Potential sources of temporary disturbance include use of equipment (tractors and other machinery), or personnel, to clear firebreaks or eradicate exotic vegetation. There is potential for this habitat management to result in a localized avoidance of otherwise suitable panther habitat.

However, these effects are expected to occur infrequently and for short duration and are not expected to produce substantial changes in panther or prey species distribution and abundance. Conversely, effects also include the long-term benefit to habitat quality that results from prescribed fire and/or exotic vegetation management. Therefore, habitat maintenance in the off-site preserves may result in temporary adverse effects that are necessary in order to produce net long-term benefit to the species.

Construction vehicular traffic

Construction-related vehicular traffic associated with the Project could have the potential to adversely affect the panther via collision along roads within the Project site.

The Project site has not been identified as either a connection between large natural areas or as a dispersal corridor for panthers, nor does the site support an abundance of prey species that might otherwise attract panthers onto, or across, the Project site. Construction activities will typically occur during daylight hours when panthers are least active, and on-site construction vehicles will travel at slow speeds. Since the potential for panthers to enter or traverse the site is low, the potential for conflict between panthers and on-site construction vehicles is anticipated to be low and discountable.

Construction of the Project is anticipated to occur in multiple phases across multiple years. Related construction traffic may affect the off-site road within the Project action area. However, construction activities and related traffic will typically occur during daylight hours when panthers are least active. Additionally, the two wildlife crossings on Camp Keais Strand immediately west of the Project (at Oil Well Road [CR858] and Immokalee Road [CR846]) are anticipated to reduce the likelihood of vehicular conflict with panthers. Therefore, the Service believes it is unlikely that the Project's construction-related traffic will result in direct or indirect road mortality or injury of the Florida panther.

Human related activity

The completed Project will increase potential disturbance to panthers and their prey from the expected increase in human activities at the Project site (*e.g.*, operation of motor vehicles on area roadways, lights and noise from human activities, etc.). The disturbance resulting from the increase in human activities and presence in the Project footprint are expected to affect the movements of panthers and panther prey species. Consequently, panthers and panther prey species may be less likely to approach the Project site, or they may choose to avoid the Project site altogether. The additional human activity at the Project site in conjunction with the loss of panther habitat resulting from the Project could affect panther use patterns in the Project area.

Panther vehicle injury and mortality was discussed in the Environmental Baseline section of this document. In evaluating a Project's potential to increase injuries and mortalities to panthers resulting from motor vehicle collisions, we consider the location of the Project in relation to surrounding native habitats, preserved lands, and wildlife corridors that are frequently used by the panther. We also consider the current configuration and traffic patterns of surrounding roadways and the projected increase and traffic patterns expected to result from the proposed

action. Panther vehicle injury and mortality throughout the action area is also discussed in the Environmental Baseline section of this document.

The Project will result in increased vehicular traffic in the Project vicinity during and after construction. The Project involves construction of internal roads, but these are not expected to pose a high risk to panthers because the speed limit will be lower than main roads and access to these internal roads by panthers coming from natural areas is minimized due to residential, commercial, and institutional buildings and the associated stormwater management system separating the natural areas from the roads.

The Service used traffic data from the Applicant's Traffic Impact Study (TIS) and available historical traffic data from the Collier County Traffic Operations Department and the Florida Department of Transportation to estimate the risk to the panther from the anticipated Project-generated traffic. WilsonMiller Incorporated prepared a TIS that examined the effects of the Project's traffic on nearby roads. The TIS estimated that, upon completion, a total of 76,312 daily Project-generated external trips would be added to area roadways. The TIS also provided Average Annual Daily Traffic (AADT) projections for 36 area roadway segments at Project buildout (Table 6). These segments were identified as likely to experience "significant impact" from Project traffic (defined as those segments where Project traffic volume represented 5 percent or more of the existing plus committed service volumes). Because the report was prepared to assist Collier County to identify roads and intersections that could require modification, only roadways where Project-generated traffic was expected to exceed 1,000 AADT were included. This criteria excluded several lower volume roadways on which several vehicle-related panther deaths have occurred, even though Project-generated traffic may increase traffic volumes on these roads by considerably more than 5 percent.

While there have been 240 vehicle-related panther deaths within the Project action area, panther deaths on specific road segments are typically rare events. Therefore, to estimate the current risk of vehicle-related mortality at a road segment level, we apply data from the past 5 years for the segment. The current risk to panthers from Project-generated traffic was assessed for a total of 13 road segments within the Project action area (Figure 15). Selection criteria included road segments where: (1) panther deaths occurred between 2013 and 2017, (2) Project-generated AADT estimates were provided in the TIS, and (3) historical AADT data were available. Our assessment looked only at potential affects from predicted future Project-generated traffic on each road segment.

The TIS was produced in 2004 and provided AADT estimates for the Project upon completion. At that time Project buildout was anticipated to occur in 10 years. In June 2018, the Consultant provided a revised estimate that approximately 30 percent of the Ave Maria development has been completed under the previous authorization and that 70 percent of construction remains. Therefore, we calculated the Project-generated traffic volume for each road segment as 70 percent of the AADT (presented as Daily Project Traffic in Table 6). The Consultant also provided a revised estimate that remaining Project activities would take 20 years to complete. Therefore, we calculated annual additions to traffic volume as 5 percent of the revised AADT.

In equation form, the annual Project-generated traffic for each segment was calculated as:

(AADT x 0.7) x (0.05), where AADT is the Daily Project Traffic value in Table 6.

The risk to panthers from Project-generated traffic was assessed for each of the 13 road segments by taking the number trips observed in the past 5 years (2013-2017) and dividing that total by the number of panthers killed during the same period to give the number of trips per death on each segment. The annual risk for panther deaths due to Project-generated traffic was then estimated by dividing the number of annual Project-generated trips for each segment (as estimated in the TIS) by the number of trips per death calculated for that segment. For example, using data for road segment A in Table 7, the 5-year average AADT for 2013-2017 was 10,974 and one panther death occurred during that period. Since there are 1,825 days in 5 years, the number of trips in 5 years is calculated as: 10,974 x 1,825 = 20,027,550 trips per 5 years. Since there was 1 panther death on this segment during the period, the risk would be 20,027,550 trips per death. The revised Project-generated AADT for this segment is 12,369 (*i.e.,* 17,670 x 0.70 = 12,369). Since AADT is the daily rate, to calculate the annual risk, we multiply 12,369 x 365 = 4,514,685 Project-generated trips per year on this segment. By dividing the annual trips by the trips per death, the calculated risk is 4,514,685 ÷ 20,027,550 = 0.23 deaths per year from Project-generated traffic per year on this road segment. The number of trips per death is unique to each road segment, and can be used to estimate risk for Project-generated vehicle collision panther deaths over various time frames by using the amount of traffic for that period (*e.g.,* using the segment A example above to estimate the 5-year Project risk, multiply 12,369 x 1,825 = 22,573,425 trips over 5 years; then divide by the trips per death constant for the segment: 22,573,425 ÷ 20,027,550 = 1.13 panther deaths per 5 years).

Table 7 presents a summary of the risk of panther deaths due to the total amount of Project-generated traffic on each road segment. During the 5-year period between 2013 and 2017, a total of 40 vehicle-related panther deaths occurred on the 13 road segments, an average of 8 per year. The TIS predicts that at buildout, Project-generated traffic would add an annual total of 29.1 million trips on these road segments, representing a 52 percent increase in traffic (and a corresponding 52 percent annual risk for panther deaths). Data presented in Table 7 represent the predicted risk attributable to the total buildout traffic if it were to enter the system at one time.

However, the Applicant's current estimate is that buildout will be achieved in 20 years. Table 8 presents an assessment of impacts based on a 20-year buildout horizon. Project-generated traffic is added to the 13 road segments at a rate of approximately 1.45 million trips per year (*i.e.,*29.1 x 0.05 = 1.45). This volume translates to a risk of 0.21 panther deaths per year on these 13 segments. Because future Project-generated traffic volume and the annual risk for panther death are cumulative, there would be a predicted risk for 3.09 deaths on these segments from a total of 21.8 million added trips during the first 5 years of Project construction (Table 8). Projecting the data through the Project lifespan, there would be a predicted risk of 11.34 deaths from 80 million trips through year 10, a risk of 24.74 deaths from 174.5 million trips through year 15, and a risk of 43.30 deaths from the total 305 million total trips. This total includes all traffic generated from year1 through year 20, until Project-generated traffic for the 13 road segments reaches the predicted buildout total of 29.1 million trips per year. Such projections

count traffic generated for each of the 20 years of the construction schedule (*i.e.*, year-1 traffic is counted 19 more times during construction). The above analyses examines the effect of Project-generated traffic only and are based on current conditions. We believe that when assessing future Project-related affects to panther, predictions for the next 5 years of impacts are reasonable, as short term variability is unlikely to be significant. However, we believe it is not practical to look forward 20 years in the traffic assessment as several factors could affect projections during that time frame, including increases in background traffic, changing traffic patterns, new road construction, changing driving habits, additional panther protections (*e.g.*, wildlife crossings, reduced speed limits, warning signs), and increasing panther populations.

The increase in the observed number of vehicle related traffic deaths has been noted to coincide with increases in traffic and an increasing panther population (Onorato et al. 2010; McClintlock et al. 2015). As discussed in the Status of Species section of this document, the panther population south of the Caloosahatchee has increased steadily in the past 20 years, as have the number of vehicle-related panther deaths. McBride et al. (2008) found that increased highway mortality corresponded positively with increases in the panther population.

Within the Project action area, from 1972 to 1997, there were a total of 22 vehicle-related panther deaths, an average of just under one per year. In the 20 years between 1998 and 2017, there were a total of 208 vehicle-related panther deaths. There have been 11 additional action area deaths, including 5 deaths on the 13 analyzed segments, during 2018 (through August 1) that were not included in any of the Project traffic calculations in this biological opinion due to the lack of traffic volume information. The Service used a plot of action area panther deaths against action area traffic to show the trends in action area traffic increases and panther deaths (Figure 16). In the absence of county-wide traffic data, we selected 11 representative action area road segments (urban and rural) to serve as a surrogate for estimating action area traffic volume trends (Figure 17 and Table 9). These are road segments for which historical traffic data going back at least 20 years was available, and included 5 of the 13 segments used for the above Project traffic analysis (20 years of traffic volume data were not available for 8 of 13 segments). Those data indicate that Project action area traffic volume has likely increased by approximately 75 percent since 1998. Traffic volume generally increased through 2006, but decreased after 2007 and did not return to 2007 levels until 2015. Traffic volume on urban road segments increased by at least 100 percent. The five rural roads segments saw modest or negative growth, especially since 2002, when traffic volumes were essentially unchanged on 4 segments and decreased by 19 percent on the other (SR 29, south of Immokalee).

According to FWC estimates, the panther population south of the Caloosahatchee has likely increased between 140 percent and 360 percent since 1998. The number of vehicle-related deaths within the Project action area has varied year to year, but the overall the rate of increase has been relatively consistent. The data suggest that the average annual death rate has increased from approximately 2 per year in 1998 to approximately 20 per year in 2017. Historical data for traffic, panther mortality, and FWC's panther population estimates for years 1998 through 2017 are summarized in Table 10. Using the total traffic volume observed on the 11 segments as a surrogate for the action area, traffic volume data also suggest that since 1998 the number of trips per roadkill has decreased steadily, likely as much as 60 to 70 percent since 2002 (Figure 18), meaning more panthers are being killed by less traffic. If traffic volume alone were

responsible for the number of deaths, the number of trips per death would remain constant unless other variables have changed (*e.g.*, increased percentage of nighttime drivers, increased vehicle speeds, or increased panther density). Another indication that increases in vehicle-related panther deaths may be population driven is the increase of deaths in urban areas, which is largely a recent phenomenon. Of the 27 deaths recorded in the urban Naples and Golden Gate Estates areas, only 4 deaths occurred before 2013 and none before 2008. Similarly, on SR 82, west of SR 29 (Figure 15, segments I and J), all 10 recorded panther deaths have occurred since 2012 (8 since 2016). While this is a rural area, the location is seen an important dispersal pathway between the CREW and Okaloacoochee Slough State Forest (Land, 2017). Deaths occurring at these locations may suggest that an increasing panther population is causing individuals to utilize sub-optimal habitats or disperse through these areas.

Wildlife crossings have been a successful management tool to decease panther mortality and increase the panther population (McClintlock et al. 2015). Since 1993, a total of 61 panther crossings have been constructed on Florida roads, including 43 within the Project action area. Available data suggests that wildlife crossings and associated fencing have likely reduced occurrences of vehicle-related panther deaths within the Project action area. One example is a section of I-75, just west of SR 29, on the south border of FPNWR (Figure 15, segment L), where 5 panther deaths were recorded in the 1980s. In the 25 years since 3 wildlife crossings and fencing were installed in 1993, there have been no recorded panther deaths in that area. Further west on I-75 (also within segment L), 17 panther deaths occurred between 2004 and 2016 -- including 8 during the 2013 to 2017 traffic analysis period. Since the recent additions of 2 wildlife crossings (2016) and 9 mi of panther fencing (2017), no deaths have been recorded. In a section of SR 29 north of I-75 within and just north of FPNWR, only 2 of the 14 deaths came after 4 wildlife crossings were installed (2 in 1995 and 2 in 2007).

The Transportation SubTeam of the Florida Panther Recovery Implementation Core Team (consisting of representatives of wildlife conservation groups and local, state, and Federal agencies), has identified and prioritized several "hot spots" (roads where multiple panther deaths have occurred), and are coordinating efforts to install wildlife crossings at these locations roads (Shindle, 2018). Eleven of the 13 "hot spots" are located in the Project action area, with the 3 highest priority just to the east of the Project on SR 29 (Figure 15, segments G and H) and on CR 846 east of Immokalee (Figure 17, segment 10). Additionally, 2 wildlife crossing are being incorporated into the Florida Department of Transportation's (FDOT) planned widening of SR 82 at the location described above where 10 panther deaths have been recorded since 2012. Additionally, Collier County is currently planning the replacement of 11 bridges on CR 846 (Figure 17, segment 10) and CR 585, just to the south. A total of 18 panther deaths have occurred on these two road segments, and the county is investigating the feasibility of installing wildlife crossings at up to 6 of these bridges.

The Applicant previously mitigated for Project traffic impacts as part of the original authorization (Service Log No. 4-1-04-PL-6866-R3) by coordinating with Collier County in the installation of 3 wildlife crossings below bridges crossing Camp Keais Strand just west of the Project. Camp Keais Strand provides a dispersal corridor between FPNWR and CREW. There had been 4 panther deaths at these bridge locations prior to the completion of the wildlife crossings in 2012 and 2013. Since that time there have been none. The Applicant also

coordinated with the county to install fencing near an existing wildlife crossing on CR 846 east of Immokalee.

By the end of the first 5 years of this phase of development, it is expected that approximately 13,355 trips will enter or leave the Project site each day ([76,312 daily external trips at buildout] x [70 percent of buildout traffic associated with Project activities] x [25 percent of 20-year buildout schedule complete at 5 years] = 76,312 x 0.70 x 0.25 = 13,355). After leaving (or before arriving) the Project site these vehicles may travel over one or more of the identified 13 road segments. Based on a traffic analyses of 13 Project action area road segments, it was calculated that this is amount of traffic is likely to result in an increased risk of 3.09 panther deaths over the current baseline during the first 5 years. Project-generated traffic volume would continue to increase throughout the Project's 20-year buildout schedule, and ultimately result in a risk of 43.30 deaths during the entire 20 year period, an average of approximately two per year. The three predicted panther deaths (rounded from 3.09) over 5 years may represent between 1.3 percent and 2.5 percent of the current panther population. However, making comparisons of vehicle mortality to the total panther population is difficult for at least two reasons. First, FWC population estimates include only adults and sub-adults, and not kittens still dependent on their mother (*i.e.,* less than one year old). Mortality data does include kittens, and approximately 25 percent of the 93 action area vehicle-related panther deaths reported between 2013 and 2017 were estimated to be at an age of 12 months or less. Second, panther population estimates have a high degree of uncertainty. Therefore, a more appropriate method to estimate the impact of Project-related vehicle deaths may be to compare the number of predicted deaths to the number of observed deaths. The three predicted Project-related deaths over 5 years would represent 3.2 percent of the action area vehicle mortality observed in the past 5 years. Because the panther population appears to be increasing despite the upward trend in vehicle-related mortality, an increase of 3.2 percent would be discountable, especially when taking into consideration the likely beneficial effect of the recently completed, planned, and potential future wildlife crossings and fencing projects within the action area.

FBB

The proposed action is located within the FBB consultation area and has the potential to adversely affect FBB adults and juveniles using the Project area. The FBB is known to forage along wetlands and open water and roost within pine flatwoods and other habitats. Specific characteristics of natural roost sites are poorly understood. Bailey et al. (2017) found that FBB occupancy in south Florida decreased with the amount of developed lands within 3.1 mi of the sampling site and increased with the amount of crop-based agriculture within 3.1 mi. Southwestern and south-central Florida are expected to undergo the most extreme land cover changes in the state, with nearly all agricultural and private natural lands predicted to be converted to developed land by 2070 (Zwick and Carr 2016). Potential direct effects to the bat or its habitat include: (1) direct injury and mortality of individual FBBs from land clearing activities; (2) harm due to permanent loss of foraging and potential roosting habitat; (3) temporary habitat degradation; (4) disturbance resulting from proposed activities associated with preserve management (exotic removal); and (5) abandonment of roosts due to lighting, noise, and other disturbances. Indirect effects this Project could have on the FBB include increased disturbance to FBB and their prey due to human activities.

Land clearing activities

Proposed Project activities would convert 24.5 ac of forested potential roosting habitat and 2,826.5 ac of potential foraging to urban landscape. Acoustic surveys conducted on the Project site in 2016 detected echolations of FBB. Another recent survey within the Project's 7-mi analysis area also detected FBB. Visual and acoustic examination of potential roosts found no evidence of active on-site FBB roosting. No active FBB roosts have been identified within 7 mi of the Project site, so FBB identified in these surveys likely represent one or more undiscovered roosts that may be affected by the loss of foraging habitat and other Project-associated activities. To minimize adverse effects on FBBs during land clearing, acoustical and/or visual surveys will be conducted to identify any potential roost sites before commencing land clearing activities.

Florida bonneted bats have been documented to forage 1 to 7 mi from roost sites in a single night (Ober 2015 and 2016). A forage radius of 1 to 7 mi could potentially result in 2,010 ac to 98,470 ac of FBB forage habitat surrounding a roost that may be affected by development. A loss of 2,826.5 ac of habitat represents between 2.9 and 140 percent of a FBB's foraging area. This amount of habitat loss also represents less than 0.05 percent of the 5,691,000-ac FBB consultation area in South Florida. It is unknown if FBB will avoid the Project site. Roosting and foraging has been noted to occur in suburban, and urban areas (Timm and Genoways 2004). Bailey et al. (2017) detected FBB in all investigated land cover types, but also found that FBB occurrence was negatively associated with increased development. A recent acoustic survey detected FBB at the site of a proposed development in a largely urban/suburban area approximately 7 mi west of the Project. It is anticipated that as land is converted to urban land cover over the 20-year buildout horizon, FBB currently foraging over the Project site may correspondingly adjust their foraging patterns. Open areas and several ponds will be incorporated in the Project site, and these areas may continue to attract foraging FBBs. Freshwater ponds provide prime foraging areas for bats and become especially important during dry seasons, as they will drink when flying over open water (Marks and Marks 2008).

Additionally, a total of 3,855.5 ac of FBB foraging habitat will be preserved within conservation easements, including 2,080.1 ac of potential roosting habitat. Both temporary and long-term effects to FBB are anticipated to result from exotic vegetation management within the easements. A potential source of temporary disturbance includes noise associated with tractors and other machinery used during exotic vegetation removal. However, these effects are expected to be infrequent and of short duration and management is expected to provide long-term benefits to habitat quality.

Construction

Disturbance resulting from the construction of the proposed Project will be in the form of noise and dust. This disturbance is expected to occur during daytime hours. Because FBBs emerge to forage around sunset and return to their roosts around sunrise or earlier, this disturbance is expected to be minimal to foraging FBBs.

Human related activity

The modification of existing habitat conditions increase the potential for predation on individual bats due to the reduction of available cover around occupied roosts, making FBBs more vulnerable to predation. In addition, the presence of humans may create artificial food sources that may attract additional predators to the site. FBB roosting and foraging has been noted to occur in in forested, suburban, and urban areas (Timm and Genoways 2004); however, the species' behavioral response to ecological light pollution has not been examined, and effects are not known. The species' fast-flight and long range flight capabilities may make it more able to exploit insects congregated at artificial light sources or more susceptible to risks associated with such responses (*e.g.,* increased predation or harm from humans). Because FBB are known to occur in South Florida urban environments, while occupancy has been shown to decrease with the amount of developed lands (Bailey et al. 2017), it is unclear to what degree activities associated with human presence may effect FBB life history needs.

Indigo snake

Land clearing and construction activities

Habitat clearing, earth moving, scraping and piling additionally have the potential to crush and/or bury snakes, their nests and eggs. Additionally, noise and vibration disturbance from personnel and equipment during site preparation and clearing activities could adversely affect indigo snakes by causing them to their leave territory in the action area. Leaving an established territory may result in missed foraging and mating opportunities and these individuals may be more vulnerable to predation and intraspecific aggression as they are forced into another indigo snake territory. Disturbed indigo snakes may also hide in temporary refugia (piles, rutting, burrows, etc.) resulting from activities on site. This may result in missed foraging and mating opportunities, and these individuals may be more vulnerable to injury or mortality during land clearing.

The Applicant has agreed to implement the Service's *Standard Protection Measures for the Eastern Indigo Snake* (2013), which require the development of an education program for all construction personnel. Therefore, on-site personnel should be familiar with the physical description of indigo snake and know what to do if encountered during any phase of construction activities. In addition, the Applicant has agreed to investigate gopher tortoise burrows and other refugia prior to land clearing to determine whether indigo snakes may be present, and allow them to leave on their own accord, should they be discovered.

It is difficult to estimate the density of indigo snakes in the action area due to a general lack of existing data. Therefore, data from other indigo snake studies in Florida were used to estimate an approximate snake density on the Project site. A 26-year study conducted by Layne and Steiner (1996) at ABS, determined the average home range size for a female was 46 ac and that of a male was 184 ac. Considering overlap between the sexes, there could be up to 15 males and 61 females, or 76 snakes total within the 2,826.5 ac of suitable indigo snake habitat within the Project area. Because 61 female snakes are estimated to be present, we also estimate 61 nests with eggs could be present during nesting season (April to July).

On-site land clearing and construction will result in the permanent loss of 2,826.5 ac of indigo snake habitat through habitat destruction, fragmentation, and isolation that could result in the loss of up to 76 indigo snakes and up to 61 nests. The Project site, once developed, may further restrict movement of indigo snakes from larger tracts of undeveloped land through fragmentation of habitat. Although the open space areas on site will preserve some habitat, the spaces will be mostly isolated once Project construction is complete and will not allow adequate use and access by indigo snakes.

Implementation of the exotic vegetation maintenance program and prescribed burning activities within the off-site preserves have the potential to adversely affect the eastern indigo snake adults, juveniles, nests and hatchlings. Mechanical and chemical treatments may result in disturbance of indigo snakes. Potential effects resulting from prescribed burns include disturbance, injury, and direct mortality. Although eastern indigo snakes move across the landscape quickly and retreat to burrows or other refugia when disturbed, some snakes may become caught in fires and these individuals may be injured or killed. Juvenile indigo snakes may potentially be more vulnerable due to their utilization of less optimal refugia due to competition. Using multiple ignition locations, as is expected under a prescribed fire scenario, has the potential to increase the risk of snakes becoming trapped in a prescribed fire. A 7-year burn cycle is anticipated, which would reduce fuel loads and result in less intense fire behavior and unburned refugia. It is estimated that up to 69 indigo snakes and 55 nests may be present within the 2,545.5 ac of upland habitats in the preserves. We believe mortality would be low during a prescribed burn, as indigo snakes have evolved in habitats that burn frequently and would likely seek underground refugia or move to adjacent habitat to avoid fire. Little information is known on indigo snake nest sites but underground burrows are suspected to be a favored nesting location. Underground nests would likely be protected from fire. There is potential for habitat management practices to result in localized avoidance of otherwise suitable habitat. These effects are expected to occur infrequently, for short duration, and are not expected to produce substantial changes in indigo snake distribution and abundance. Conversely, the effects of habitat management (*i.e.*, prescribed fire and/or exotic vegetation management) are likely to provide long-term benefits to indigo snake habitat.

Construction vehicular traffic

Increased vehicular traffic entering and leaving the site during Project construction activities has the potential to increase the risk of snake mortality on the roadway. Because SPMs require the education of contractors and equipment operators, posting of speed limit signs on all roadways during Project construction and operation, onsite signs explaining the penalties of intentionally running over snakes, and requires that construction will cease if snakes are observed, the likelihood that indigo snakes will be killed by construction vehicles should be minimized. With proper implementation of SPMs, the Service expects the increased vehicular construction traffic may affect, but is not likely to adversely affect indigo snakes in the action area.

Human related activity

The activities of humans living and working in the Project following completion may adversely affect indigo snakes. The presence of humans and their pets will increase the potential for injuries or mortalities of any offsite snakes that move into the Project area after completion. Some humans are known to fear and hate snakes and may indiscriminately attack or kill indigo snakes when encountered. Free-roaming pets of residents may also injure or kill snakes. Finally, more motor vehicles using the existing and newly constructed roads in and around the completed development will increase the potential that any offsite indigo snakes that move or attempt to move into the Project area will be injured or killed from collisions.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation under section 7 of the Act. The Service accounts for some habitat loss and changes in habitat quality through habitat restoration associated with reviewed projects, and encourages State and County entities responsible for permitting to pursue the Section 10 (HCP) process.

The ongoing State and County actions (non-federal) affecting panther habitat within the action area include: (1) State of Florida Development of Regional Impact (DRI) Orders; (2) County Comprehensive Plan Amendments; (3) County Zoning Amendments; (4) County Planned Unit Developments; (5) Florida Department of Environment Protection Permits; and (6) South Florida Water Management District's Environmental Resources Permits (ERPs). To estimate future non-federal actions, the Service requested that the Applicant identify and tabulate recent non-federal actions and project this level of development as representative of future non-federal actions. The Applicant delegated the cumulative effects assessment to their counsel, Katherine English, of Pavese Law Firm (Counsel).

The Counsel's projections of non-federal actions in the action area incorporates Florida Land Use Cover and Forms Classification System (FLUCCS) mapping to determine if a property may be exempt from the Federal Clean Water Act, section 404 wetland regulatory review by the Corps. To predict if a development project would likely be exempt from regulatory review, the Counsel identified the percentage of the property site that was classified as wetland habitat based on FLUCCS 600 series (wetland), and the 411 and 419 (hydric pine flatwood) mapping unit classifications. Projects on properties with less than 5 percent wetlands were assumed to be exempt from the Corps' regulatory review, because impacts to wetlands could likely be avoided by project design. However, this assumption can overestimate the number of non-federal projects because many project proponents choose to apply for Corps authorization for projects with less than 5 percent wetland coverage.

Using the above selection criteria to review ERP applications to the Florida Department of Environmental Protection and the South Florida Water Management District and local government building permit applications from 2014 through 2017, 282 projects in the action area

affecting 4,371 ac of land were assumed exempt from Corps regulatory review. Therefore, Counsel estimates that approximately 1,093 ac per year (4,371 ac / 4 years = 1,093 ac/year) would be exempt from regulatory review in the action area. We find this value representative of future yearly development likely to occur in the action area. Many unforeseen factors can affect the rate of development in the action area. Therefore, we acknowledge that it is difficult to forecast the rate of development as it relates to non-federal actions in the action area with certainty. However, we believe this estimate provides the best approximation available of future non-federal development actions reasonably certain to occur based on ERP data.

Panther

This level of development represents 3.8 percent of a female panther's average home range (29,059 ac), 1.7 percent of a male panther's average home range (62,542 ac), and 0.06 percent of the non-urban private lands at risk in the Service's panther core area (1,962,294 ac). Based on the above analysis, we believe the loss of the habitat associated with these lands is insignificant in the short term, but may adversely impact the Florida panther as development continues to occur.

FBB

This level of development represents 0.02 percent of the approximately 5,691,000-ac FBB consultation area in South Florida. Based on the above analysis, we believe the loss of the habitat associated with these lands is insignificant in the short term, but may adversely impact the FBB as development continues to occur.

Indigo snake

The action area does not extend beyond the Project footprint and preserve areas. Therefore, cumulative effects to indigo snake are not expected to occur from the Project.

CONCLUSION

Panther

After reviewing the current status of the Florida panther, the environmental baseline for the action area, the effects of the proposed Project, and the cumulative effects, it is the Service's Biological Opinion that the Project, as proposed, is not likely to jeopardize the continued existence of the panther. We have reached this conclusion because: (1) the loss of 2,817.1 ac of Florida panther habitat is equivalent to 9.7 percent of a female panther's home range (29,056 ac) and 4.5 percent of a male panther's home range (62,528 ac); (2) the acreage being lost is at the edge of urbanized and agricultural areas causing little habitat fragmentation; (3) given the proposed compensation is providing panther habitat value (28,145.6 PHUs) greater than what is being lost (28,143.5 PHUs); and (4) unknown future impacts by Project-generated traffic will be off-set by the Applicant's past cooperation and contributions to install wildlife crossings and panther warning signage on area roads.

FBB

After reviewing the current status of the FBB, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, it is the Service's biological opinion that development of the Project, as proposed, is not likely to jeopardize the continued existence of the FBB. We have reached this conclusion because: (1) the loss of 2,826.5 ac of FBB foraging habitat is equivalent to 0.05 percent of the approximately 5,691,000-ac FBB consultation area in South Florida; (2) the loss of 2,826.5 ac of FBB foraging habitat and 24.5 ac of potential roosting habitat will be compensated by off-site preserves totaling 3,855.5 ac of foraging habitat (including 2,080.1 ac of potential roosting habitat); (3) preserve lands will be preserved, enhanced and managed in perpetuity, which is expected to improve the habitat quality for the FBB; (4) the purchase of additional credits for an approved wetland mitigation bank may compensate for FBB forage and roost habitat; and (5) the Applicant's commitment to visually inspect previously-identified trees with cavities in advance of removal to assure no roosting FBB are adversely affected.

Indigo snake

After reviewing the current status of the indigo snake, the environmental baseline for the Project action area, the effects of the proposed Project and the cumulative effects, it is the Service's Biological Opinion that the Project, as proposed, is not likely to jeopardize the continued existence of the indigo snake. We have reached this conclusion because: (1) the Project will permanently destroy 2,826.5 ac of suitable habitat; however, this represents a small portion of the combined acreage of all habitats usable by eastern throughout their range in Florida and Georgia; (2) the level of expected mortality (up to 76 individuals and up to 61 nests with eggs on the Project site and up to 69 snakes on the preserves) is a small fraction of the number of indigo snakes that potentially occupy the suitable habitat throughout this species' range; (3) 2,545.3 ac of suitable upland indigo snake habitat (plus an additional 1,012 ac of cypress that may be seasonally available) within preserve areas will be preserved, enhanced and managed in perpetuity; and (4) the Applicant will implement the SPMs for the indigo snake during land clearing and construction of the Project, which should reduce any mortality caused by vehicles, equipment, or if a snake is encountered by workers.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation under section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or .to attempt to engage in any such conduct. "Harm" is further defined by Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined by Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2),

taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The terms and conditions described below are non-discretionary, and must be undertaken by the Corps so they become binding conditions of any grant or permit issued to the Applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the Applicant to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Applicant and the Corps must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CPR 402.14(1)(3)].

AMOUNT OR EXTENT OF TAKE ANTICIPATED

Panther

The Service anticipates that incidental take of the Florida panther will be difficult to detect and quantify for the following reasons: (1) the Florida panther is wide-ranging and it is difficult to monitor panthers in their territories; especially un-collared panthers; (2) it is difficult to document the adverse effects of habitat loss and disturbance from the Project on survival and reproduction of Florida panther; and (3) it is difficult to attribute responsibility for vehicle-related panther deaths.

Therefore, the Service will use 2,817.1 ac of panther habitat as a surrogate for the number of individuals taken. The Project will result in the loss of 2,817.1 ac of habitat within the Primary and Secondary Zones. The incidental take is expected to be in the form of harassment (*i.e.*, disturbance to panthers resulting from human activity), and harm (*i.e.*, the loss and degradation of 2,817.1 ac. of habitat in the Project footprint).

The Service finds that no more than 2,817.1 ac of Florida panther habitat will be incidentally taken as a result of the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring immediate reinitiation of consultation and review of the reasonable and prudent measures provided.

FBB

The Service anticipates incidental take of the FBB will be difficult to detect and quantify for the following reasons: (1) patchy distribution within suitable habitats; (2) limited known locations of a natural roost sites; (3) limited information on movements, dispersal capabilities, diet, and prey base; and (4) the roost location of the FBBs that forage at the Project site is unknown which makes it difficult to monitor the effects to individual FBBs. Therefore, the Service will use 2,826.5 ac of FBB habitat as a surrogate for the FBBs taken. If during the course of this action, this level of take is exceeded, such take would represent new information

requiring review of the reasonable and prudent measures provided and the Corps must immediately reinitiate consultation with the Service.

The Service has reviewed the biological information for the FBB, information presented by the Applicant, and other available information relevant to this action. The Service anticipates 2,826.5 ac of FBB habitat could be taken as a result of this proposed action. The incidental take is expected to be in the form of harm due to the loss of 2,826.5 ac of foraging habitat and harassment due to Project activities and human interactions.

The Service finds that no more than 2,826.5 ac of FBB habitat will be incidentally taken as a result of the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring re-initiation of consultation and review of the reasonable and prudent measures provided.

We anticipate the FBB may continue to occur on areas within the action area that have not been developed, including 3,855.5 ac of off-site Project preserve areas. The addition to and management of the preserve will compensate for take associated with this Project.

Indigo snake

The Service anticipates incidental take of the indigo snake will be difficult to detect and quantify for the following reasons: (1) it has a wide ranging distribution; (2) it has a patchy distribution within suitable habitat; (3) it has limited detectability due to use of burrows or holes for shelter; (4) juveniles have limited detectability due to their affinity for thick vegetation; and (5) it may use cryptic sheltering areas that may be temporarily established during construction (*e.g.*, brush piles, equipment stockpiles, and dirt mounds). Therefore, we will use 2,826.5 ac of indigo snake habitat as a surrogate for the indigo snakes taken. The incidental take is expected to be in the form of injury, mortality, or harassment incidental to Project construction and off-site preserve management.

The Service finds that no more than 2,826.5 ac of indigo snake habitat will be incidentally taken as a result of the proposed action. Also, because evidence of mortality is not expected, no more than 5 dead indigo snakes should be found during Project construction. If, during the course of this action, this level of take is exceeded, such take would represent new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately reinitiate consultation with the Service.

EFFECT OF THE TAKE

In the accompanying Biological Opinion, the Service determined this level of anticipated take is not likely to result in jeopardy to the panther, FBB, or indigo snake. Critical habitat has not been designated for these species and will not be affected.

REASONABLE AND PRUDENT MEASURES

When providing an incidental take statement, the Service is required to give reasonable and prudent measures it considers necessary or appropriate to minimize the take along with terms and conditions that must be complied with, to implement the reasonable and prudent measures. The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize effects of the Ave Maria Project on the Florida panther, FBB, and indigo snake:

- Implementation of the Project as proposed and outlined in the "Description of the Proposed Action" section of this Biological Opinion.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which carry out the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. Require implementation of the Service's 2013 *Standard Protection Precautions for the Eastern Indigo Snake*, including post-construction reporting.

2. Within 60 days of Corps permit issuance, require that the conservation easement amendment for the 179.3-ac portion of SSA6 shall be recorded. A certified copy of the recorded easement shall be forwarded to the Corps within 60 days of recording.

3. Prior to the removal of trees containing potential FBB roosts, require the Applicant (using a professional environmental consultant with FBB experience) to visually inspect (peep) the two trees where prior acoustical monitoring had documented FBB calls within 1.5 hours of sunset. If peeping is not successful in visually inspecting all cavity contents, the Applicant shall conduct the standard 4-day acoustic survey of such trees in accordance with FWS guidelines to confirm presence/absence of roosting FBBs. The Applicant will provide a written report of the survey dates, personnel, equipment, and survey results to the U.S. Fish and Wildlife Service, 1339 20th Street, Vero Beach, FL 32960, (verobeach@fws.gov) prior to tree removal. Consultation with the Service shall be re-initiated if results reveal the presence of roosting FBBs.

4. Require the Applicant to conduct a caracara nesting season survey in advance of construction in habitats containing cabbage palms of suitable height and landscape placement as to potentially support caracara nesting. The survey methodology shall be developed in coordination with Service caracara specialist(s). Results of the survey shall be conveyed to the South Florida Ecological Services Field Office in advance of construction proposed in the noted habitats. Consultation with the Service shall be re-initiated if an active caracara nest is identified on site by such survey.

5. Require the Applicant to notify the South Florida Ecological Services Office (verobeach@fws.gov) via e-mail at least 30 days prior to any clearing or land alteration activities that the Plan will be implemented as described in the "Description of the Proposed Action" section of this Biological Opinion.

MONITORING AND REPORTING REQUIREMENTS

Pursuant to 50 Code of Federal Regulations 402.14(i)(3), the Corps and the Applicant must provide adequate monitoring and reporting to determine if the amount or extent of take is approached or exceeded. To satisfy one reporting requirement for this Project, the Corps will provide a copy of the final permit to the Service upon issuance. The final permit shall be specifically conditioned to include the Terms and Conditions listed in this BO, and the reporting requirements specified in the Terms and Conditions, for the caracara, indigo snake and FBB.

DISPOSITION OF DEAD OR INJURED SPECIMENS

Upon locating a dead, injured, or sick threatened or endangered species specimen, initial notification shall be made to the Service's Office of Law Enforcement (Groveland, Florida; 352-429-1037). Additional notification shall be made to the Florida Fish and Wildlife Conservation Commission at 1-888-404-3922 and the Service's South Florida Ecological Services Office (1339 20th Street, Vero Beach, Florida 32960-3559; 772-562-3909). Care should be taken in handling sick or injured specimens to ensure effective treatment and in the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure evidence intrinsic to the specimen is not unnecessarily disturbed.

CONSERVATION RECOMMENDATIONS

Section 7(a)(l) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help carry out recovery plans, or to develop information. The Service recommends the following:

The Corps should continue to closely coordinate with us on the implementation of their Federal Clean Water Act section 404 permit program in areas where panthers, FBBs, or indigo snakes may be affected, so that, where applicable, compensation can be designed in such a manner that it provides benefits to these species.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification if the conservation recommendation is carried out.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the Project consultation request. As written in 50 CFR 402.16, re-initiation of formal consultation is required where discretionary Corps involvement or control over the action has been retained (or is authorized by law) and if:

(1) the amount or extent of incidental take allowed under this Biological Opinion (2,817.1 ac of panther habitat; 2,826.5 ac of FBB habitat; 2,826.5 ac of indigo snake habitat or 5 observed dead indigo snakes) is exceeded;
(2) new information reveals effects of the Corps' action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion (*e.g.*, an FBB roost is documented on the Project site or a panther den site is documented on or near the Project site);
(3) the Corps' action is later modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or
(4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease until re-initiation.

Thank you for your cooperation and effort in protecting federally listed species and fish and wildlife resources. If you have questions regarding this Project, please contact Dennis Hamlin at (772) 469-4225 in our Vero Beach office.

Sincerely yours,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services Office

Enclosures

cc: Electronic Only
Corps, Ft. Myers, Florida (Robert Tewis)
FWC, Naples, Florida (Darrell Land)
FWC, Tallahassee, Florida (FWC-CPS)
Pavese Law, Ft. Myers, Florida (Kate English)
Peninsula Engineering, Naples, Florida (Bruce Layman, John English)
Peninsula Improvement Corporation, Naples, Florida (David Genson)
Service, Naples, Florida (Dave Shindle)
Service, Florida Panther NWR, Naples, Florida (Kevin Godsea)

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Table 1. Development parameters for the Ave Maria University Development of Regional Impact in the town of Ave Maria, Collier County, Florida. The current analysis is for approximately 70 percent of the final totals listed below, including all Phase-2 and uncompleted portions of Phase-1 development.

Land Use Description	Measurement Units	Phase-1 Sub Total	Phase-2 Sub Total	Final Total
Residential	Dwelling Units	6,010	4,990	11,000
Assisted Living Facilities	Beds	0	450	450
Retail, Entertainment, Service	Square Feet	367,900	332,100	690,000
Professional Office (General/Medical/Financial, etc.)	Square Feet	276,600	233,400	510,000
Civic/Community/Miscellaneous[1]	Square Feet	115,500	33,000	148,500
Medical Facilities	Square Feet	15,000	20,000	35,000
Hotel	Rooms	110	290	400
University	Students	3,150	2,850	6,000
K-12 Schools (Private and Public)	Students	1,120	1,980	3,100

[1] Civic, Community & Miscellaneous includes churches, day care centers, health/fitness centers, and libraries.

Table 2a. Florida panther habitat units provided by the 2,200.5 acres of previously authorized activities for the Ave Maria DRI project (using the 2003 habitat values and landscape multipliers used in the 2006 biological opinion).

Land Cover Types	2003 Habitat Values	Primary Zone (1.0 Multiplier)		Secondary Zone (0.667 Multiplier)	
		Acres	PHUs Provided	Acres	PHUs Provided
Water/Urban	0	6.0	0.0	10.4	0.0
Exotic Plants	3	56.5	169.5	65.6	196.8
Cropland	4	784.5	3,138.0	786.1	3,144.4
Shrub Swamp	5	18.2	91.0	0.0	0.0
Shrub and Brush	5	0.0	0.0	9.5	47.5
Dry Prairie	6	0.0	0.0	22.5	135.0
Grassland/Pasture	7	37.5	262.5	280.7	1,964.9
Freshwater Marsh	9	25.5	229.5	52.9	476.1
Hardwood-Pine Forest	9	0.0	0.0	1.4	12.6
Cypress Swamp	9	5.0	45.0	2.3	20.7
Pine Forest	9	5.8	52.2	30.1	270.9
Totals		**939.0**	**3,987.7**	**1,261.5**	**6,268.9**

Recommended compensation for completed Primary Zone impacts:

3,987.7 PHUs x 2.5 (Base Ratio) x 1.0 (Landscape Multiplier) = 9,969.3 PHUs

Recommended compensation for completed Secondary Zone impacts:

6,268.9 PHUs x 2.5 (Base Ratio) x 0.667 (Landscape Multiplier) = 10,453.4 PHUs

Total recommended compensation for completed project impacts: **20,422.7 PHUs**

Table 2b. Florida panther habitat units provided by SSA lands applied as compensation to off-set habitat loss from completed Ave Maria DRI project elements (using 2003 habitat values and landscape multipliers from the 2006 biological opinion).

Land Cover Types	2003 Habitat Values	SSA1 & SSA2 Primary Zone		SSA3 & SSA4 Primary Zone		SSA6 Primary Zone	
		Acres	PHUs Provided	Acres	PHUs Provided	Acres	PHUs Provided
Water/Urban	0	0.0	0.0	0.0	0.0	0.0	0.0
Exotics	3	0.0	0.0	0.0	0.0	0.0	0.0
Cropland	4	0.3	1.1	710.0	2,840.0	498.5	1,994.0
Shrub Swamp	5	0.9	4.5	222.0	1,110.0	16.4	82.0
Shrub and Brush	5	9.0	44.8	44.0	220.0	0.0	0.0
Dry Prairie	6	0.0	0.0	133.0	798.0	0.0	0.0
Grassland/Pasture	7	0.1	0.6	779.0	5,453.0	130.6	914.2
Freshwater Marsh	9	325.5	2,929.8	1,286.0	11,574.0	3.4	30.6
Hardwood Swamp	9	47.6	428.3	0.0	0.0	0.0	0.0
Cypress Swamp	9	361.4	3,252.2	256.0	2,304.0	319.1	2,871.9
Hardwood-Pine Forest	9	81.4	733.0	135.0	1,215.0	296.1	2,664.9
Pine Forest	9	24.4	220.0	133.0	1,197.0	213.0	1,917.0
Hardwood Forest	10	0.0	0.0	88.0	880.0	0.0	0.0
Hardwood Forest Applied [1]	10			43.5	435.0		
Totals		**850.6**	**7,614.3**	**3,786.0**	**27,591.0**	**1,477.1**	**10,474.6**

[1] 43.5 ac applied as compensation for completed project activities (of the total 88 ac of hardwood forest habitat present in SSA3 and SSA4).

Gray shading indicates **20,423.0** PHUs applied to off-set completed activities.

Table 3a. Florida panther habitat units provided by the 2,826.5 acres of proposed Ave Maria DRI project activities (using current [2009] habitat values and landscape multipliers).

Land Cover Types	2009 Habitat Values	Primary Zone (1.0 Multiplier)		Secondary Zone (0.69 Multiplier)	
		Acres	PHUs Provided	Acres	PHUs Provided
Water/Urban	0	8.6	0.0	0.8	0.0
Exotic Plants	3	20.0	60.0	28.0	84.0
Cropland	4.8	1,138.5	5,464.8	1,201.7	5,768.2
Shrub Swamp	5.5	2.6	14.3	0.0	0.0
Shrub and Brush	5.5	0.0	0.0	25.6	140.8
Dry Prairie	6.3	0.0	0.0	44.3	279.1
Grassland/Pasture	5.2	0.0	0.0	308.3	1,603.2
Freshwater Marsh	4.7	4.6	21.6	16.1	75.7
Hardwood-Pine Forest	9.3	3.0	27.9	4.2	39.1
Cypress Swamp	9.2	2.2	20.2	3.9	35.9
Pine Forest	9.5	6.2	58.9	7.9	75.1
Totals		**1,185.7**	**5,667.8**	**1,640.8**	**8,100.9**

Recommended compensation for completed Primary Zone impacts:

5,667.8 PHUs x 2.5 (Base Ratio) x 1.0 (Landscape Multiplier) = 14,169.5 PHUs

Recommended compensation for completed Secondary Zone impacts:

8,100.9 PHUs x 2.5 (Base Ratio) x 0.69 (Landscape Multiplier) = 13,974.0 PHUs

Total recommended compensation for completed project impacts: **28,143.5 PHUs**

Table 3b. Florida panther habitat units provided by 179.3-acre expansion of SSA6.

Land Cover Types	2009 Habitat Values	Primary Zone (1.0 Multiplier)	
		Acres	PHUs Provided
Water/Urban	0	0	0
Exotics	3	0	0
Shrub Swamp	5.5	1.8	9.9
Shrub and Brush	5.5	0	0
Dry Prairie	6.3	0	0
Grassland/Pasture	5.2	0	0
Freshwater Marsh	4.7	8.9	41.8
Hardwood Swamp	9.2	0	0
Cypress Swamp	9.2	76.1	700.1
Hardwood-Pine Forest	9.3	37.2	346.0
Pine Forest	9.5	55.3	525.4
Hardwood Forest	9	0	0
Totals		**179.3**	**1,623.2**

Table 3c. Florida panther habitat units provided by SSA lands applied as compensation to off-set habitat loss from proposed Ave Maria DRI impacts (using current [2009] habitat values).

Land Cover Types	2009 Habitat Values	SSA1 & SSA2 Primary Zone		SSA3 & SSA4 Primary Zone	
		Acres	PHUs Provided	Acres	PHUs Provided
Water/Urban	0	0.0	0.0	0.0	0.0
Exotics	3	0.0	0.0	0.0	0.0
Exotics (applied) [2]					
Cropland	4.8	0.3	1.3	710.0	3,408.0
Shrub Swamp	5.5	0.9	4.9	222.0	1,221.0
Shrub and Brush	5.5	9.0	49.2	44.0	242.0
Dry Prairie	6.3	0.0	0.0	133.0	837.9
Grassland/Pasture	5.2	0.1	0.6	779.0	4,050.8
Grassland/Pasture (applied) [2]	5.2				
Freshwater Marsh	4.7	325.5	1,529.8	1,286.0	6,044.2
Hardwood Swamp	9.2	47.6	437.8	0.0	0.0
Cypress Swamp	9.2	361.4	3,324.4	256.0	2355.2
Hardwood-Pine Forest	9.3	81.4	757.4	135.0	1,255.5
Pine Forest	9.5	24.4	232.2	133.0	1,263.5
Hardwood Forest	9	0.0	0.0	88.0	792.0
Hardwood Forest (applied) [3]	9			44.5	400.5
Totals		**850.6**	**6,337.6**	**3,786.0**	**21,470.1**

[1] Total SSA 6 preserved land includes a 179.3-ac expansion to the original 1,477.1-ac SSA6 (to account for a deficit of 1623.2 PHUs realized when the habitat value of acreage within existing conservation easements not applied towards completed activities are calculated using current habitat values).

[2] Grassland/Pasture acreage was restored from exotics and receives a PHU value equal to half the uplift: = (679.1 + 391.8) / 2 = 535.5 PHUs

[3] 44.5 ac applied as compensation for proposed project activities (of the total 88 ac of hardwood forest habitat present in SSA3 and SSA4).

Gray shading indicates **28,145.4** PHUs applied to off-set proposed project impacts. **Table 4.** Targeted and acquired acreage totals of conservation lands in South Florida directly affecting the panther within the consultation area.

	Targeted Acreage [1]	Acquired Acreage	Indian Reservation
Federal Conservation Lands			
Everglades National Park	1,508,976	1,508,976	--
Big Cypress National Preserve	720,564	720,564	--
Florida Panther National Wildlife Refuge	26,605	26,605	--
Subtotal	**2,256,145**	**2,256,145**	--
State of Florida: Florida Forever Program			
Fisheating Creek Ecosystem	183,925	68,278	--
Devil's Garden	82,995	11,656	--
Corkscrew Regional Ecosystem Watershed	67,907	32,271	--
Panther Glades	64,810	25,426	--
Belle Meade	27,786	20,628	--
Caloosahatchee Ecoscape	18,455	7,744	--
Twelvemile Slough	15,968	7,840	--
Half Circle L Ranch	11,182	0	--
Hall Ranch	8,519	1,002	--
Subtotal	**481,547**	**174,845** [2]	--
State of Florida: Other State Acquisitions			
Everglades and Francis S. Taylor WMA	671,831	671,831	--
Babcock-Webb Wildlife Management Area	81,441	81,441	--
Picayune Strand State Forest	81,027	81,027	--
Fakahatchee Strand State Preserve	77,854	77,854	--
Okaloacoochee Slough State Forest and WMA	35,293	35,293	--
Holey Land Wildlife Management Area	33,350	33,350	--
Rotenberger Wildlife Management Area	29,700	29,700	--
Other State Managed Lands	208,983	208,983	--
Subtotal	**1,219,479**	**1,219,479**	--
Private and Local			
Babcock Ranch Preserve	91,361	67,619	--
Corkscrew Swamp Sanctuary	13,440	13,440	--
Private Preserves and Permanent Easements	66,815	66,815	--
Local Preserves	33,182	33,182	--
Subtotal	**204,798**	**181,056**	--
Indian Reservations [3]			
Miccosukee Indian Reservation	--	--	82,017
Big Cypress Seminole Indian Reservation	--	--	52.461
Brighton Seminole Indian Reservation	--	--	37,065
Subtotal	--	--	**171,543**
GRAND TOTALS	**3,987,124** [2]	**3,656,680** [2]	**171,543**

[1] Targeted acres not available for all lands. In cases, targeted equals acquired acreage.
[2] Florida Forever acquisitions not included in totals; acreage is transferred to other entities within table.
[3] Indian lands are included due to their mention in the MSRP. Acreages taken from GIS data.
Source: Florida Natural Areas Inventory; Florida Department of Environmental Protection

Table 5. Vehicle-related panther deaths within the Ave Maria project action area as of August 1, 2018 (n = 240).

Panther ID	Location	Date	Sex
UCFP004	SR 29 just N SR 84 (now I-75)	12/23/1979	Female
UCFP005	SR 29 near Sunniland	2/7/1980	Male
UCFP006	SR 29 near Copeland	4/19/1981	Female
FP001	SR 84 (now I-75)	12/14/1983	Male
UCFP012	SR 84 (now I-75)	11/12/1984	Female
UCFP013	SR 84 (now I-75)	1/8/1985	Female
FP004	SR 84 (now I-75)	4/18/1985	Male
FP007	SR 29, 4 mi S of SR 84 (now I-75)	10/26/1985	Male
UCFP015	SR 84 (now I-75)	11/15/1986	Female
FP013	SR 29 Sunniland	12/14/1987	Male
UCFP018	CR 850, 1.5 mi S of SR 82	1/25/1989	Male
FP037	SR 29, 0.5 mi N of I-75	11/26/1990	Male
UCFP020	SR 29, at Pistol Pond	2/4/1991	Female
UCFP021	SR 29, Sunniland	11/9/1992	Female
UCFP022	Daniels Rd, 1 mi E of I-75	8/9/1993	Male
FP050	CR 846, 5 mi E of Immokalee	12/6/1993	Male
UCFP023	County Line Road, 3 mi N of CR 858	2/28/1994	Male
FP031	SR 29 Sunniland	3/3/1994	Female
FP052	CR 846 near Dupree Road	1/14/1995	Female
UCFP029	CR 832, 5.5 mi E of SR 29	4/24/1996	Male
UCFP031	CR 846, 1.5 mi W of CR 858	7/13/1997	Unknown
UCFP025	CR 846, 3 mi E of CR 858	6/13/1998	Female
FP051	SR 29, Bear Island Grade	7/17/1998	Male
UCFP027	Farm Road E of Hendry Prison	7/8/1999	Female
UCFP33	CR 833, 2 mi N of BCSIR	10/29/1999	Male
FP063	SR 29, N of Pistol Pond	1/15/2000	Male
FP080	W Boundary Road, BCSIR	2/10/2000	Female
K076	CR 858, 1 mi W of SR 29	2/28/2000	Male
UCFP034	CR 846, 2 mi E of Collier/Hendry line	3/23/2000	Male
UCFP035	CR 846, 2 mi E of Immokalee	6/23/2000	Male
UCFP036	CR 846, near big powerline	8/13/2000	Female
UCFP037	CR 846, 4.5 mi E of SR 29	12/29/2000	Female
UCFP040	SR 29, 0.5 mi N of Jerome	5/7/2001	Male
UCFP039	SR 29, 0.5 mi N of Jerome	5/7/2001	Female
UCFP041	SR 29, Sunniland, near mine entrance	5/22/2001	Male
UCFP042	CR 846, 1 mi E of big powerline	6/14/2001	Female
UCFP043	CR 846, 1 mi E of big powerline	8/17/2001	Male
UCFP046	SR 29, 0.5 mi N of Deep Lake	4/10/2002	Male
FP098	SR 29, 0.6 N of Pistol Pond	7/1/2002	Male

Panther ID	Location	Date	Sex
UCFP048	CR 846, 5 mi E of Immokalee	11/10/2002	Female
K098	CR 846, 3 mi E of Immokalee	11/25/2002	Female
FP099	CR 846, 0.3 mi N of Collier fairgrounds	11/28/2002	Male
K033	CR 846, 3.4 mi E of Everglades Blvd.	1/26/2003	Male
FP106	SR 29, entrance to Sunniland Mine	2/20/2003	Female
UCFP052	CR 833, 2 mi S of CR 832, Hendry Co.	3/20/2003	Male
UCFP053	SR 29, 1.4 mi N of CR 858, Collier Co.	5/25/2003	Female
UCFP054	SR 29, 1.7 mi N of CR 858, Collier Co.	6/3/2003	Male
UCFP058	CR 846, 0.8 mi E of Everglades Blvd.	6/30/2003	Female
UCFP059	CR 858, 1.2 mi W of SR 29	11/2/2003	Male
UCFP060	US 41, 1 mi E of CR 92	12/9/2003	Male
UCFP061	CR 833, 1.7 mi N of CR 846 intersection	12/25/2003	Female
UCFP063	I-75 eastbound, near MM 99	2/26/2004	Male
UCFP065	SR 29, 200 yds. N of Bear Island Grade	4/6/2004	Male
UCFP066	I-75, MM 93, 0.5 mi W of Everglades Blvd.	6/27/2004	Male
K094	I-75, near MM 98, Eastbound lane	8/17/2004	Male
UCFP69	SR 29 2.5 mi N of CR 858	10/25/2004	Female
UCFP070	SR 29, Owl Hammock Curve	12/1/2004	Female
K128	CR 832, 1 mi E of RR grade	12/6/2004	Male
UCFP072	SR 29, near Jerome	2/25/2005	Male
UCFP073	CR 951, S of Rattlesnake Hammock Road	4/7/2005	Male
UCFP075	SR 29, Owl Hammock Curve	6/19/2005	Male
K153	CR951, 1.2 mi S of Davis Blvd.	8/29/2005	Male
UCFP076	US 41, 1.4 mi E of CR 951	9/18/2005	Male
K049	SR 29,1 mi N of Wagon Wheel Road	12/2/2005	Female
UCFP078	CR 846, 1 mi W of CR 858	1/25/2006	Male
UCFP079	CR 846, 2 mi N of CR 858	1/26/2006	Female
UCFP085	CR 832, 3 mi E of OSSF SF	6/5/2006	Male
UCFP086	SR 29, 0.6 mi S of Sunniland	7/6/2006	Unknown
UCFP087	Corkscrew Rd. near Alico	8/24/2006	Male
UCFP088	US 41, between Manatee Rd and CR951	11/26/2006	Female
UCFP089	County Line Road, Collier/Hendry	12/12/2006	Male
UCFP090	CR 832, 1 mi W of Forestry tower	1/24/2007	Female
UCFP091	CR 832, W of Keri tower, OSSF	3/9/2007	Male
UCFP093	I-75, 0.5 mi N Corkscrew Road	3/30/2007	Male
UCFP094	I-75, 2 mi E of MM 98 toll booth	4/3/2007	Male
UCFP097	Corkscrew Road, near Alico	5/14/2007	Female
UCFP098	SR 29, at Jerome wildlife crossing	6/11/2007	Male
UCFP099	SR 82, 0.7 mi W of Sunshine Blvd	6/14/2007	Male
UCFP100	SR 29, 3 mi S of Immokalee	6/23/2007	Male
K199	CR 832, 0.6 mi W of Forestry tower	6/23/2007	Female

Panther ID	Location	Date	Sex
UCFP102	I-75, 1.5 mi E of SR 29	9/12/2007	Male
UCFP103	Pine Ridge Rd, between CR 951 & Logan Blvd	3/9/2008	Male
UCFP106	Leonard Boulevard, Lehigh Acres	5/4/2008	Male
UCFP107	CR 951, 1.5 mi S of US	5/22/2008	Female
UCFP108	CR 846, 1.7 mi E of Oil Grade Rd	7/28/2008	Female
UCFP111	SR 29, 1.5 mi N of Oil Well Road	10/24/2008	Female
UCFP113	Alico Road, Lee County	11/26/2008	Male
UCFP114	CR 858, 1 mi E of Camp Keais Rd	11/28/2008	Female
UCFP115	CR 832, E of OSSF	1/11/2009	Male
K253	I-75, eastbound exit ramp for SR 29	1/17/2009	Male
UCFP116	SR 29, 3 mi S of Immokalee	1/20/2009	Female
UCFP118	Treeline Ave, Lee County	3/25/2009	Male
UCFP121	SR 29, ~4 mi S of I-75	5/14/2009	Male
UCFP122	CR 846, near Camp Kaeis Rd	5/25/2009	Male
UCFP124	I-75, 90mm	8/5/2009	Male
UCFP125	I-75, 96.5mm	9/6/2009	Female
UCFP126	E of Ave Maria, Ranch 1 Orange Gr.	9/15/2009	Male
UCFP129	CR 846, 2 mi E of Immokalee	10/19/2009	Male
UCFP130	CR 846, 2 mi E of Immokalee	10/21/2009	Female
UCFP134	Corkscrew Road, near CREW Gate 5	12/23/2009	Male
UCFP135	SR 29, 2 mi N of Jerome	12/29/2009	Female
UCFP136	County Barn Rd, 0.3 mi S of Davis Blvd	12/31/2009	Female
UCFP139	Corkscrew Rd, CREW Marsh Trailhead 1	3/12/2010	Female
FP174	I-75 eastbound, near MM 95,	3/16/2010	Male
UCFP140	I-75, near MM 117	4/15/2010	Male
UCFP141	Church Road, near Hendry Co landfill	4/29/2010	Female
UCFP142	Golden Gate Blvd., between 5th and 7th St NW	5/4/2010	Female
FP158	US 41, 0.6 mi E of SR92	5/22/2010	Female
UCFP143	US 41, 1.4 mi E of CR951	5/23/2010	Male
UCFP145	SR 29, 2.3 mi S of Farm Workers Village	6/24/2010	Male
UCFP146	SR 29, 1 mi S of Owl Hammock	8/3/2010	Female
FP176	CR 832, OSSF	11/17/2010	Male
UCFP149	Golden Gate Blvd., 7th ST NW	12/13/2010	Male
UCFP150	CR 846, 1.5 mi S of CR 833	12/19/2010	Male
K284	SR 29, S of Sears Rd	1/7/2011	Male
UCFP152	I-75 eastbound, near MM 98	1/13/2011	Female
UCFP153	I-75 westbound, near MM 98	1/21/2011	Male
UCFP156	I-75, near MM 114	2/26/2011	Male
FP83	US 41, W of Port of the Islands	3/25/2011	Female
UCFP159	SR 29, near Farmworkers Village	3/25/2011	Female

Panther ID	Location	Date	Sex
UCFP162	SR 29, Owl Hammock Curve	7/11/2011	Male
UCFP164	SR 29, Owl Hammock Curve	9/19/2011	Female
UCFP165	SR 29, 2.0 mi N of SR82	10/30/2011	Female
UCFP166	SR 82, 2.4 mi W of SR 29	1/2/2012	Male
UCFP167	US 41, 0.3 mi W of Manatee Rd	1/7/2012	Female
UCFP169	Orange grove N of Church Rd., Hendry County	4/7/2012	Male
UCFP170	Alico Rd, 0.1 mi W of Airport Haul Rd	4/16/2012	Male
UCFP172	SR 82, E of Church Rd., Lee County	5/26/2012	Male
UCFP173	CR 846, 1.5 mi E of Oil Well Grade Rd	6/19/2012	Female
FP196	US 41, 0.9 mi E of San Marco Rd	10/6/2012	Female
UCFP176	Immokalee Rd, 2 mi N of fairgrounds	10/9/2012	Female
UCFP177	18th Ave NE, Golden Gate Estates	11/4/2012	Female
UCFP178	SR 29, 1.5 mi S of I-75	11/14/2012	Female
UCFP180	US 41, 0.5 mi W of Manatee Road	11/19/2012	Male
UCFP179	SR 29, Owl Hammock Curve	11/19/2012	Male
UCFP181	Immokalee Rd, 3.6 mi N of Oil Well Rd	11/26/2012	Female
UCFP184	CR 833, 2 mi E CR 846	1/1/2013	Female
UCFP185	SR 29, 0.1 mi S Oil Well Rd	1/3/2013	Male
UCFP189	Everglades Blvd S, Golden Gate Estates	2/20/2013	Female
UCFP192	CR 846, 2.3 mi W of County Line Rd	4/28/2013	Female
UCFP195	CR 846, 5 mi E of County Line Rd	7/8/2013	Male
UCFP196	I-75, near MM 96.5	7/15/2013	Male
UCFP198	I-75, MM 93 on Miller Canal Bridge	8/19/2013	Female
UCFP199	CR 951, 0.6 mi S of Rattlesnake Hammock Rd	9/20/2013	Male
UCFP201	I-75 northbound, MM 92, W of Faka Union	12/2/2013	Male
UCFP203	I-75 near MM 111	1/2/2014	Male
UCFP204	SR 29, Owl Hammock Curve	1/22/2014	Male
UCFP207	CR 833, 0.2 mi E of CR 846	3/8/2014	Male
UCFP209	CR 833, just S of CR 832	4/3/2014	Male
UCFP210	CR 846, 6 mi E of Immokalee	4/8/2014	Male
FP163	County Line Rd, 2.8 mi S of CR846	4/25/2014	Male
UCFP214	Oil Well Rd, 1.1 mi E of Camp Keais Rd	5/16/2014	Male
K390	US41, SE of Collier Seminole SP	6/12/2014	Female
UCFP216	Corkscrew Rd, near CREW gate 5	6/25/2014	Female
UCFP219	Immokalee Rd, 2.3 mi E of CR 951	8/24/2014	Female
UCFP218	Immokalee Rd, 2.3 mi E of CR 951	8/24/2014	Female
UCFP223	County Line Road, just S of CR 846	11/13/2014	Female
UCFP224	Golden Gate Blvd/6th St NE	11/28/2014	Male
UCFP226	Collier Blvd, 1.5 mi S of US 41	12/18/2014	Male
UCFP228	Golden Gate Blvd/10th St NE	12/28/2014	Male
UCFP229	16th ST SE, Golden Gate Estates	12/30/2014	Female

Panther ID	Location	Date	Sex
UCFP230	I-75, 0.5 mi E of west toll booth	1/16/2015	Female
UCFP231	Immokalee Rd, 0.2 mi S of Bethune d	1/20/2015	Female
UCFP233	MM95, I75, Collier County	1/25/2015	Male
UCFP236	CR 846, 0.5 mi S of CR 833 intersection	2/15/2015	Male
FP183	SR 29, 2.75 mi S of I-75	2/25/2015	Male
K402	I-75, 0.5 mi S of Exit 123, Corkscrew Road	3/7/2015	Male
UCFP237	CR951, 0.2 mi N of Port au Prince Rd.	3/8/2015	Male
UCFP239	I75, 1.1 mi E of tollbooth, Collier Co.	4/3/2015	Male
UCFP240	SR 29, 1.3 mi N of CR 858	4/13/2015	Female
UCFP241	I-75, 0.5 mi S of Exit 123, Corkscrew Road	4/30/2015	Male
UCFP242	CR833, 0.25 mi S of CR832	5/19/2015	Female
UCFP244	Immokalee Rd., 0.4 mi S of Wild Turkey Dr.	7/5/2015	Male
UCFP245	Daniels Pkwy, 1.3 mi SW of SR 82	7/8/2015	Male
UCFP248	Golden Gate Blvd, 1.0 mi W of Everglades	7/30/2015	Female
FP219	I-75, just W of exit 101	9/18/2015	Female
UCFP249	CR 858. 0.3 mi W of County Line Rd	9/22/2015	Male
K432	I-75, near MM 102	9/30/2015	Female
UCFP251	US 41, W of CR 92	10/8/2015	Female
FP222	I75, near MM 90.	10/23/2015	Female
UCFP254	CR 846, just W Everglades Blvd.	11/23/2015	Male
UCFP255	CR 832, OSSF	12/8/2015	Female
UCFP256	Corkscrew Rd, 1.3 mi S of SR 82.	12/15/2015	Female
UCFP258	SR 29, Owl Hammock Curve.	12/21/2015	Male
UCFP259	CR 832, 3 mi W of CR 833.	12/30/2015	Female
UCFP262	Daniel's Parkway, 0.5 mi E of Treeline Ave.	1/20/2016	Female
UCFP264	SR 82, 0.9 mi W of Church Rd	1/30/2016	Female
UCFP266	SR 82, near Sparta Avenue	2/12/2016	Female
UCFP267	SR 82, just E of Hendry Co line,	2/15/2016	Unknown
UCFP268	SR 82, 1.25 mi E of Corkscrew Rd	2/17/2016	Male
UCFP272	Golden Gate Blvd, 0.3 mi E of Collier Blvd	3/25/2016	Male
UCFP273	I-75, near MM 96	4/1/2016	Unknown
UCFP275	Immokalee Rd, 2.6 mi E of CR 951	4/6/2016	Male
UCFP276	I-75, 0.6 mi S of Bonita Beach Rd	4/9/2016	Male
UCFP277	Golden Gate Blvd, 1.0 mi W of Everglades	4/10/2016	Male
UCFP278	Randall Blvd, just E of 16th St. NE	4/15/2016	Male
UCFP279	I-75, southbound at MM 122	4/26/2016	Female
UCFP280	CR833, 0.4 mi N of CR 835	4/26/2016	Male
K403	Daniels Pkwy, 0.6 mi E of Paul J. Doherty Pkwy	5/26/2016	Female
UCFP284	Oil Well Rd, at Camp Keais Rd.	6/16/2016	Female
UCFP285	SR 82, 0.5 mi W of Church Rd	8/5/2016	Female
FP171	SR 29, 3.2 mi N of I-75	8/14/2016	Male

Panther ID	Location	Date	Sex
K421	SR 29, 0.1 mi S of Experimental Station Rd	10/2/2016	Male
UCFP288	Daniels Parkway, 1.8 mi SW of SR 82	10/28/2016	Male
UCFP289	Golden Gate Blvd, 0.6 mi W of Everglades	10/31/2016	Female
UCFP290	SR 29, 2.3 mi S of CR 858	11/16/2016	Female
UCFP291	CR 832 2.0 mi E of SR 29	11/20/2016	Female
UCFP 292	SR 29, 2 mi N of CR 858	12/7/2016	Female
UCFP 293	Paul J. Doherty Pkwy, 0.1 mi S of Daniels Pkwy	12/8/2016	Female
UCFP294	Corkscrew Rd just E of Ben Hill Griffin Pkwy	12/9/2016	Female
UCFP295	Ben Hill Griffin Pkwy at FGCU	12/10/2016	Female
UCFP296	CR 832, 5 mi W of CR 833	1/12/2017	Male
UCFP300	SR 82, 0.5 mi E of CR 850	2/27/2017	Male
UCFP302	SR 82, 1.7 mi W of CR 850	3/4/2017	Female
UCFP303	SR 82, 1.5 mi E of CR 850	3/9/2017	Unknown
UCFP304	CR 846, 2 mi E of Immokalee	3/14/2017	Female
UCFP307	CR 846, 2.6 mi W of County Line Rd	4/20/2017	Female
UCFP308	CR 832, 5 mi. E of OSSF	5/8/2017	Female
UCFP310	CR 846, 2.1 mi E of County Line Rd	6/16/2017	Male
FP248	CR 850, 0.3 mi S of SR 82	5/11/2017	Female
UCFP311	Immokalee Rd, 2 mi E of CR 951	7/3/2017	Male
UCFP312	Collier Blvd, 0.6 mi N of I-75	7/18/2017	Female
FP234	I-75, near MM 54	8/13/2017	Male
UCFP315	CR 846, 9 mi E of County Line Rd	8/24/2017	Female
K4111	Immokalee Rd, 0.1 mi S of Wild Turkey Dr	11/7/2017	Male
UCFP318	CR 833, 1 mi S of Hill Grade	11/13/2017	Male
FP249	CR 833, 2.3 mi S of CR 835	11/20/2017	Male
UCFP319	Daniels Parkway, 2.0 mi SW of SR 82	11/23/2017	Male
UCFP320	Desoto Blvd, 0.2 mi S of 24th Ave SE in GGE	12/9/2017	Male
PC1144	I-75, 0.8 mi W of CR 951	1/7/2018	Female
UCFP323	Immokalee Rd, 2.3 mi E of CR 951	1/13/2018	Male
UCFP327	CR 846, 0.4 mi S of Stockade Rd	2/5/2018	Male
UCFP328	CR 846, 2.5 mi W of Camp Keais Rd	2/19/2018	Female
UCFP330	SR 29, in Jerome	2/28/2018	Female
UCFP331	CR 846, 2.5 mi W of County Line Rd	2/28/2018	Female
UCFP332	SR 82, 0.2 mi W of Corkscrew Rd	4/3/2018	Female
UCFP333	I-75, 2.5 km E of SR 29	5/21/2018	Male
UCFP335	SR29, 2.3 mi S of CR858	6/25/2018	Male
K430	Stewart Blvd, 0.1 mi W of Miller Canal, PSSF	7/21/2108	Male
FP252	Golden Gate Blvd near 17th St SW	8/1/2018	Male

Table 6. Estimated Ave Maria project-generated traffic for 36 road segments at buildout. Highlighted road segments were used in analyses of risk for vehicle-related panther deaths.

Segment	Road	Limits	FSUTMS PSWT Volumes [1]					
			Total Traffic (100s)			Daily Project Traffic		
			V1	V2	V avg.	V1	V2	V avg.
	Camp Keais Rd	Oil Well Rd. to Ave Maria Entrance			182			17,640
	Camp Keais Rd	Ave Maria Entrance to Immokalee Rd.	307	248	278	30,130	24,450	27,290
	Collier Blvd.	Immokalee Road to Vanderbilt Beach Rd	484	436	460	8,090	8,450	8,270
	Collier Blvd.	Golden Gate Blvd to Pine Ridge Rd.	482	477	480	5,070	5,110	5,090
	Collier Blvd.	Pine Ridge Rd to Green Blvd	367	370	369	3,870	3,920	3,895
	Everglades Blvd	Oil Well Rd. to Golden Gate Blvd.	53	76	65	2,640	4,300	3,470
K	Golden Gate Blvd	Wilson Blvd. to Everglades Blvd.	153	153	153	1,850	1,850	1,850
L	I-75	SR 29 to CR 951			340			4,070
M	I-75	Immokalee Rd. to Bonita Beach Rd.	420	428	848	2,610	2,920	(5,530)
J	Immokalee Rd. (SR 82) [2]	Hendry County Line to Sunshine Blvd.	176	174	175			5,780
B	Immokalee Road	Oil Well Rd. to Everglades Blvd	222	201	212	1,850	3,030	2,440
	Immokalee Road	Everglades Blvd. to Camp Keais Rd.	220	186	203	3,970	3,420	3,695
A	Immokalee Road	Camp Keais Rd. to SR 29	359	304	332	21,030	14,310	17,670
	Immokalee Road	Oil Well Road to Wilson Blvd	559	428	494	20,950	20,950	20,950
C	Immokalee Road	Wilson Blvd. to Collier Blvd.	648	524	586	20,080	20,210	20,145
	Immokalee Road	Collier Blvd. to Oakes Blvd.	598	489	544	11,090	11,790	11,440
	Immokalee Road	Oakes Blvd. to I-75 NB	334	659	497	5,393	10,780	8,087
	Immokalee Road	I-75 NB to I-75 SB	214	345	559	2,474	5,382	7,856
	Lake Trafford Road	N. 15 th St to Lake Trafford	37	188	113	510	2,700	1,605
	Main St. (SR 29)	1st. St. (CR 846) to N 15th St	375	391	383	10,100	10,790	10,445
	Main St (SR 29)	1st. St. (CR 846) to CR 29A South	395	414	405	18,520	9,370	13,945
	Main St. (SR 29)	CR 29A South to 29/846 Split	527	525	526	11,060	11,190	11,125
	N. 15th St. (SR 29)	Main St. to Immokalee Dr.	299	276	288	8,860	8,090	8,475
	N. 15th St. (SR 29)	Immokalee Dr. to Lake Trafford Rd	319	326	323	9,160	9,060	9,110
	N. 15th St. (SR 29)	Lake Trafford Rd. to SR 29 A North	332	296	314	8,490	7,860	8,175
F	N. 15th St. (SR 29)	29A North to SR 82	367	305	336	9,160	8,410	8,785
	New Market St. (SR 29 A)	Indian River St. to Main St	133	128	131	1,700	1,980	1,840
	North 1st. St	North of Main St.	122	109	116	3,520	2,980	3,250
	Oil Well Road	AMU Entrance Road to Everglades Blvd	244	267	256	22,460	24,490	23,475
	Oil Well Road	Everglades Blvd. to Immokalee Rd	206	206	206	19,090	19,090	19,090
D	Oil Well Road	AMU Entrance Road to Camp Keais Rd.	48	48	48	3,070	3,070	3,070
E	Oil Well Road	Camp Keais Rd. to SR 29	224	223	224	20,710	20,320	20,515
	SR 29	North of SR 82			65			1,310
G	SR 29	CR 846 to Oil Well Rd.	395	209	302	9,430	10,860	10,145
H	SR 29	Oil Well Rd. to I-75	183	185	184	7,960	7,190	7,575
I	SR 82 [2]	SR 29 to Hendry County Line	226	236	231	6,810	5,780	6,295

*Table extracted and modified from Table 21-15 of WilsonMiller's 2004 Transportation Report.
CR 846 = Immokalee Road.
CR 858 = Oil Well Road.

Table 7. Predicted risk of vehicle-related panther deaths from total amount of expected project-generated traffic for 13 road segments within the Ave Maria project action area.

		Observed in Past 5 Years				Project-Generated			
Road Segment[1]		**5-Year Average AADT**	**Deaths Past 5 yrs**	**Trips per Death[2]**	**Annual Death Rate**	**Project AADT[3]**	**Annual Trips[4]**	**Annual Death Rate[4]**	**Percent Increase**
A	CR 846, Camp Keais Rd to SR 29	10,974	1	20,027,550	0.20	12,369	4,514,685	0.23	113%
B	CR 846, CR 858 to Everglades Blvd	6,870	3	4,179,250	0.60	1,708	623,420	0.15	25%
C	CR 846, Wilson Blvd to Collier Blvd	33,352	4	15,216,850	0.80	14,102	5,147,048	0.34	42%
D	CR 858, AMU Entrance to Camp Keais Rd	4,682	1	8,544,559	0.20	2,149	784,385	0.09	46%
E	CR 858, Camp Keais Rd to SR 29	4,682	1	8,544,559	0.20	14,361	5,241,583	0.61	307%
F	SR 29, 29A North to SR 82	15,658	1	28,576,580	0.20	6,150	2,244,568	0.08	39%
G	SR 29, CR 846 to CR 858	6,737	4	3,073,756	0.80	7,102	2,592,048	0.84	105%
H	SR 29, CR 858 to I-75	3,567	3	2,169,925	0.60	5,303	1,935,413	0.89	149%
I	SR 82, SR 29 to Hendry County Line	11,680	5	4,263,200	1.00	4,407	1,608,373	0.38	38%
J	SR 82, Hendry County Line to Sunshine Blvd	10.490	3	6,381,417	0.60	4,046	1,476,790	0.23	39%
K	Golden Gate Blvd, Wilson to Everglades Blvd	17,221	5	6,285,665	1.00	1,295	472,675	0.08	8%
L	I-75, SR 29 to CR 951	22,847	8	5,211,881	1.60	2,849	1,039,885	0.20	12%
M	I-75, CR 846 to Bonita Beach Rd	91,873	1	167,667,495	0.20	3,871	1,412,915	0.01	4%
	Totals		**40**		**8.00**	**79,709**	**29,093,785**	**4.12**	**52%**

[1] Road segments include those where: (1) panther deaths occurred between 2013 and 2017; and (2) project-generated traffic data and historic traffic data are available.

[2] **Trips per death** = (5-year average AADT x 1,825*) ÷ deaths in last 5 years; *1,825 = days per 5 years.

[3] **Project AADT** based on estimate that Ave Maria is 30 percent complete in 2017. Project AADT calculated as: TIS Buildout AADT x 0.70.

[4] Annual number of **project-generated trips** and **project-related annual death rate** are presented as if all project generated traffic are being added in one year.

Table 8. Predicted annual risk of vehicle-related panther deaths during the first 5 years from project-generated traffic for 13 road segments within the Ave Maria project action area.

		Observed in Past 5 Years				Project-Generated							
								Annual Death Rate					
Road Segment[1]		5-Year Average AADT	Deaths Past 5 yrs	Trips per Death[2]	Annual Death Rate	Project AADT[3]	Annual Trips[4]	Annual	Year 2	Year 3	Year 4	Year 5	5-year Total
A	CR 846, Camp Keais Rd to SR 29	10,974	1	20,027,550	0.20	618	225,734	0.011	0.02	0.03	0.05	0.06	0.17
B	CR 846, CR 858 to Everglades Blvd	6,870	3	4,179,250	0.60	85	31,171	0.007	0.01	0.02	0.03	0.04	0.11
C	CR 846, Wilson Blvd to Collier Blvd	33,352	4	15,216,850	0.80	705	257,352	0.017	0.03	0.05	0.07	0.08	0.25
D	CR 858, AMU Entrance to Camp Keais Rd	4,682	1	8,544,559	0.20	107	39,219	0.005	0.01	0.01	0.02	0.02	0.07
E	CR 858, Camp Keais Rd to SR 29	4,682	1	8,544,559	0.20	718	262,079	0.031	0.06	0.09	0.12	0.15	0.46
F	SR 29, 29A North to SR 82	15,658	1	28,576,580	0.20	307	112,228	0.004	0.01	0.01	0.02	0.02	0.06
G	SR 29, CR 846 to CR 858	6,737	4	3,073,756	0.80	355	129,602	0.042	0.08	0.13	0.17	0.21	0.63
H	SR 29, CR 858 to I-75	3,567	3	2,169,925	0.60	265	96,771	0.045	0.09	0.13	0.18	0.22	0.67
I	SR 82, SR 29 to Hendry County Line	11,680	5	4,263,200	1.00	220	80,419	0.019	0.04	0.06	0.08	0.09	0.28
J	SR 82, Hendry County Line to Sunshine Blvd	10.490	3	6,381,417	0.60	202	73,840	0.012	0.02	0.03	0.05	0.06	0.17
K	Golden Gate Blvd, Wilson to Everglades Blvd	17,221	5	6,285,665	1.00	65	23,634	0.004	0.01	0.01	0.02	0.02	0.06
L	I-75, SR 29 to CR 951	22,847	8	5,211,881	1.60	142	51,994	0.010	0.02	0.03	0.04	0.05	0.15
M	I-75, CR 846 to Bonita Beach Rd	91,873	1	167,667,495	0.20	194	70,646	0.000	0.00	0.00	0.00	0.00	0.01
	Totals		**40**		**8.00**	**3,985**	**1,454,689**	**0.206**	**0.41**	**0.62**	**0.82**	**1.03**	**3.09**

[1] Road segments include those where: (1) panther deaths occurred between 2013 and 2017; and (2) project-generated traffic data and historic traffic data are available.

[2] **Trips per death** = (5-year average AADT x 1,825*) ÷ deaths in last 5 years; *1,825 = days per 5 years.

[3] **Project AADT** based on estimate that Ave Maria is 30 percent complete in 2017 and a 20-year buildout schedule. **Project AADT** calculated as: Buildout AADT x 0.70 x 0.05.

[4] **Annual trips** = Project AADT x 365.

Table 9. Annual Average Daily Traffic for 11 representative road segments within the Ave Maria project action area from 2002 through 2017. Segments 1, 2, and 3 are in urban areas: segments 4 and 5 are adjacent to Ave Maria; segments 6, 7, 8, 9, 10, and 11 are in rural areas. For map of road locations see Figure 17.

	Road Segment AADT											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**Total**
1998	4,383	9,679	16,893	2,187	7,923	8,581	2,143	5,982	4,942	2,451	8,641	73,805
1999	4,246	12,110	17,411	1,715	8,286	8,862	3,110	6,514	6,621	2,782	11,632	83,289
2000	4,383	11,067	18,361	2,011	7,870	10,069	2,066	6,868	5,120	3,117	9,033	79,965
2001	4,246	12,175	19,799	2,240	8,529	9,632	3,025	7,090	6,126	2,655	9,704	85,221
2002	5,340	12,474	22,138	3,089	8,848	11,624	3,072	7,601	5,692	3,215	9,919	93,012
2003	6,692	15,801	24,231	3,267	8,685	11,144	3,198	7,540	6,215	3,317	9,940	100,030
2004	6,119	17,190	23,363	3,027	8,217	11,225	2,591	8,117	5,049	3,269	10,131	98,298
2005	6,788	19,665	22,372	3,854	8,422	11,531	2,620	8,335	5,026	2,853	9,875	101,341
2006	7,289	19,089	26,895	3,783	10,285	13,846	2,489	8,275	4,971	3,114	9,915	109,951
2007	7,996	17,626	26,933	3,569	10,648	14,761	2,358	7,919	4,898	3,643	9,467	109,817
2008	7,050	15,352	26,971	3,355	8,507	13,934	2,412	7,563	5,191	2,883	9,036	102,254
2009	7,205	15,667	27,047	2,534	8,759	13,431	2,258	6,741	4,611	2,792	8,738	99,781
2010	6,438	15,682	28,498	2,659	8,291	12,163	2,085	6,837	2,754	2,821	7,287	95,515
2011	5,670	15,402	29,860	2,617	8,564	12,721	2,660	6,665	5,030	3,186	6,458	98,833
2012	7,292	15,566	31,405	2,657	8,745	13,186	2,183	5,704	5,105	2,989	6,251	101,082
2013	6,362	15,368	32,767	2,795	8,994	11,901	2,268	6,390	3,467	2,897	6,044	99,251
2014	6,906	16,032	31,825	2,617	9,626	12,721	2,660	6,665	5,030	3,124	6,458	103,663
2015	11,051	16,352	33,368	4,032	11,394	15,458	2,686	7,481	4,955	3,075	5,563	115,415
2016	11,872	18,033	33,651	4,475	12,533	15,438	1,988	7,815	3,073	2,712	7,591	119,180
2017	14,140	20,318	35,149	4,404	12,323	15,295	3,197	7,671	5,637	3,167	8,027	129,328
Since 1998	**223%**	**110%**	**108%**	**101%**	**56%**	**78%**	**49%**	**28%**	**14%**	**29%**	**-7%**	**75%**
Since 2002	**165%**	**63%**	**59%**	**43%**	**39%**	**32%**	**4%**	**1%**	**-1%**	**-2%**	**-19%**	**39%**

Segments:

1: CR 858, E of CR 846 (W of Big Cypress Schcol)
2: Golden Gate Blvd, Wilson Blvd to Everglades Blvd
3: CR846, Wilson Blvd to Collier Blvd
4: Camp Keais Rd, S of Immokalee Rd
5: CR846, Camp Keais Rd to SR29
6: SR82, W of SR29
7: SR 29, N of US 41
8: SR 29, N of SR 82
9: US 41, W of SR 29/CR 29
10: CR 846, E of SR 29
11: SR 29, S of Immokalee (N of Farm Workers Village)

Table 10. Comparison of trends between 2002 and 2017 for traffic volumes and vehicle related panther deaths in the Ave Maria project action area, and estimated panther population.

	Total AADT for 11 Road Segments*	Total Vehicle Related Deaths**	Estimated Panther Population***			
			Low	High	Average	Low/High
1998	73,805	2	50	70	60	50
1999	83,289	2				
2000	79,965	7				
2001	85,221	5				
2002	93,012	5	55	120	95	55
2003	100,030	9				
2004	98,298	7				
2005	101,341	6				
2006	109,951	7				
2007	109,817	10				
2008	102,254	7				
2009	99,781	14				
2010	95,515	12				
2011	98,833	9				
2012	101,082	13				
2013	99,251	9				
2014	103,663	16				
2015	115,415	24				
2016	119,180	26				
2017	129,328	18	120	230	175	230
Increase						
Since 1998	**75%**	--	**140%**	**229%**	**192%**	**360%**
Since 2002	**39%**	**400%**	**118%**	**92%**	**84%**	**318%**

*within Ave Maria action area.
**within Ave Maria action area; estimate of increase based on the slope of the data plot (see Figure 16).
***FWC estimates of adults and subadults south of the Caloosahatchee.

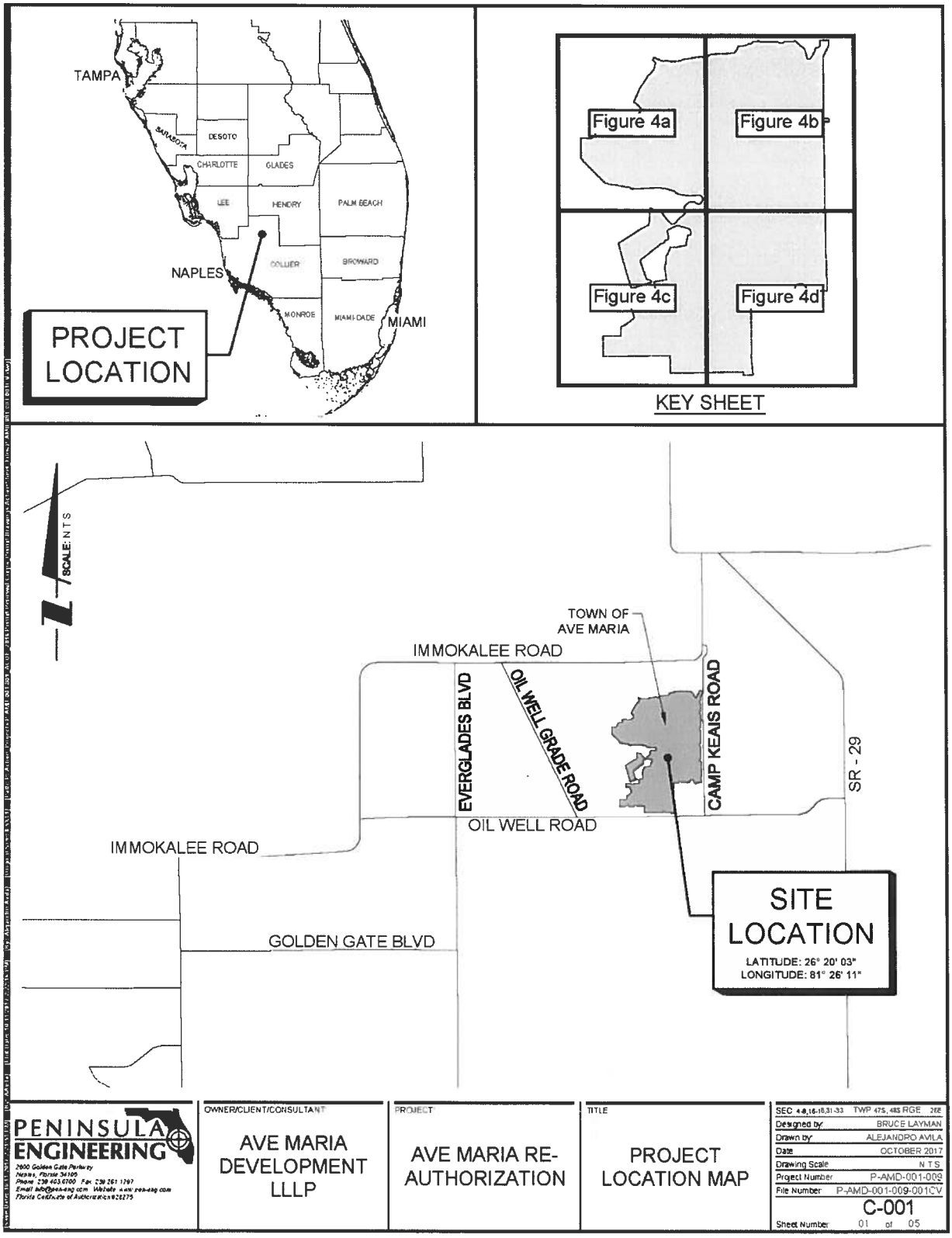

Figure 1. Location of Ave Maria University DRI project in Collier County, Florida.

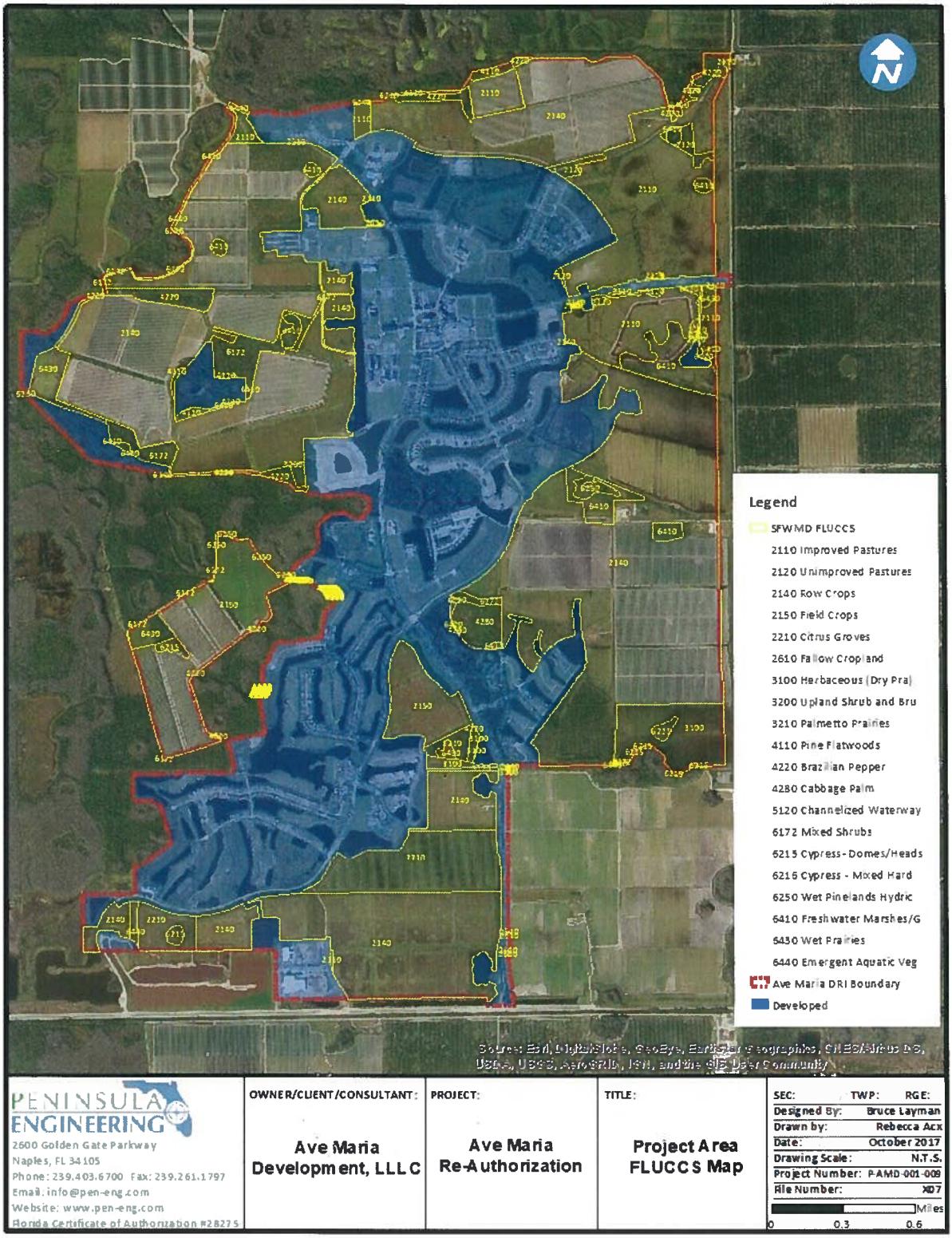

Figure 2. Aerial map of the Ave Maria project, showing limits of completed impacts and proposed impacts.

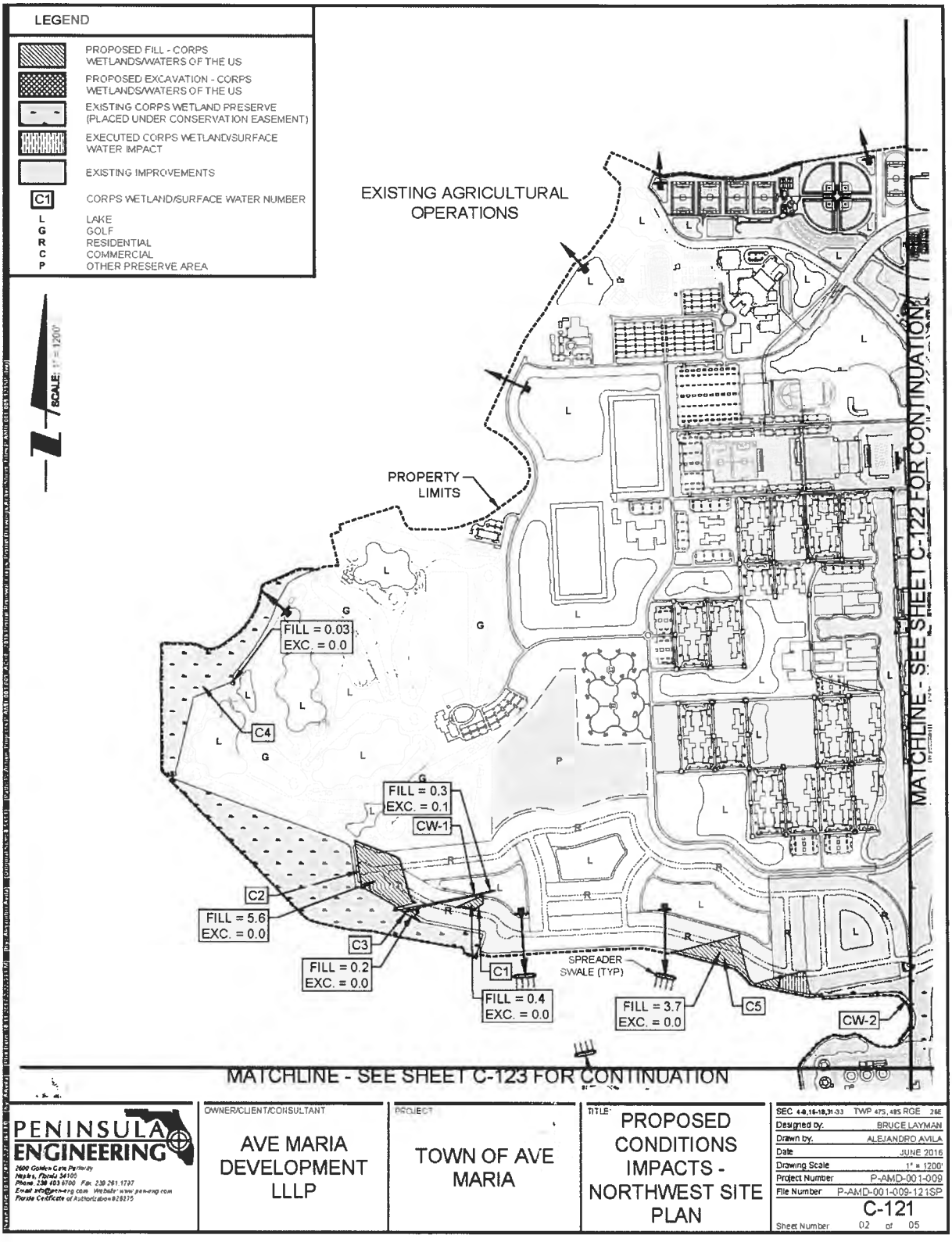

Figure 3a. Site plan illustrating completed and proposed impacts to Waters of the U.S. for the Ave Maria project (northwest quadrant).

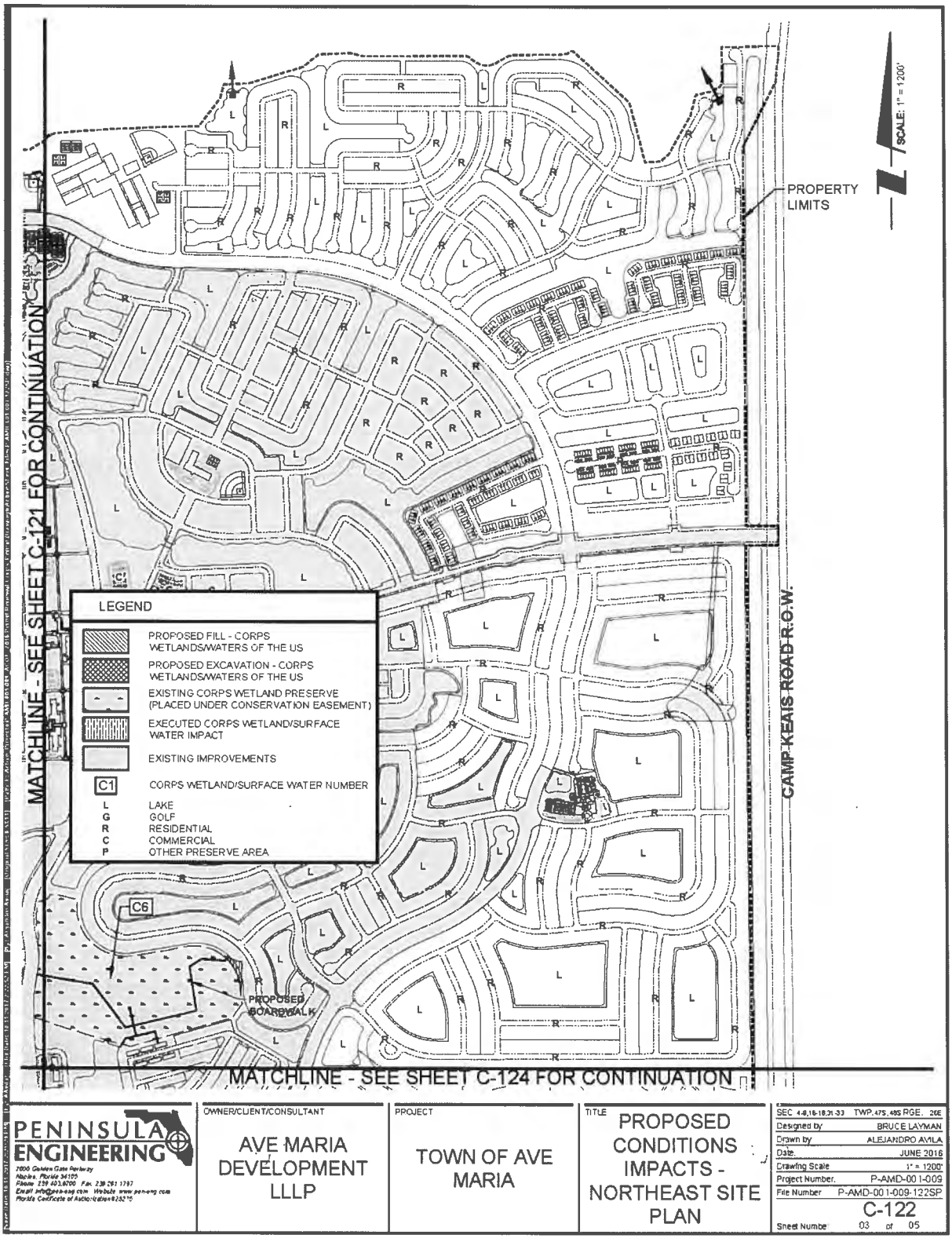

Figure 3b. Site plan illustrating completed and proposed impacts to Waters of the U.S. for the Ave Maria project (northeast quadrant).

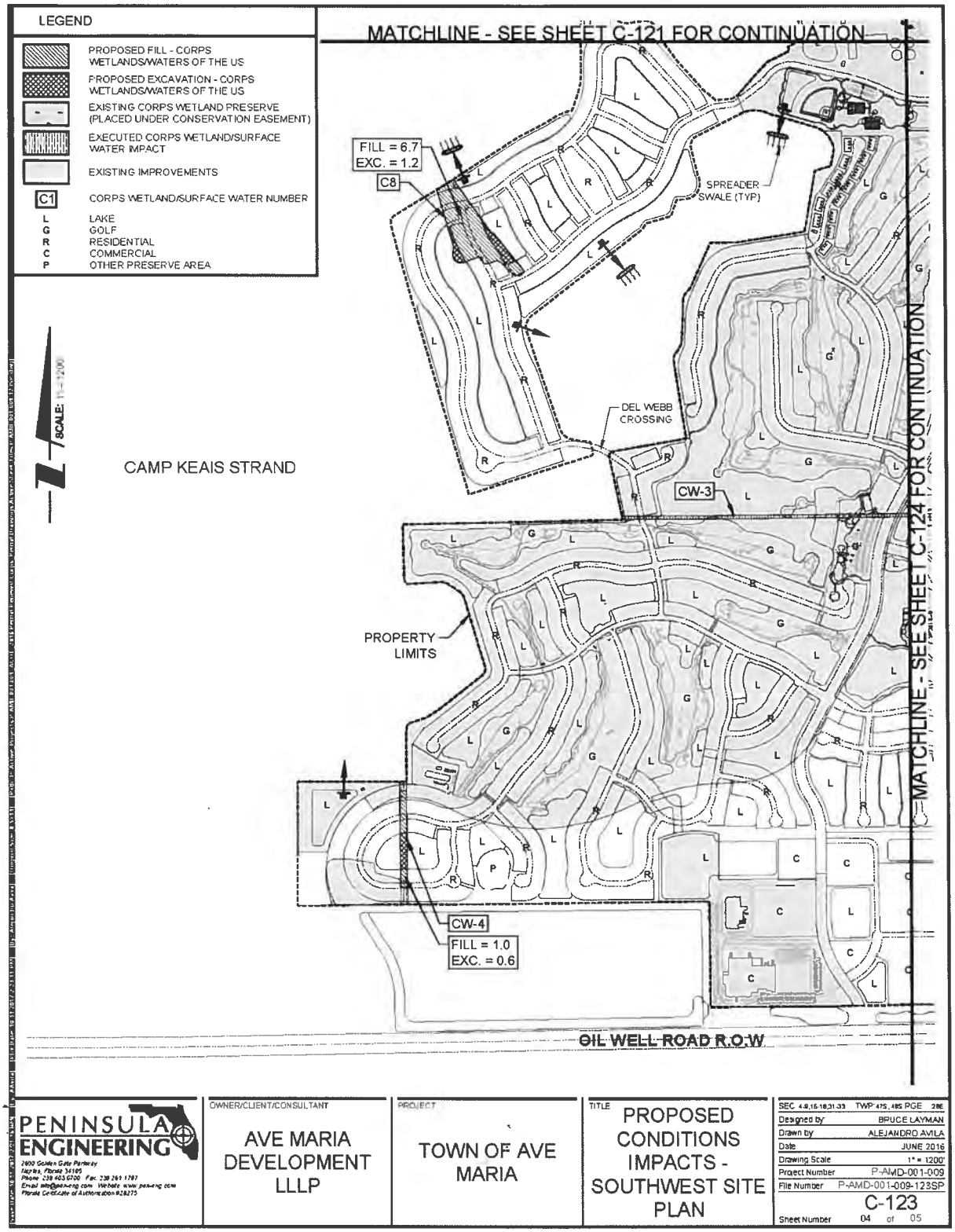

Figure 3c. Site plan illustrating completed and proposed impacts to Waters of the U.S. for the Ave Maria project (southwest quadrant).

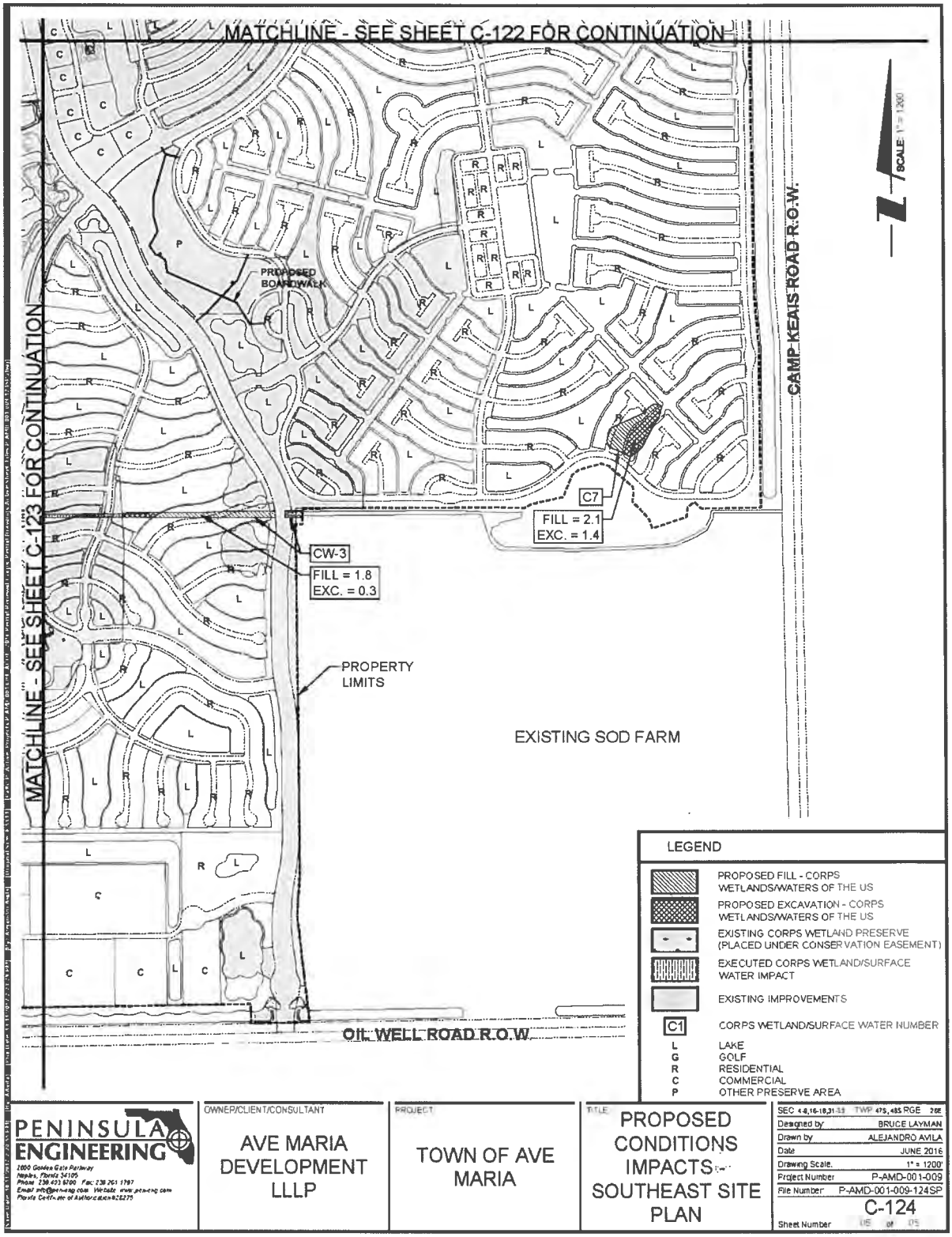

Figure 3d. Site plan illustrating completed and proposed impacts to Waters of the U.S. for the Ave Maria project (southeast quadrant).

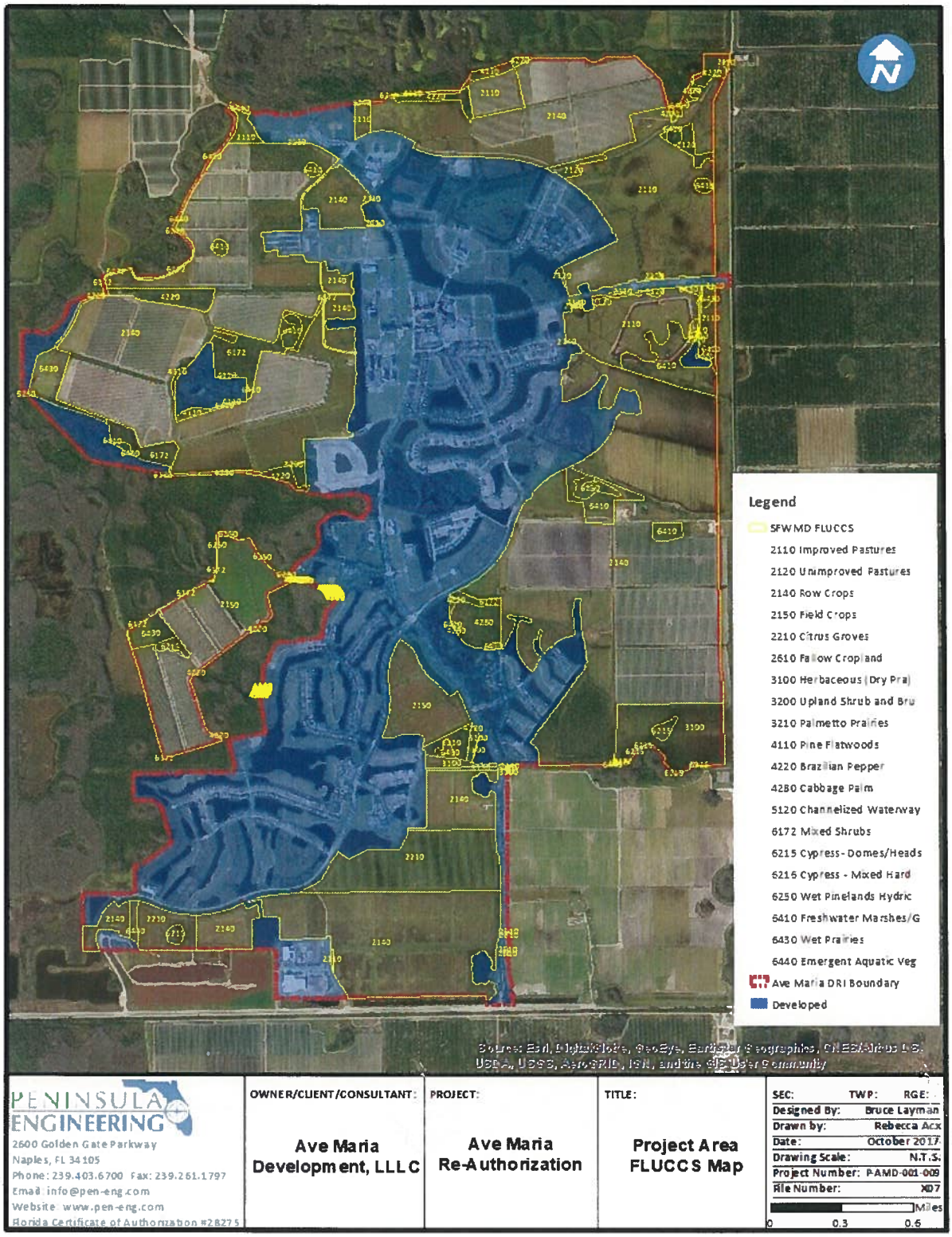

Figure 4. Aerial of Ave Maria showing vegetation types within the proposed Project. Areas previously developed are shaded blue.

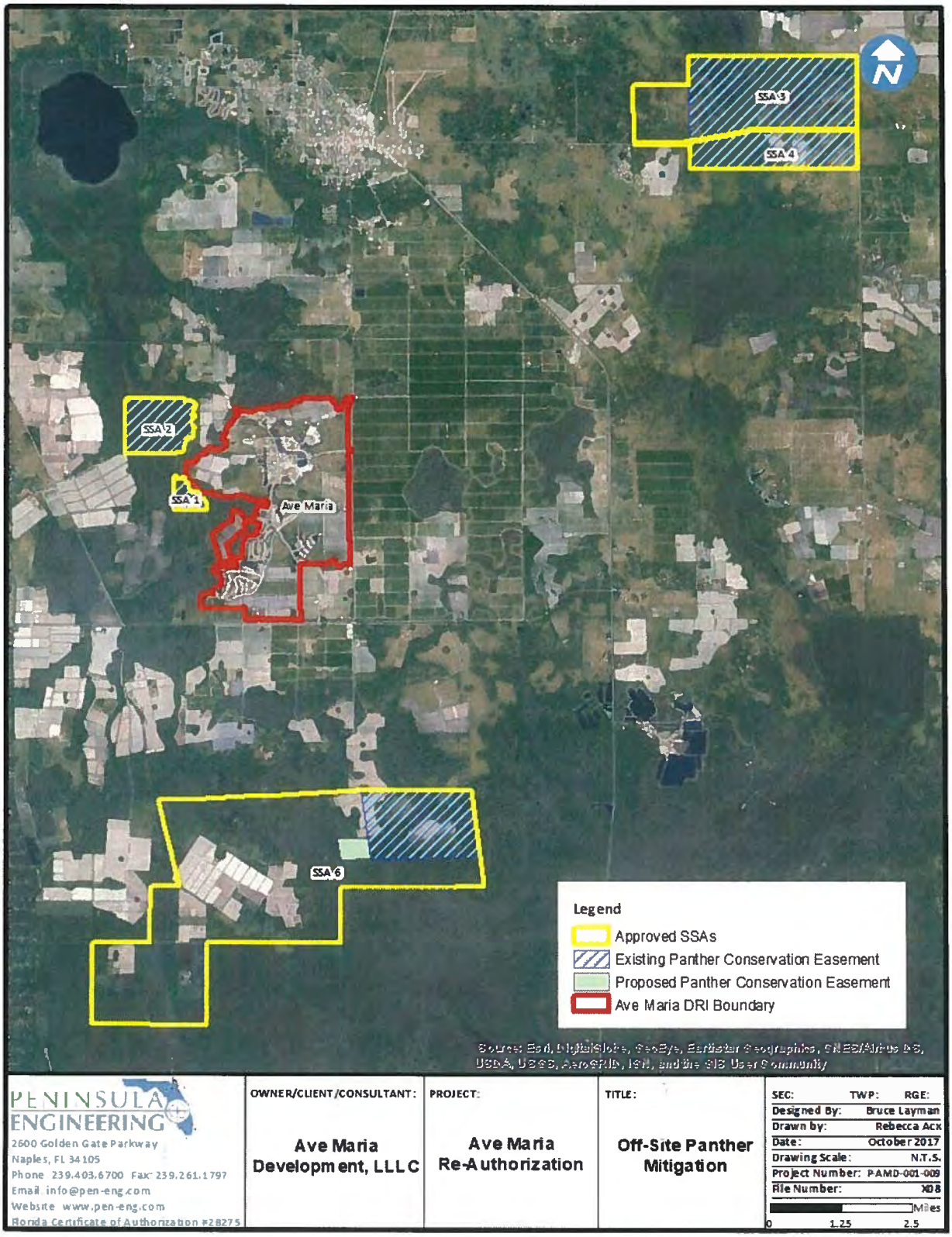

Figure 5. Locations of off-site panther compensation parcels for the Project.

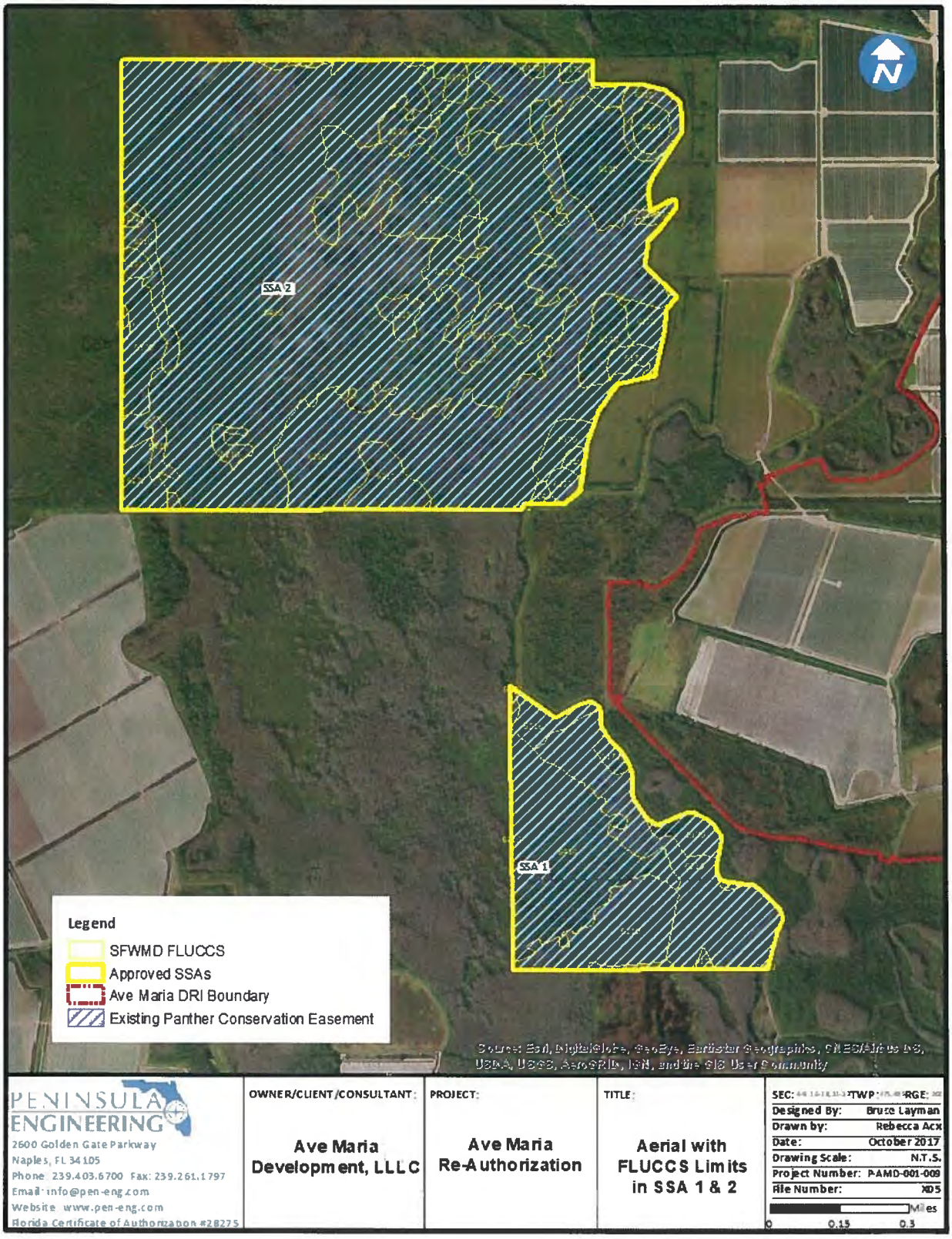

Figure 6a. Off-site compensation parcels SSA1 and SSA2.

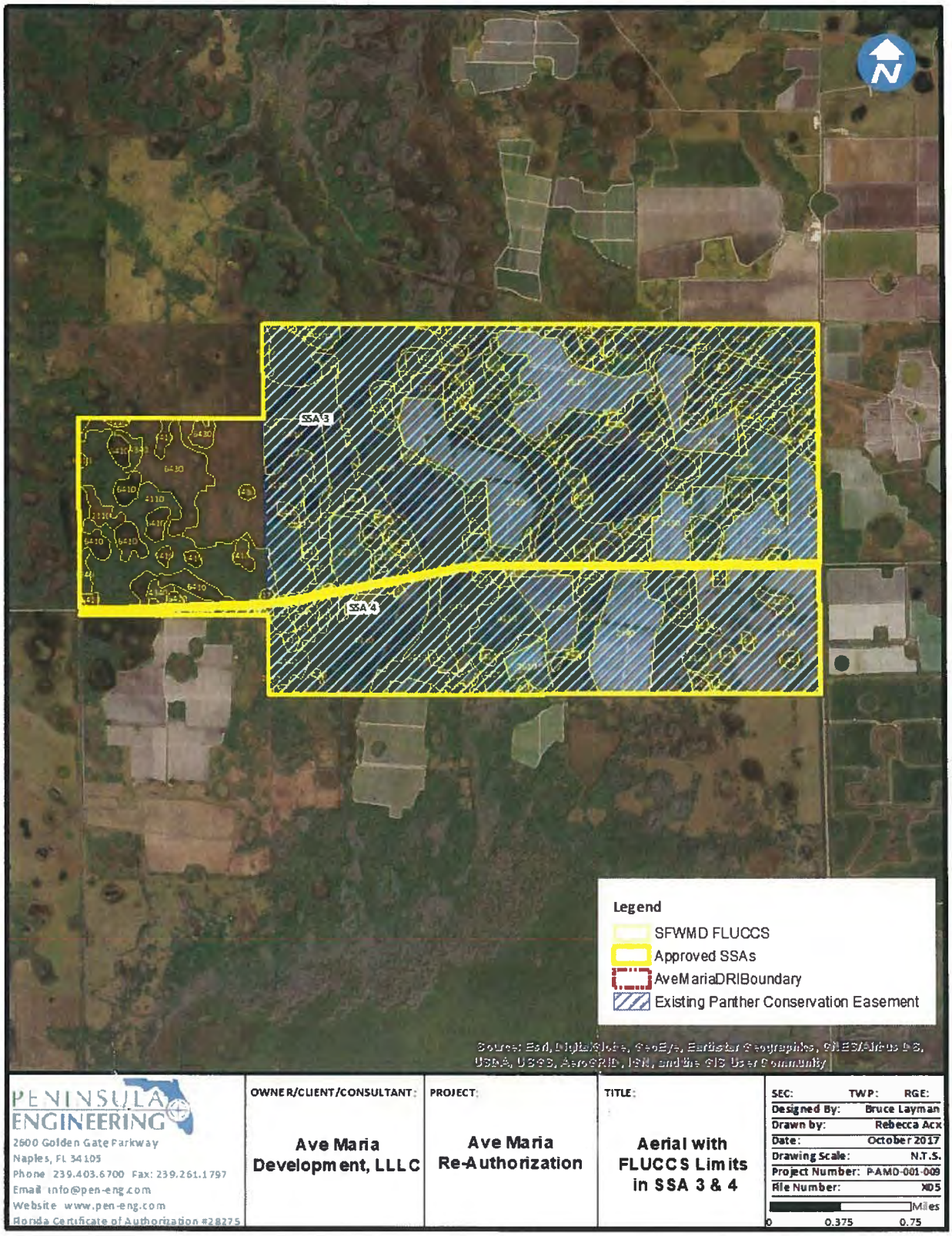

Figure 6b. Off-site compensation parcels SSA3 and SSA4.

Figure 6c. Off-site compensation parcel SSA6 (existing 1477-ac and 179.3-ac expansion).

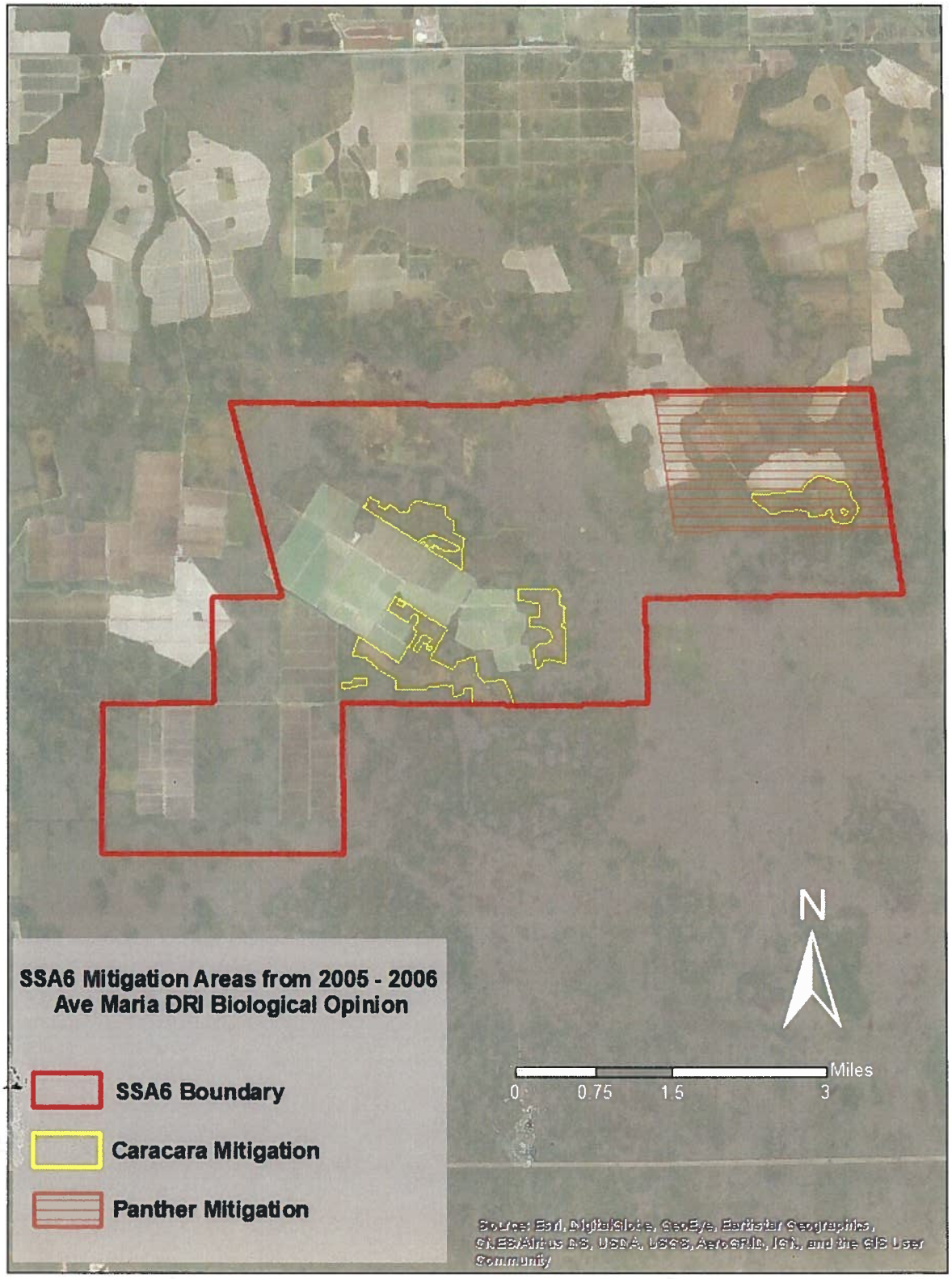

Figure 7. Caracara mitigation areas within SSA6.

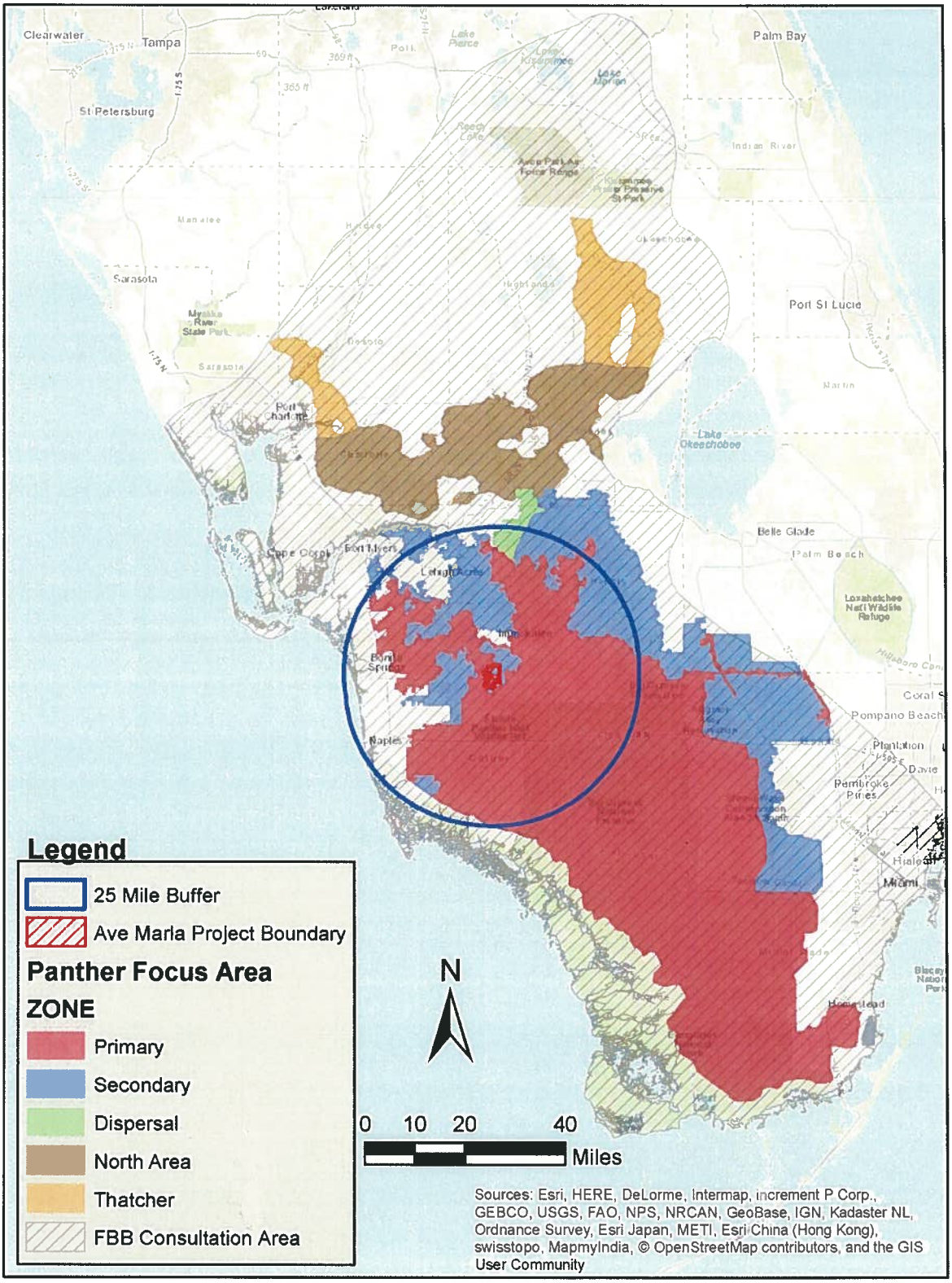

Figure 8. Location of the Ave Maria project, the 25-mi action area, panther focus areas, and FBB consultation area.

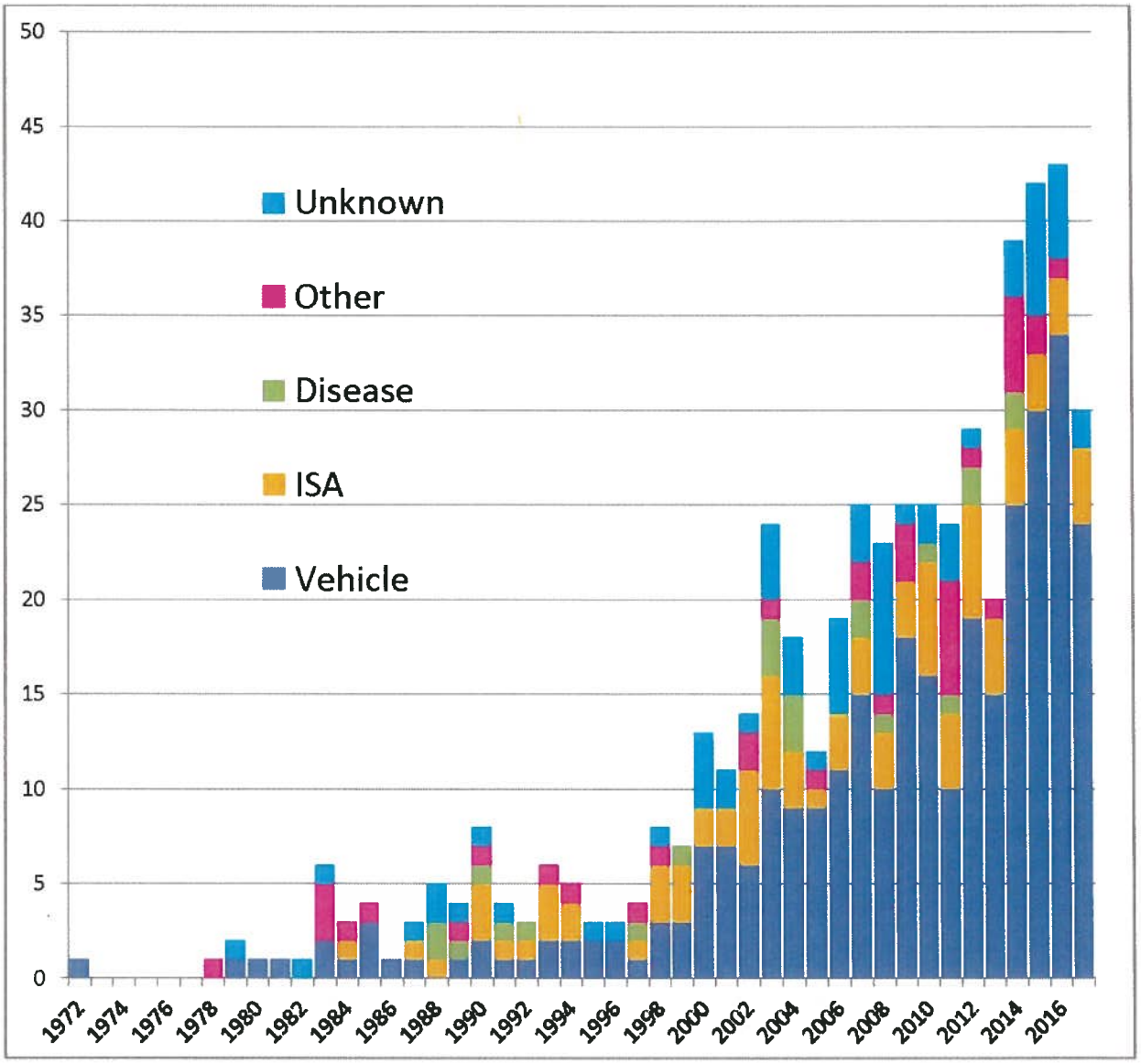

Figure 9. Total number and causes of Florida panther deaths recorded 1972-2017.

* Total deaths: 520.

Category totals: Vehicle (307); Intraspecific Aggression (85); Unknown (67); Other (38); Disease (23).

* "Other" causes may include: illegally shot, euthanasia, predation (kittens), wildfire (kittens), or other causes.

* Data from FWC database.

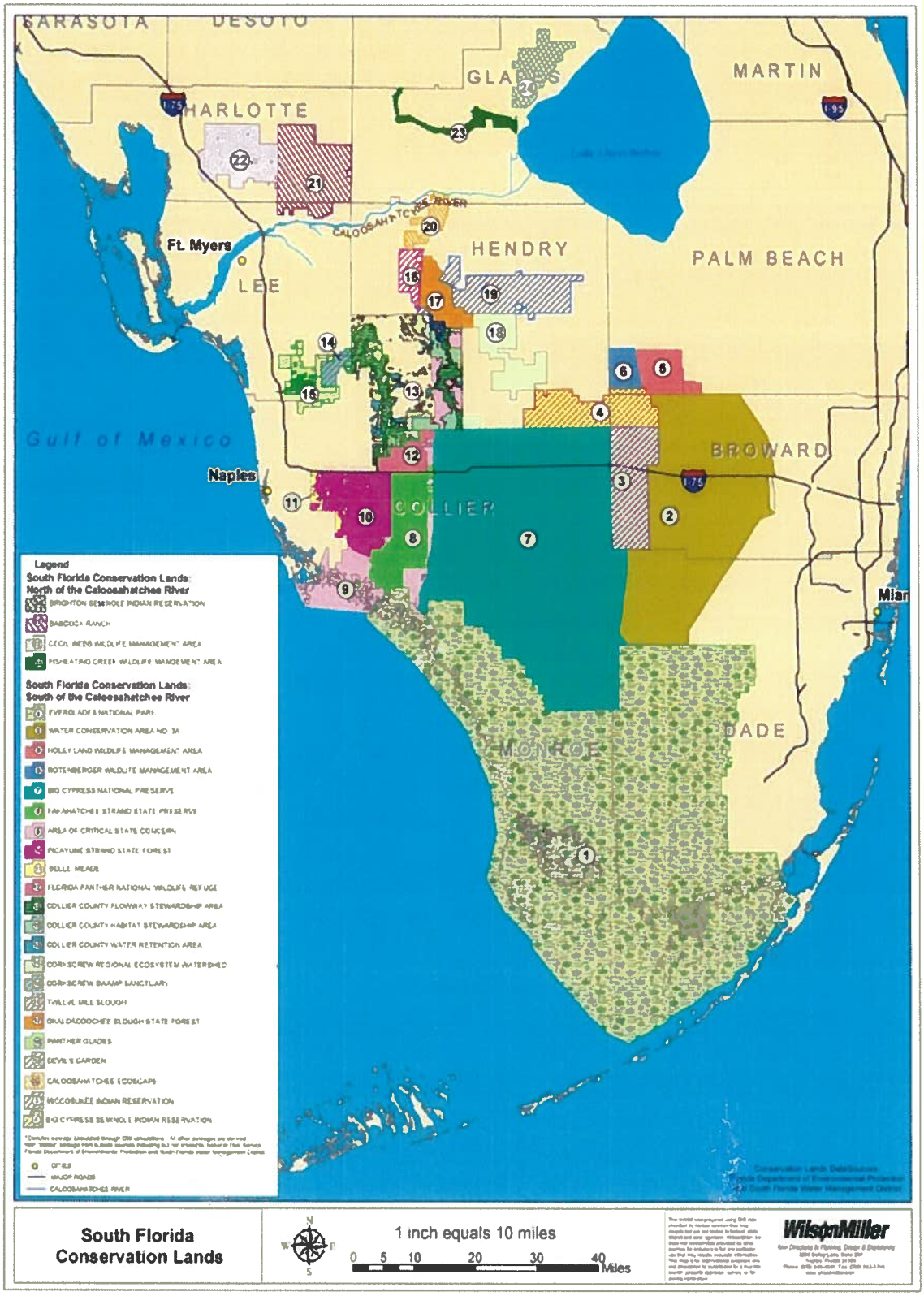

Figure 10. South Florida Conservation Lands.

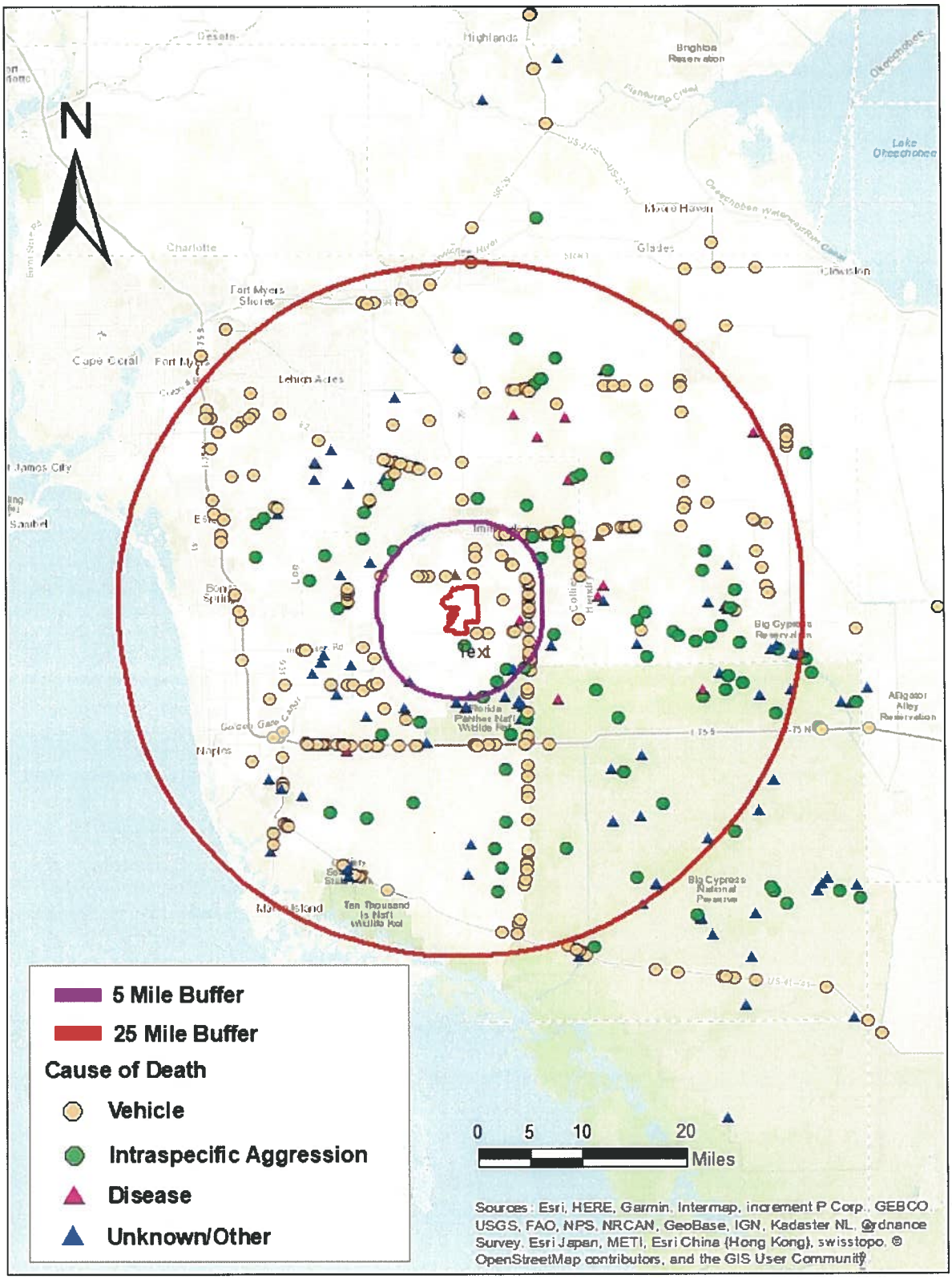

Figure 11. Identified causes for all panther deaths recorded from 1972 through May 2018 within the Ave Maria project's 25-mi action area (n=386).

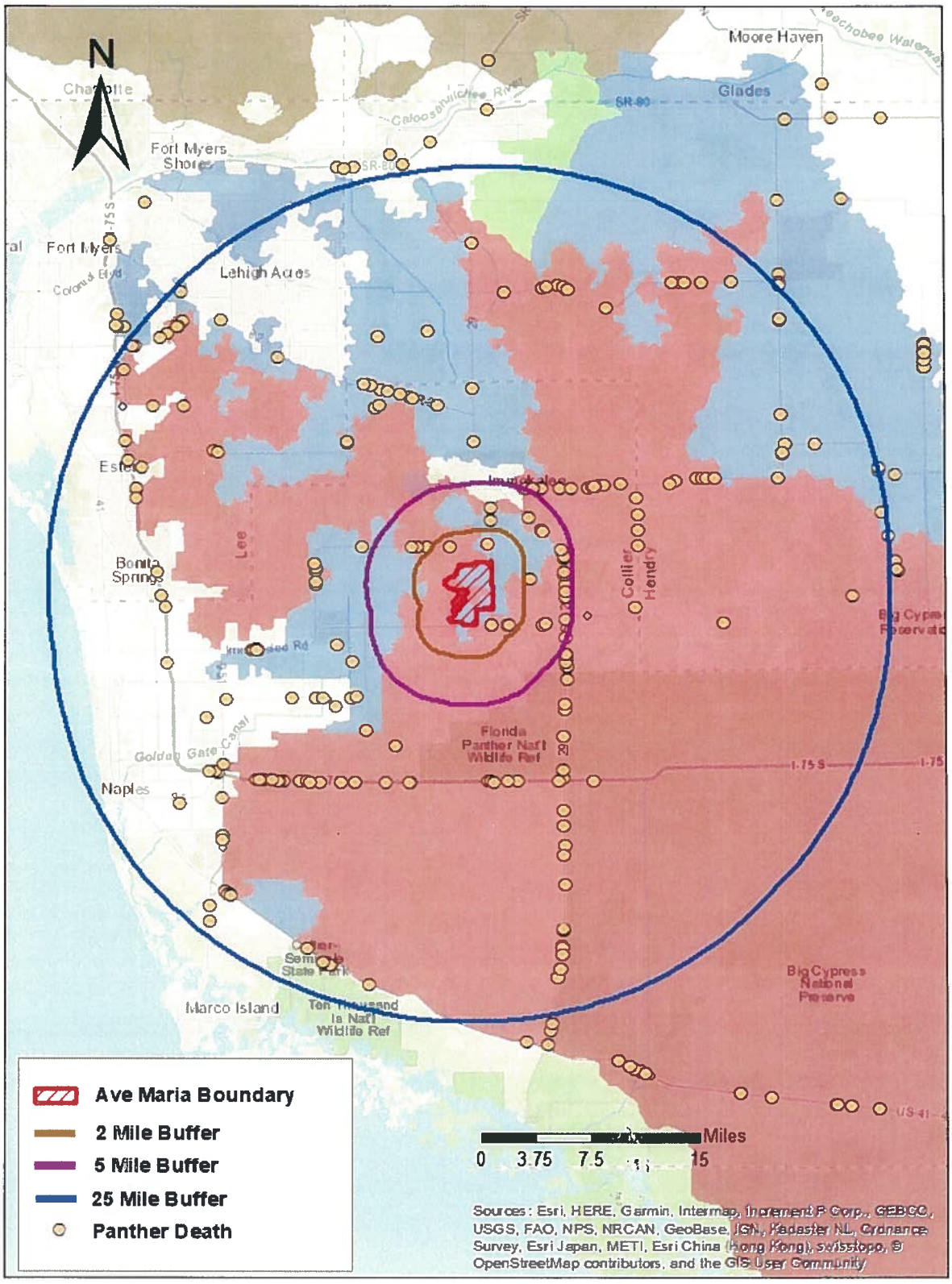

Figure 12. Vehicle-related panther deaths documented within 25 miles of the Ave Maria project site through May 2018 (n = 240; within 5 mi = 34; within 2 mi = 5).

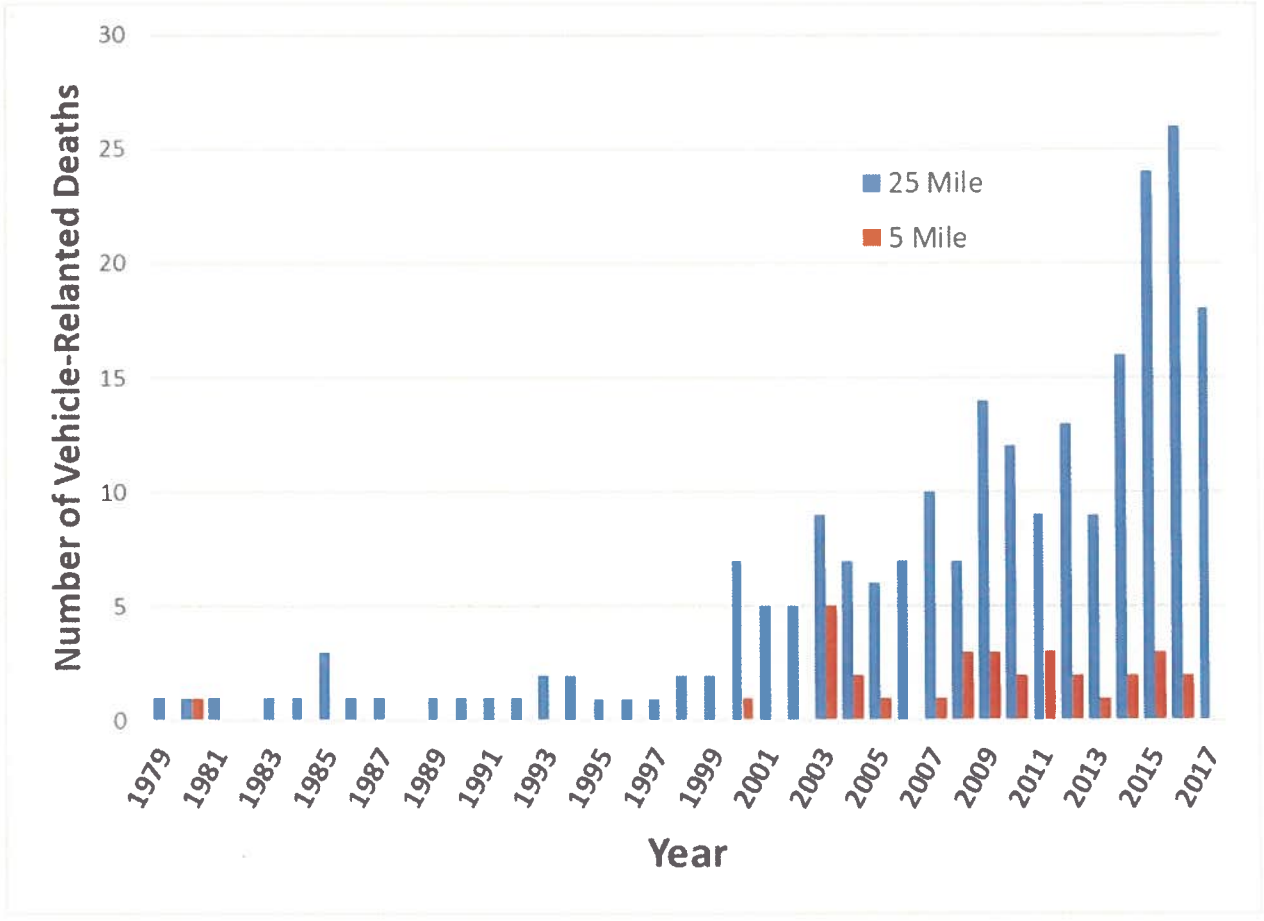

Figure 13. Annual totals through December 2017 for vehicle-related panther deaths within 5 miles (n=32) and 25 miles (n=229) of the Ave Maria project site.

*9 deaths in first 6 months of 2018, including 3 within 5 miles, are not included in the plot.

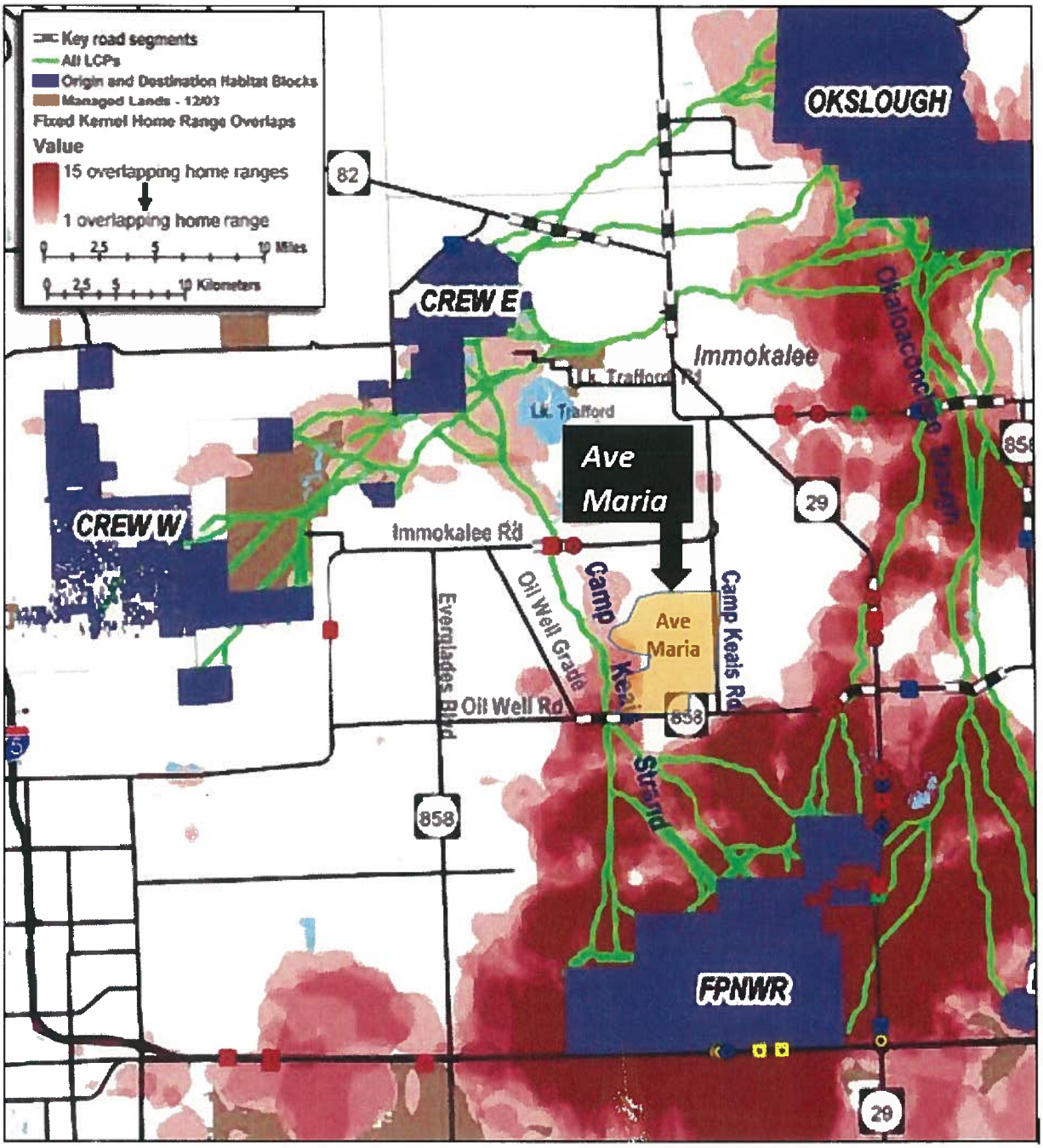

Figure 14. Least cost pathways for panthers dispersing between Florida Panther National Wildlife Refuge (FPNWR), the Corkscrew Regional Ecosystem Watershed (CREW), and the Okaloacoochee Slough State Forest (OKSLOUGH) in Collier, Florida.

* Map adapted from Swanson et al. 2008.

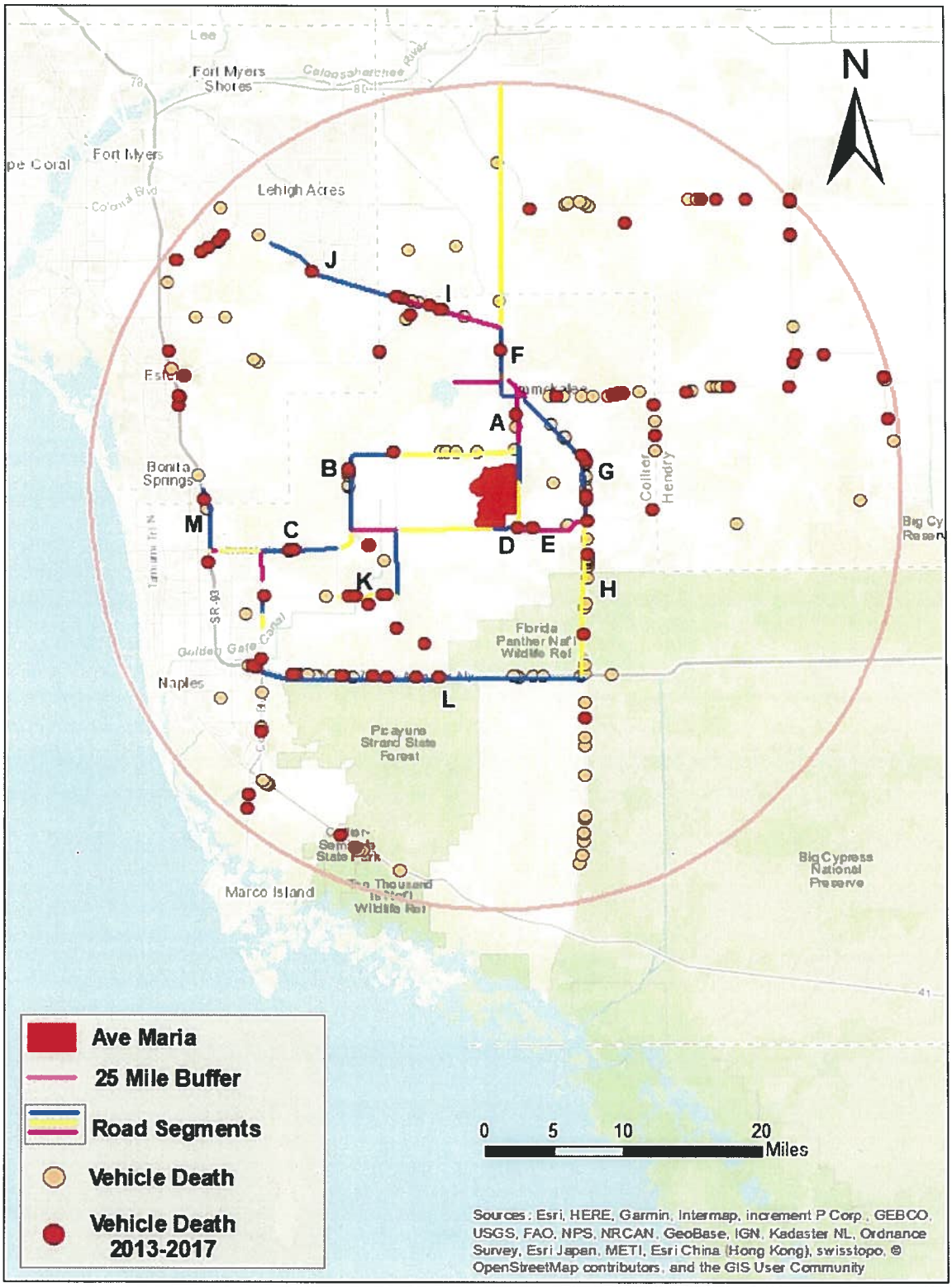

Figure 15. Thirty six high-volume road segments identified in the Traffic Impact Study as subject to "significant impact" from Ave Maria traffic volumes (see also Table 6).

Segments A through M were used to estimate risk of vehicle-related panther deaths.

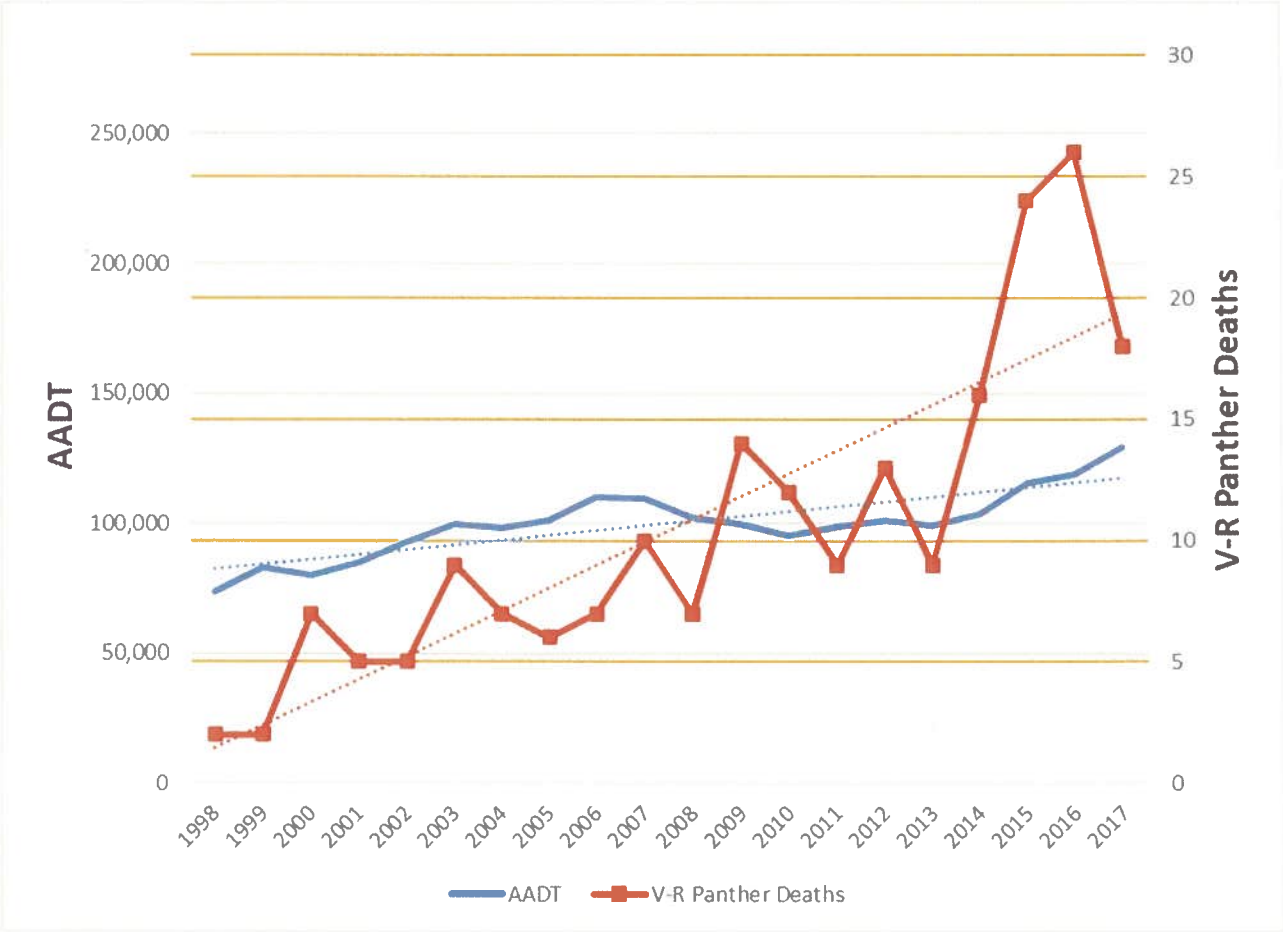

Figure 16. Plot of vehicle-related panther deaths and Average Annual Daily Traffic (AADT) in the Ave Maria project action area for the years 1998 through 2017. Deaths are for entire action area. AADT totals are from 11 representative action area road segments (see Table 10, Figure 17). Axes standardized to percent of total for the period.

Since 2002:
Traffic increase: 39 percent.
Vehicle-related death increase: approximately 400 percent

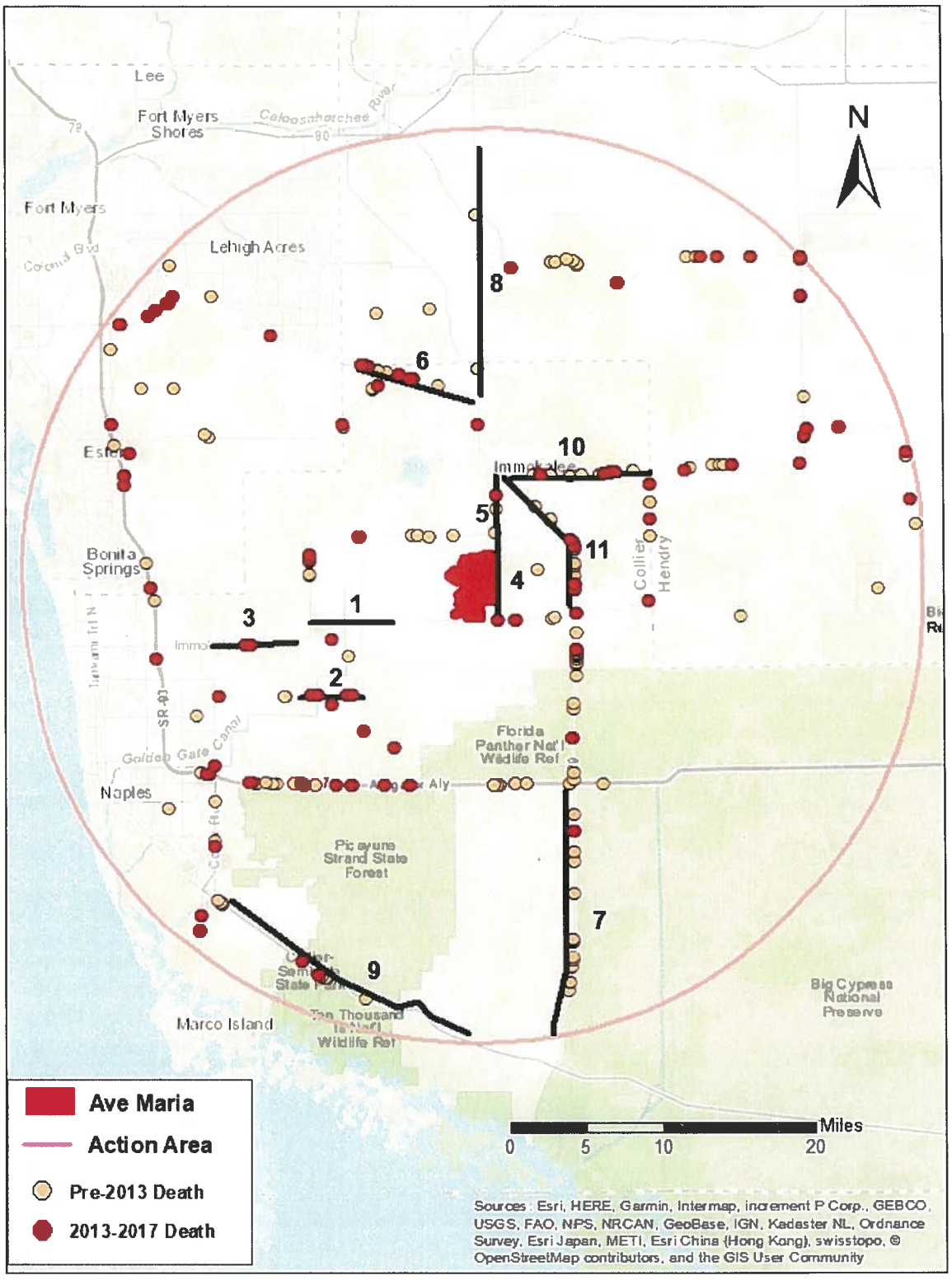

Figure 17. Eleven road segments used to estimate Ave Maria project action area historical traffic volume trends.

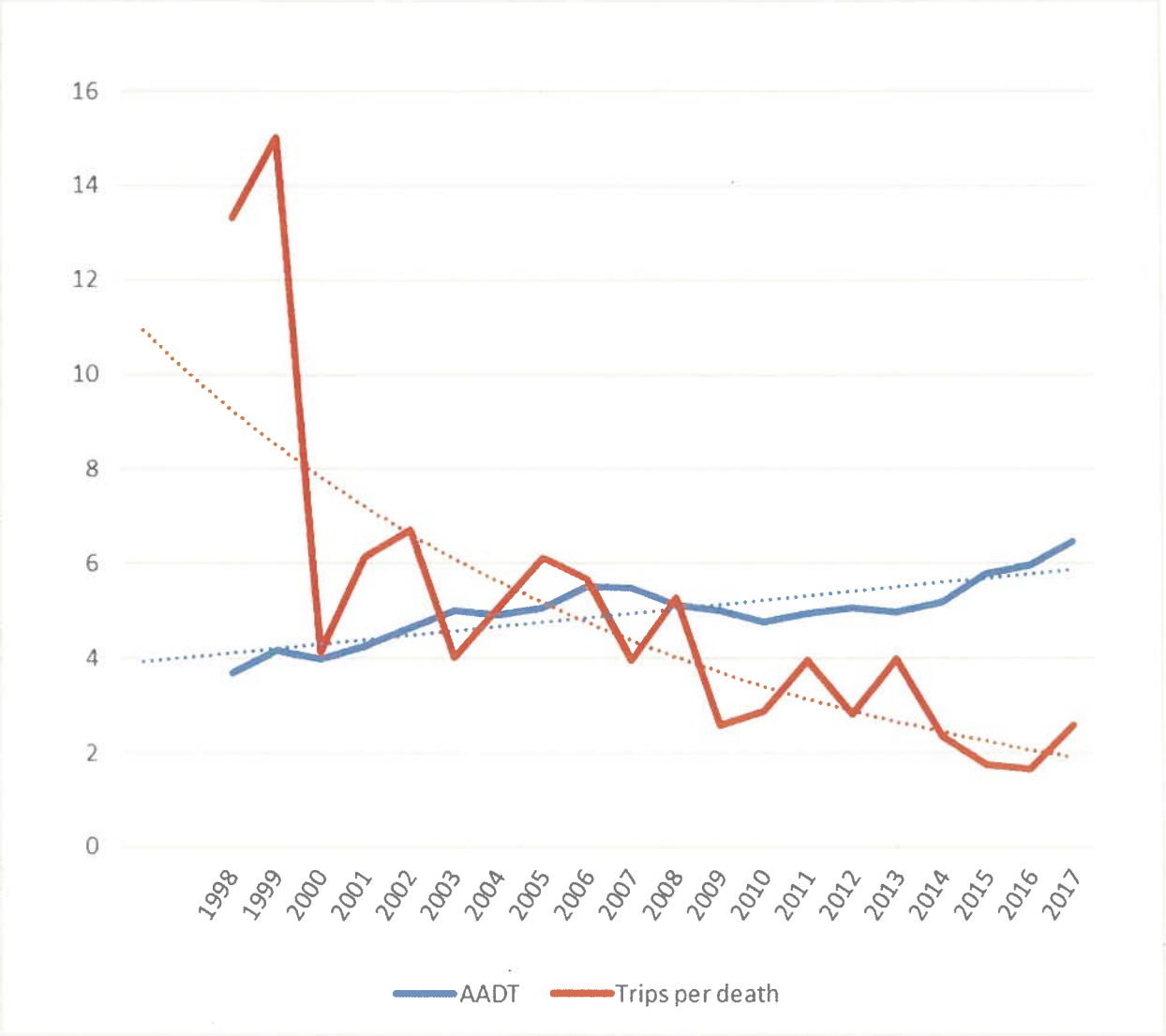

Figure 18. Estimated trend for trips per vehicle-related panther deaths in the Ave Maria project action area. Traffic volume based on surrogate of annual traffic volume totals using 11 representative action area road segments. Data presented as percent of the total for the 1998 through 2017 period.

STATUS OF THE SPECIES – Eastern indigo snake (*Drymarchon corais couperi*)

Legal Status – *threatened*

The U.S. Fish and Wildlife Service (Service) listed the eastern subspecies of indigo snake (*Drymarchon corais couperi*) as threatened under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 et seq.) in the Federal Register on January 31, 1978. The State of Florida recognizes the eastern indigo snake as Federally-designated Threatened. There is no designated critical habitat.

Species Description

Appearance/Morphology

The eastern indigo snake is the largest native snake species in North America with a maximum recorded length of 8.5 feet (ft) in length (2.6 meters [m]) (Moler 1992) and an unofficial record as having reached 10 ft long in the past (Holbrook 1842). Its color is uniformly lustrous-black, dorsally and ventrally, except for a red or cream-colored suffusion of the chin, throat, and sometimes cheeks. The head is small in proportion to the size of the body, slightly ovular, narrow, and flattened with an elongated snout. The eyes are large relative to the size of the head with black pupil and iris. The vertical plates, frontal plates, and superior orbital are broad with the former being pentagonal in shape. Its scales are large, hexagonal, and smooth in 17 scale rows at mid-body (the central 3 to 5 scale rows are lightly keeled in adult males). Its anal plate is undivided (Holbrook 1842). In the Florida Keys, adult indigo snakes seem to have less red on their faces or throats compared to mainland specimens (Lazell 1989).

Taxonomy

Holbrook (1842) first described all indigo snakes of North America as a monotypic taxon within the Linnaean genus *Coluber* (racers and whipsnakes), *Coluber couperi*. In 1843 Leopoldo Fitzinger moved indigo snakes from genus *Coluber* into their own genus, *Drymarchon*. Over time twelve subspecies of *Drymarchon corais* came to be recognized and at the time of listing the eastern indigo snake was considered one among these twelve subspecies (*Drymarchon corais couperi* [43 FR 4026 4029]). In 1991, Collins elevated this lineage to specific status based on allopatry and diagnosibility. Subsequent taxonomic work based on morphology has supported the designation of *Drymarchon couperi* as a distinct species within the genus (Wuster et al. 2001). Currently, the eastern indigo snake (*Drymarchon couperi*) is accepted by the scientific community as one of three separate species in genus *Drymarchon*, (Crother 2000, ITIS 2016).

Life History

The eastern indigo snake is an apex predator among snakes, eating any vertebrate it can overpower, especially other snakes (Keegan 1944; Belson 2000; Ernst and Ernst 2003, Stevenson et al. 2010).

It is a generalized predator immune to the toxins of the venomous snakes it encounters and is only limited by its gape and ability to overpower its prey. Food items include fish, frogs, toads, snakes, lizards, turtles, turtle eggs, small alligators, birds, and small mammals (Keegan 1944; Babis 1949; Kochman 1978; Steiner et al. 1983).

In south-central Florida, indigo snake breeding extends from June to January, egg-laying occurs from April to July, and hatching occurs during mid-summer to early fall (Layne and Steiner 1996). Young hatch approximately 3 months after egg-laying and there is no evidence of parental care. Indigo snakes in captivity take 3 to 4 years to reach sexual maturity (Speake and Smith 1987). It is possible female indigo snakes can store sperm and delay fertilization of eggs for significant periods of time or are parthenogenetic (Carson 1945). Carson (1945) concluded that sperm storage and delayed fertilization were the most likely explanation for the fertile eggs produced by an indigo snake that he had kept in captivity for more than 4 years. However, there have been several recent reports pathogenesis in other snakes, so it is possible sperm storage may not explain Carson's (1945) example (Moler 1998). There is no information on indigo snake lifespan in the wild, although one captive individual survived 25 years, 11 months (Shaw 1959).

Habitat

Indigo snakes are active and spend a great deal of time foraging for food and searching for mates within their territories, with most activity occurring in the summer and fall (Speake and Smith 1987; Moler 1985a). Adult males have larger home ranges than adult females and juveniles; their home ranges average 554 acres (ac), reducing to 390 ac in the summer (Moler 1985b). In contrast, a gravid female may use from 3.5 to 106 ac (Speake and Smith 1987). In Florida, home ranges for females and males range from 5 to 371 ac and 4 to 805 ac, respectively (Smith and Dyer 2003). At Archbold Biological Station, the average home range size for females was determined to be 46 ac, and overlapping male home range size determined to be 184 ac (Layne and Steiner 1996).

Relative to other snake species, adult eastern indigo snakes have very large activity ranges and can move considerable distances in short periods of time (Service 2008). Habitat use varies seasonally between upland and wetland areas, especially in the more northern parts of the species' range. In southern parts of their range eastern indigo snakes are habitat generalists which utilize most available habitat types. Movements between habitat types in northern areas of their range may relate to the need for thermal refugia (protection from cold and/or heat).

In northern areas of their range indigo snakes prefer an interspersion of tortoise-inhabited sandhills and wetlands (Landers and Speake 1980). In these regions indigo snakes most often use forested areas rich with gopher tortoise burrows, hollowed root channels, hollow logs, or the burrows of rodents, armadillos, or land crabs as thermal refugia during cooler seasons (Lawler 1977; Moler 1985a; Layne and Steiner 1996). The eastern indigo snake in this region is typically classified as a longleaf pine savanna specialist because here, in the northern four-fifths of its range, the indigo snake is typically only found in vicinity of xeric longleaf pine–turkey oak sandhills inhabited by the gopher tortoise (Means 2006).

In the milder climates of central and southern Florida comprising the remaining one fifth of its range thermal refugia such as those provided by gopher tortoise burrows may not be as critical to survival of indigo snakes. Consequently, indigo snakes in these regions use a more diverse assemblage of habitats such as pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, edges of freshwater marshes, muckland fields, coastal dunes, and xeric sandhill communities; with highest population concentrations of indigo snakes occurring in the sandhill and pineland regions of northern and central Florida (Service 1999). Indigo snakes have also been found in agricultural lands with close proximity to wetlands (Zeigler 2006).

In extreme south Florida (*i.e.*, the Everglades and Florida Keys), indigo snakes also utilize tropical hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats. Though eastern indigo snakes have been found in all available habitats of south Florida it is thought they prefer hammocks and pine forests since most observations occur there and use of these areas is disproportionate compared to the relatively small total area of these habitats (Steiner et al. 1983).

Distribution

Historically, the eastern indigo snake occurred throughout Florida and in the coastal plain of Georgia, Alabama, and Mississippi (Loding 1922, Haltom 1931, Carr 1940, Cook 1954, Diemer and Speake 1983, Lohoefener and Altig 1983, Moler 1985a). Most, if not all, of the remaining viable populations of the eastern indigo snake occur in Georgia and Florida (Service 2008).

Population Dynamics

Due to their use of subterranean refugia and frequent long-distance dispersal, detectability of eastern indigo snakes is low and estimates of mortality difficult (Hyslop et al. 2012). Consequently, the exact size and viability of the range wide population is unknown (Service 2008). However, there is no information indicating the range of eastern indigo snake has expanded or retracted, so it's presumed the population is stable.

Threats

Throughout the eastern indigo snake's range expanding urban areas are creating barriers to the dispersal of individuals and gene flow between populations, and habitat loss and degradation are a threat to the species (Lawler 1977, Moler 1985b). In northern areas of its range in Georgia and peninsular Florida the species is impacted by a decline in longleaf pine forests, gopher tortoises, and gopher tortoise habitat (Van Lear et al. 2005). In central and southern Florida the eastern indigo snake is less dependent on any one habitat type, but does avoid developed areas (Lawler 1977, Moler 1985a, Hyslop 2007). Throughout Florida developed areas are expanding rapidly with population growth at the expense of wildlife habitat (Cerulean 2008).

At the time of listing, other threats to the eastern indigo snake included commercial collection for the pet trade and mortality during the gassing of gopher tortoise burrows by individuals

attempting to drive rattlesnakes out for collection (43 FR 4026 4029). Since their listing additional potential threats to the species have expanded to include disease, road mortality, kills of indigo snakes by land owners and pets, and ATV use in gopher tortoise habitat (Service 2008).

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STATUS OF THE SPECIES – Florida bonneted bat (*Eumops floridanus*)

Legal status – Federal: *endangered*, 2013; State: *Federally-designated endangered*

The U.S. Fish and Wildlife Service (Service) proposed to list the Florida bonneted bat under the Endangered Species Act of 1973, as amended in 1998 (Act) (87 Stat. 884; 16 U.S.C. 1531 et seq.), on October 4, 2012 (Service 2012). The final listing determination published on October 2, 2013, and became effective November 1, 2013 (Service 2013).

This species is also listed as "Federally-designated endangered" on the Florida List of Endangered and Threatened Species under the Florida Administrative Code (Chapter 68A–27 rules (68A–27.0011 and 68A–27.003)).

Critical habitat has not been designated for this species.

Species Description

Appearance/Morphology

The Florida bonneted bat is a member of the Molossidae (free-tailed bats) family within the order Chiroptera. The species is approximately 130 to 165 millimeters (mm) (5.1 to 6.5 inches (in) in length (Timm and Genoways 2004) and the largest bat in Florida (Owre 1978; Belwood 1992; Florida Bat Conservancy [FBC] 2005). The length of the tail ranges from 46 to 57 mm (1.8 to 2.2 in), hind foot 11 to 15 mm (0.4 to 0.6 in), ear 20 to 30 mm (0.8 to 1.2 in), and forearm 60.8 to 66.0 mm (2.39 to 2.60 in) (Timm and Genoways 2004). Masses average 39.7 grams (g) (1.4 ounces [oz]) and range from 30.2 to 46.6 g (1.1 to 1.6 oz) (Owre 1978; Belwood 1981; Belwood 1992; Timm and Genoways 2004). A pregnant female with a single fetus weighed 55.4 g (2.0 oz) (Belwood 1981). Males and females are not significantly different in size (Timm and Genoways 2004). Timm and Genoways (2004) found no pattern of size-related geographic variation in this species.

Members of the genus *Eumops* have large, rounded pinnae (ears), arising from a single point or joined medially on the forehead (Best et al. 1997). The common name of "bonneted bat" originates from characteristic large broad ears, which project forward over the eyes (FBC 2005). Ears are joined at the midline of the head. This feature, along with its large size, distinguish the Florida bonneted bat from the smaller Brazilian (=Mexican) free-tailed bat (*Tadarida brasiliensis*) (Belwood 1992).

Wings of the members of the genus *Eumops* are among the narrowest of all molossids (Freeman 1981, as cited in Best et al. 1997) and are well-adapted for rapid, prolonged flight (Vaughan 1959, as cited in Best et al. 1997). This wing structure is conducive to high-speed flight in open areas (Findley et al. 1972, as cited in Best et al. 1997).

The Florida bonneted bat's fur is short and glossy, with hairs sharply bicolored with a white base (Belwood 1992; Timm and Genoways 2004). Like other molossids, color is highly variable; color varies from black to brown to brownish-gray or cinnamon brown with ventral pelage paler than dorsal (Owre 1978; Belwood 1992; Timm and Genoways 2004). The basisphenoid pits (paired depressions in the basisphenoid bone) of the skull are ovoid (egg-shaped) and moderately deep (Timm and Genoways 2004). The tail projects beyond the interfemoral membrane (skin that stretches between the legs) (Owre 1978; Belwood 1992).

Taxonomy

The Florida bonneted bat (*Eumops floridanus*) was previously known as Florida mastiff bat, Wagner's mastiff bat, and mastiff bat (*E. glaucinus floridanus*) (Owre 1978; Belwood 1992; Best et al. 1997). While earlier literature found the Florida bonneted bat distinct at the subspecies level, the most current scientific information confirms that *E. floridanus* is a full species, and this taxonomic change has been accepted by the scientific community (Timm and Genoways 2004; McDonough et al. 2008; R. Timm, pers. comm. 2008, 2009; *in litt.* 2012; Baker et al. 2009). The International Union for Conservation of Nature and Natural Resources (Timm and Arroyo-Cabrales 2008), the Florida Natural Areas Inventory (FNAI) (2015), and the Florida Fish and Wildlife Conservation Commission (FWC) use the name *E. floridanus.*

Life History

Relatively little is known about the Florida bonneted bat's life history. Lifespan is not known. Based upon the work of Wilkinson and South (2002), Gore et al. (2010) inferred a lifespan of 10 to 20 years for the Florida bonneted bat, with an average generation time of 5 to 10 years.

The Florida bonneted bat has a fairly extensive breeding season during summer months (Timm and Genoways 2004). The maternity season for most bat species in Florida occurs from mid-April through mid-August (Marks and Marks 2008a). During the early portion of this period, females give birth and leave young in the roost while they make multiple foraging excursions to support lactation (Marks and Marks 2008a). During the latter portion of the season, young and females forage together until the young become sufficiently skilled to forage and survive on their own (Marks and Marks 2008a). The Florida bonneted bat is a subtropical species, and limited data suggest the species may be polyestrous (having more than one period of estrous in a year) (Timm and Genoways 2004; Florida Bat Conservancy [FBC] 2005). Recent studies at Babcock-Webb Wildlife Management Area (WMA) in 2014 have helped document pregnant bonneted bats in April with pups born in May (H. Ober, pers. comm. 2014a; J. Myers, pers. comm. 2014a–c). Preliminary data from the same site also suggest a prolonged maternity season, as some pregnant and post-lactating females were observed in late August (H. Ober, pers. comm. 2014b). Pups were also observed within a known natural roost at Avon Park Air Force Range (APAFR) in mid-October (B. Scofield, pers. comm. 2014; P. Halupa, pers. obs. 2014b). The full extent of the maternity season is not well understood, but is a time of particular sensitivity, with increased energy demands and risks as females leave young in roosts while making multiple foraging excursions to support lactation (Kurta et al. 1989; Kurta et al. 1990; Kunz et al. 1995; Marks and Marks 2008a; H. Ober, pers. comm. 2014c). Exploitation of insects in patches that yield high energy returns for pregnancy and lactation is important (Kunz et al. 1995). Reduced insect populations in urban areas may make it difficult for females to successfully raise offspring to maturity (Kurta et al. 1990; Kurta and Teramino 1992). Information on reproduction and

demography is sparse. The Florida bonneted bat has low fecundity; litter size is one (FBC 2005; Timm and Arroyo-Cabrales 2008).

At present, only three active, natural roost sites are known, and only limited information on historical sites is available. Based upon limited information, the species roosts singly or in colonies consisting of a male and several females (Belwood 1992). G.T. Hubbell believed individuals in Miami roosted singly (Belwood 1992). However, Belwood (1981) suggested a colony, consisting of seven females and one male using a longleaf pine cavity as a roost site in Punta Gorda, was a harem group, based on its sex ratio. Belwood (1981; 1992) suggested this behavior has been recorded in a few bat species and such social groupings may be facilitated by roosting in tree cavities, which can be defended from other males (Morrison 1979). Few details are available for the composition of the currently known active natural roosts. At APAFR, approximately 22 bats emerged from the roost in October 2014, with several others including young remaining at the roost after emergence (P. Halupa, pers. obs. 2014b). At Florida Panther National Wildlife Refuge (FPNWR), 12 bats emerged from the roost tree on 2 consecutive nights in July 2015, with others, possibly pups, remaining in the roost after emergence (E. Braun de Torrez, pers. comm. 2015). At Big Cypress National Preserve (BCNP), 11 bats emerged from a natural roost in December 2015 (R. Arwood, pers. comm. 2015).

Information on roosting habits from artificial structures is also limited. The Florida bonneted bat colony using bat houses on private property in Lee County consisted of 8 to 25 individuals, including one albino (S. Trokey, pers. comm. 2006a, 2006b; 2008a, 2008b; 2012). Sex ratio is not known. Some movement between the houses has been observed (S. Trokey, pers. comm. 2006a). Periodic simultaneous counts taken at bat houses at Babcock-Webb WMA and recent research suggest that use fluctuates among the seven roost sites (artificial structures) (FWC, *in litt.* 2012; J. Myers, pers. comm. 2013, 2014a–b, d, 2015). Simultaneous counts taken at bat houses at emergence from 2012 to 2014 indicated that Florida bonneted bat roosts are generally small, occupied by 1-14 individuals, except for one location which generally supports 25-44 individuals among two houses (J. Myers, pers. comm. 2013, 2014b). It is not known if there is movement between houses and unknown natural roosts within Babcock-Webb WMA.

The Florida bonneted bat is active year-round and does not have periods of hibernation or torpor. The species is not migratory, but there might have been seasonal shifts in roosting sites (Timm and Genoways 2004). Belwood (1992) reported that, prior to 1967, G.T. Hubbell routinely obtained several individuals per year collected during the winter from people's houses. Precise foraging and roosting habits and long-term requirements are unknown (Belwood 1992). Active year-round, the species is likely dependent upon a constant and sufficient food supply, consisting of insects, to maintain its generally high metabolism. Based upon limited information, Florida bonneted bats feed on flying insects of the following orders: Coleoptera (beetles), Diptera (true flies), Hemiptera (true bugs), and Lepidoptera (moths) (Belwood 1981; Belwood 1992; FBC 2005). An analysis of bat guano (droppings) from the colony using the pine flatwoods in Punta Gorda indicated the sample (by volume) contained coleopterans (55 percent), dipterans (15 percent), and hemipterans (10 percent) (Belwood 1981; Belwood 1992). More recent analyses of bat guano collected from occupied bat houses at Babcock-Webb WMA indicated that the samples contained high percentages of Lepidoptera and Coleoptera (Marks 2013).

Molossids, in general, seem adapted to fast flight in open areas (Vaughan 1966). Various morphological characteristics (*e.g.*, narrow wings, high wing-aspect ratios [ratio of wing length to its breadth]) make *Eumops* well-adapted for efficient, rapid, and prolonged flight in open areas (Findley et al. 1972; Freeman 1981; Norberg and Rayner 1987; Vaughan 1959, as cited in Best et al. 1997). Barbour and Davis (1969) noted that the species flies faster than smaller bats, but cannot maneuver as well in small spaces. Belwood (1992) stated *E. glaucinus* is "capable of long, straight, and sustained flight," which should allow individuals to travel large distances. Norberg and Rayner (1987) attributed long distance flights of Brazilian free-tailed bats to their high wing-aspect ratios, with that species capable of traveling 65 kilometers (km) (40 miles[m]) from its roosting site to its foraging areas (Barbour and Davis 1969). Like other molossids, the Florida bonneted bat's morphological characteristics make it capable of dispersing large distances and generally adapted for low cost, swift, long distance travel from roost site to foraging areas (Norberg and Rayner 1987; K. Gillies, *in litt.* 2012; H. Ober, *in litt.* 2012). Given this, it seems likely that foraging areas may be located fairly long distances from roost sites (H. Ober, *in litt.* 2012). Nonetheless, average foraging distances for the Florida bonneted bat are not known (G. Marks, pers. comm. 2012). Although the species can fly long distances, it likely does not travel farther than necessary to acquire food needed for survival (G. Marks, pers. comm.n 2012).

Bonneted bats are "fast hawking" bats that rely on speed and agility to catch target insects in the absence of background clutter, such as dense vegetation (Simmons et al. 1979; Belwood 1992; Best et al. 1997). Foraging in open spaces, these bats use echolocation to detect prey at relatively long range, roughly 3 to 5 m (10 to 16 feet [ft]) (Belwood 1992). Based upon information from G.T. Hubbell, Belwood (1992) indicated that individuals leave roosts to forage after dark, seldom occur below 10 m (33 ft) in the air, and produce loud, audible calls when flying; calls are easily recognized by some humans (Belwood 1992; Best et al. 1997; Marks and Marks 2008a).

Relatively little is known of the ecology of the Florida bonneted bat, and long-term habitat requirements are poorly understood (Robson 1989; Robson et al. 1989; Belwood 1992; Timm and Genoways 2004). Habitat for the Florida bonneted bat mainly consists of foraging areas and roosting sites, including artificial structures. At present, only three active, natural roost sites are known, and only limited information on historical sites is available.

Recent information on foraging habitat has been obtained largely through acoustical surveys, designed to detect and record bat echolocation calls (Marks and Marks 2008a). Acoustical methods have generally been selected over mist netting as the primary survey methodology because this species flies and primarily forages at heights of 9 m (30 ft) or more (Marks and Marks 2008a). The Florida bonneted bat has a unique and easily identifiable call. While most North American bats vocalize echolocation calls in the ultrasonic range that are inaudible to humans, the Florida bonneted bat echolocates at the higher end of the audible range, which can be heard by some humans as high-pitched calls (Marks and Marks 2008a). Most surveys conducted using acoustical equipment can detect echolocation calls within a range of 30 m (100 ft); call sequences are analyzed using software that compares calls to a library of signature calls (Marks and Marks 2008a). Florida bonneted bat calls are relatively easy to identify because calls are issued at frequencies well below that of other Florida bat species (Marks and Marks 2008a).

More recently, radio-telemetry studies in natural environments are being used as part of studies to close data gaps on the Florida bonneted bat to better understand the species and its relationship and response to fire (Ober and McCleery 2012; A. Bailey, pers. comm. 2013; H. Ober, pers. comm. 2013). Results from a limited pilot study testing the tolerance and effectiveness of transmitters on three female bonneted bats at Babcock-Webb WMA in December 2014 indicated that individuals foraged several miles from their roosts (H. Ober, pers. comm. 2014d; E. Braun de Torrez, pers. comm. 2014).

Habitat

Relatively little is known of the ecology of the Florida bonneted bat, and long-term habitat requirements are poorly understood (Robson 1989; Robson et al. 1989; Belwood 1992; Timm and Genoways 2004). Habitat for the Florida bonneted bat mainly consists of foraging areas and roosting sites, including artificial structures. At present, only three active, natural roost sites are known, and only limited information on historical sites is available. Roosting and foraging areas appear varied, with the species occurring in forested, suburban, and urban areas (Timm and Arroyo-Cabrales 2008).

Florida bonneted bats are closely associated with forested areas because of their tree-roosting habits (Robson 1989; Belwood 1992; Eger 1999), but specific information is limited. Eger (1999) noted that in forested areas, old, mature trees are essential roosting sites for this species. Recent acoustical data and other information indicate that the Florida bonneted bat uses forests and a variety of other natural areas. Echolocation calls have been recorded in a wide array of habitat types: pine flatwoods, pine rocklands, cypress, hardwood hammocks, scrubby flatwoods, mixed shrubs, mangroves, wetlands, swamps, rivers, lakes, ponds, canals, developed park lands, groves, tropical gardens, disturbed nonnative areas, rural lands, residential areas, and urban landscapes (R. Arwood, pers. comm. 2008a–b, 2012, 2013a–c, 2014a–d; Marks and Marks 2008a–c; 2012; Smith 2010; S. Snow, pers. comm. 2011a–b, 2012a–g, 2013; *in litt.* 2012; M. Owen, pers. comm. 2012a–b; R. Rau, pers. comm. 2012; Maehr 2013; S. Maehr, pers. comm. 2013a–b; K. Relish, pers. comm. 2013; F. Ridgley, pers. comm. 2013a–d; 2014a–c; B. Scofield, pers. comm. 2013a–f; K. Smith, pers. comm. 2013).

One of the few historical roost sites used by a small colony of Florida bonneted bats used a longleaf pine (*Pinus palustris*) cavity that had been excavated by a red-cockaded woodpecker (RCW) (*Picoides borealis*) and later enlarged by a pileated woodpecker (*Dryocopus pileatus*); the cavity was 4.6 m (15.1 ft) high (Belwood 1981). One known active natural roost at APAFR, discovered in 2013, is also in an enlarged cavity in a live longleaf pine; the cavity is 6.4 m (21 ft) high with a diameter at breast height (dbh) of 32.8 cm (12.9 in) (B. Scofield, pers. comm. 2013g–i; P. Halupa, pers. obs. 2014a). The known active natural roost at FPNWR, discovered in July 2015, is in a slash pine (*Pinus elliottii*) snag; the cavity is ~9 m (30 ft) high with a dbh of 27.4 cm (10.8 in) and seems to have been formed from a decaying knot or branch (E. Braun de Torrez, pers. comm. 2015). The known active natural roost at BCNP, discovered in December 2015, is also in an old woodpecker tree (slash pine snag); this cavity is also 9 m (30 ft) high (R. Arwood, pers. comm. 2015). Limited information suggests that the Florida bonneted bat may prefer large pines (live and dead) with woodpecker activity for potential roosting, at least in some areas. However, since data are limited, any large or mature trees with suitable structure (e.g., cavities, hollows, or loose/exfoliating bark) may represent potential habitat.

In general, open, fresh water and wetlands provide prime foraging areas for bats (Marks and Marks 2008c). Bats will forage over ponds, streams, and wetlands and will drink when flying over open water (Marks and Marks 2008c). During dry seasons, bats become more dependent on remaining ponds, streams, and wetland areas for foraging purposes (Marks and Marks 2008c). The presence of roosting habitat is critical for day roosts, protection from predators, and the rearing of young (Marks and Marks 2008c). For most bats, the availability of suitable roosts is an important, limiting factor (Humphrey 1975). Bats in south Florida roost primarily in trees and manmade structures (Marks and Marks 2008a). Protective tree cover around bat roosts may be important for predator avoidance and allowing earlier emergence from the roost, thereby allowing bats to take advantage of the peak in insect activity at dusk and extend foraging time (Duverge et al. 2000).

The Florida bonneted bat also uses human structures and other non-natural environments. Florida bonneted bats have been found in the shafts of royal palm leaves (Belwood 1992), under Spanish tile roofs on dwellings (Belwood 1992), in buildings (*e.g.*, in attics, rock or brick chimneys of fireplaces, and especially buildings dating from about 1920–1930) (Timm and Arroyo-Cabrales 2008), in rocky crevices and outcrops on the ground (Timm and Genoways 2004), at golf courses in urban Coral Gables (Marks and Marks 2008a; 2008b; 2012), at a boat dock (R. Arwood, pers. comm. 2008a), at Zoo Miami and surrounding areas within urban public parks (Marks and Marks 2012; Ridgley 2012; F. Ridgley, pers. comm. 2013a, 2013b), and within tropical gardens (S. Snow, pers. comm. 2011b, 2012b, 2012g; Marks and Marks 2012).

Distribution

Records indicating historical range are limited. Morgan (1991) indicated that *E. glaucinus* had been identified from four late Pleistocene (approximately 11,700 years ago) and Holocene (time period beginning 10,000 years ago) fossil sites in the southern half of the Florida peninsula. Late Pleistocene remains are known from Melbourne, Brevard County, and Monkey Jungle Hammock in Miami-Dade County (Allen 1932; Martin 1977, as cited in Belwood 1981 and Timm and Genoways 2004; Morgan 1991). Holocene remains are known from Vero Beach, Indian River County (Ray 1958; Martin1977; and Morgan 1985, 2002, as cited in Timm and Genoways 2004; Morgan 1991), and also Monkey Jungle Hammock (Morgan1991). The largest fossil sample (9 specimens) was reported from the Holocene stratum at Vero Beach (Morgan 1985, as cited in Morgan 1991). The fossil records from Brevard County and Indian River County are considerably farther north than where living individuals have typically been recorded (Timm and Genoways 2004; Marks and Marks 2008b).

Most of the historical records and sightings for this species are several decades old from the cities of Coral Gables and Miami in extreme southeastern Florida, where the species was once believed to be common (Belwood 1992; Timm and Genoways 2004; Timm and Arroyo-Cabrales 2008). G.T. Hubbell also reported a female with young from Fort Lauderdale in Broward County; all of his sightings of Florida bonneted bats were near human dwellings (Belwood 1992). Prior to 1967, G.T. Hubbell regularly heard loud, distinctive calls at night as the bats foraged above buildings, and he routinely obtained several individuals per year that were collected during the winter months from people's houses (Belwood 1992). Other early literature also mentioned Fort Lauderdale as an area where the species occurred (Barbour and Davis1969; Belwood 1992). However, in their comprehensive review, none of the specimens examined by Timm and Genoways (2004) were from

Broward County. Belwood (1981) found a colony in Punta Gorda; however, the longleaf pine in which the bats roosted was felled during highway construction. Recent specimens are only known from extreme southern and southwestern Florida, including Miami-Dade County on the east coast and Charlotte, Collier, and Lee Counties on the Gulf coast (Timm and Genoways 2004).

Endemic to Florida, the Florida bonneted bat has one of the most restricted distributions of any species of bat in the New World (Belwood 1992; Timm and Genoways 2004). Although numerous acoustical surveys for the Florida bonneted bat have been conducted in the past decade by various parties, the best scientific information indicates that the species exists only within a very restricted range, confined to south Florida (Timm and Genoways 2004; Marks and Marks 2008a, 2012).

Based upon available information, the Florida bonneted bat appears to be restricted to south, southwest, and south-central Florida. The core range may primarily consist of habitat within Charlotte, Lee, Collier, Monroe, and Miami-Dade Counties. Recent data also indicate use of portions of Okeechobee, Polk, DeSoto, Hendry, and Broward Counties and possible use of areas within Glades and Highlands Counties.

Population Dynamics

Little information exists on historical population levels. The Florida bonneted bat was considered common in the Miami-Coral Gables area because of regular collection of specimens from 1951 to 1965 (Robson 1989; Belwood 1992). Jennings (1958) indicated the species was not abundant, noting a total of 20 individuals had been taken from 1936 to 1958. Prior to 1967, G.T. Hubbell regularly heard loud, distinctive calls at night as the bats foraged above buildings in the Miami area (R. Timm, pers. comm. 2012), and he routinely obtained several individuals per year that were collected from people's houses (Belwood 1992). Barbour and Davis (1969) indicated that, on average, about two individuals per year were brought to the Crandon Park Zoo in Miami, due to injuries, but no time period was specified.

Unpublished data from a survey of 100 pest control companies in 1982 on the southeastern coast of Florida showed that requests to remove "nuisance" bats from this area all but ceased beginning in the 1960s (Belwood 1992), indicating a sharp decline in bats in general. Timm and Genoways (2004) found only three records of Florida bonneted bats in the greater Miami area after 1965. The colony found near Punta Gorda in 1979 appeared to be the only recorded occurrence since 1967 (Belwood 1981). A 6-week field trip in 1980 to locate other occurrences was unsuccessful and led to the belief this species was "probably extinct in Florida" (Belwood 1992). No new evidence of this species was found from 1979 until 1988 when Robson et al. (1989) found a pregnant female in Coral Gables (Robson 1989).

Timm and Genoways (2004) surmised the Florida bonneted bat may have been uncommon for several decades, based upon the work of previous researchers (Barbour 1945, as cited in Timm and Genoways 2004; Jennings 1958; Layne 1974), who noted the scarcity of bats in southern Florida. Owre (1978) observed fewer than a dozen individuals in roughly 25 years and noted few mammalogists had success in finding the species. Robson (1989) indicated the decline of specimens and sightings in the mid-1960s is reflected in the museum record and noted the 1950s and 1960s was a period of rapid growth in the Miami area. Robson (1989) suggested the resulting disturbance and destruction of native habitat may have flushed a large number of specimens out of established roosts, resulting in a high collection rate. A status survey

conducted in 1989, encompassing 25 sites within natural areas within a nine county area, found no new evidence of this species (Robson 1989).

Based upon available data and information, the Florida bonneted bat occurs within a restricted range and in apparent low abundance (Marks and Marks 2008a; 2012; Timm and Arroyo-Cabrales 2008; FWC 2011a; FWC 2011b; R. Timm, pers. comm. 2012, *in litt.* 2012). Actual population size is not known, and no population viability analyses are available (FWC 2011a; 2013; K. Bohn, *in litt.* 2012). However, population size is thought to be less than that needed for optimum viability (Timm and Arroyo-Cabrales 2008; K. Bohn, *in litt.* 2012). As part of their evaluation of listing criteria for the species, Gore et al. (2010) found the extent of occurrence appears to have declined on the east coast, but trends on the west coast could not be inferred due to limited information.

In his independent review of the FWC's Biological Status Report, Ted Fleming, Emeritus Professor of biology at University of Miami, noted anecdotal evidence from the 1950s and 1960s suggests this species was more common along Florida's southeast coast compared with the present (FWC 2011b). Fleming stated, "There can be no doubt that *E. floridanus* is an uncommon bat throughout its very small range. Its audible echolocation calls are distinctive and easily recognized, making it relatively easy to survey in the field" (FWC 2011b). He also stated he does not doubt the total State population numbers "in the hundreds or low thousands" (FWC 2011b).

Similarly, in response to a request for information as part of the Service's annual Candidate Notice of Review, Robert Timm (pers. comm. 2012), Curator of Mammals at Department of Ecology and Evolutionary Biology and Biodiversity Institute at the University of Kansas, indicated that numbers are low, in his view, as documented by survey attempts. "*Eumops* are very obvious bats where they occur because of their large size and distinctive calls. Given the efforts to locate them throughout southern Florida, if they were there in any significant numbers, they would have been located" (R. Timm, pers. comm. 2012).

Results of the 2006-2007 range-wide survey suggested that the Florida bonneted bat is a rare species with limited range and low abundance (Marks and Marks 2008a). Based upon results of both the range-wide study and survey of select public lands, the species was found at 12 locations (Marks and Marks 2008b), but the number and status of the bat at each location are unknown. Based upon the small number of locations where calls were recorded, the low numbers of calls recorded at each location, and the fact that the species forms small colonies, Marks and Marks (2008a) stated that it is possible that the entire population of Florida bonneted bats may number less than a few hundred individuals.

Results of the 2010 to 2012 surveys and additional surveys by other researchers identified new occurrences within the established range (*i.e.*, within Miami area, areas of Everglades National Park [ENP] and BCNP) (S. Snow, pers. comm. 2011a, 2011b, 2012; R. Arwood, pers. comm. 2012; Marks and Marks 2012), however, not in sufficient numbers to alter previous population estimates. In their 2012 report on the status of the species, Marks and Marks (2012) provided an updated estimation of population size, based upon 120 nights of surveys at 96 locations within peninsular Florida, results of other known surveys, and personal communications with others involved in Florida bonneted bat work. Based upon an average colony size of 11 and an estimated 26 colonies within the species' range, researchers estimated the total Florida bonneted bat population at 286 bats at that time (Marks and Marks 2012). Since that time, the discovery of

the three natural roost sites and the continuation of additional research at occupied bat houses has provided opportunities for more quantitative emergence counts. This suggests that previous estimates of hundreds to a few thousand might be more representative of population size.

In summary, we cannot accurately estimate population size at this time. This is in part because so few roosts are known, roost switching can occur, emergence counts are not conducted simultaneously (or even at the same time of year), and precise counts are difficult to obtain due to environmental conditions and the propensity for some individuals to remain within roosts during counts.

Threats

The uncertainty regarding the Florida bonneted bat's specific habitat needs and requirements (*i.e.*, location of roost sites) arguably contributes to the potential impacts from the following threats by increasing the likelihood of inadvertent impacts to and losses of habitat.

Present or Threatened Destruction, Modification or Curtailment of its Habitat or Range

Loss of Forested Habitat and Other Land Use Changes
Loss of native forested habitat and roost sites are major threats to the Florida bonneted bat (Belwood 1992; Timm and Arroyo-Cabrales 2008). The retention of old trees with hollows and cavities are particularly important to this species. In natural areas, this species may be impacted when forests are converted to other uses or when old trees with cavities are removed (Belwood 1992; Timm and Arroyo-Cabrales 2008).

Significant land use changes have occurred through time in south Florida, including major portions of the species' historical and current range. In his examination of Florida's land use history, Solecki (2001) stated that tremendous land use changes took place from the early 1950s to the early and mid-1970s. The human population in south Florida increased from fewer than 20,000 people in 1920, to more than 4.6 million by 1990 (Solecki 2001). The population of Miami-Dade County, one area where the Florida bonneted bat was historically common, increased from fewer than 500,000 people in 1950, to more than 2.6 million in 2014 (http://quickfacts.census.gov). In one projection, all counties with current Florida bonneted bat occurrences were forecasted to increase in human population density, with most counties expected to grow by more than 750 people per square mile by 2060 (Wear and Greis 2011). As a result of the growth in human population, approximately 90 percent of the forested habitats in Florida have been altered or eliminated, and losses are expected to continue (Wear and Greis 2002). In the Southern Forest Resource Assessment, Florida was identified as one of the areas expected to experience substantial losses of forest in response to human population and changes in income (Wear and Greis 2002).

Land Management Practices
Although species occurrences on conservation lands are inherently more protected than those on private lands, habitat alteration during management practices may impact natural roosting sites because the locations of such sites are unknown. For example, removal of old or live trees with cavities during activities associated with forest management (*e.g.*, thinning, pruning), prescribed fire, exotic species treatment, or trail maintenance may inadvertently remove roost sites, if such

sites are not known. Loss of an active roost or removal during critical life-history stages (*e.g.*, when females are pregnant or rearing young) can have severe ramifications, considering the species' small population size, low fecundity, and roost site fidelity.

Loss of Artificial Structures

Since the Florida bonneted bat will use human dwellings and other artificial structures, it is also vulnerable to habitat loss and alteration in urban environments (Belwood 1992; Timm and Arroyo-Cabrales 2008). Removal of buildings with spaces suitable for roosting is a threat to this species (Timm and Arroyo-Cabrales 2008). Robson (1989) stated that seemingly innocuous activities like destroying abandoned buildings and sealing barrel-tile roof shingles may have a severe impact on remaining populations in urban areas. The use of buildings or other structures inhabited by or near humans places bats at risk of inadvertent or purposeful removal and displacement.

Disease or Predation

The effects of disease and predation are not well known. Given the Florida bonneted bat's overall vulnerability, both disease and predation could pose threats to its survival. White-nose syndrome (WNS) is an emerging infectious disease affecting insectivorous, cave-dwelling bats. WNS is caused by the cold-loving fungus, *Geomyces destructans,* a newly described fungus, and is named after the white fungal growth that often occurs on the muzzle of affected bats (Gargas et al. 2009; Lorch et al. 2011). In North America, *G. destructans* appears to infect bats only during winter hibernation. Because the Florida bonneted bat spends its entire life cycle outside of caves and mines and in subtropical environments where no torpor or hibernation is required, we do not anticipate that it will be adversely affected by WNS. However, since the fungus is new to science and North America, it is not known how it may evolve or change in the future. At this time, it is difficult to assess whether disease is currently or likely to become a threat to the Florida bonneted bat. With anticipated climatic changes and increased environmental stress, it is possible that disease will have a greater impact on the Florida bonneted bat in the future.

In general, animals such as owls, hawks, raccoons, skunks, and snakes prey upon bats (Harvey et al. 1999). However, few animals consume bats as a regular part of their diet (Harvey et al. 1999). There is only one record of natural predation on the Florida bonneted bat (Timm and Genoways 2004). A skull of one specimen was found in a regurgitated owl pellet at the Fakahatchee Strand Preserve State Park (FSPSP) in June 2000 (Timm and Genoways 2004; C. Marks, pers. comm. 2006; Marks and Marks 2008a; M. Owen, pers. comm. 2012a, 2012b). Although evidence of predation is lacking, the species is presumably affected by some level of predation from native wildlife (*e.g.*, hawks, owls, raccoons, rat snakes) and the large number of introduced and nonnative reptiles (*e.g.*, young Burmese pythons, boa constrictors) (Krysko et al. 2011; M. Ludlow, *in litt.* 2012; R. Timm, *in litt.* 2012). Giant constrictors are habitat generalists, can grow and reproduce rapidly, and are arboreal when young, placing birds and arboreal mammals, such as bats, at risk (*http://www.fort.usgs.gov/FLConstrictors/*). Due to limited information, we are not able to determine the extent to which predation may be impacting the Florida bonneted bat at this time. However, given the species' apparent small population size and overall vulnerability, it is reasonable to assume that predation is a potential threat, which may increase in the future.

Other Natural or Manmade Factors Affecting its Continued Existence

Inadvertent and Purposeful Impacts from Humans

In general, bats using old or abandoned and new dwellings are at significant risk. Bats are often removed when they are no longer tolerated by humans or inadvertently killed or displaced when structures are demolished. Adverse human impacts on bats involve direct killing, persecution, vandalism, and disturbance of hibernating and maternity colonies (Harvey et al. 1999). Homeowners and professionals use a variety of methods to remove bats, including lethal means. Even when attempts are made to remove bats humanely, bats may be sealed into buildings. Despite regulations and efforts to raise awareness, in some situations, bats are still likely removed through inhumane and prohibited methods (*e.g.*, removed from roosts with vacuum cleaner–like apparatuses) and excluded from artificial roost sites during sensitive time periods (*e.g.*, inside the maternity season before young are volant (capable of flying)) (A. Kropp, pers. comm. 2009). Since roosting sites are largely unknown, the potential to remove and exclude Florida bonneted bats from human dwellings and artificial structures, either inadvertently or accidentally, is high. Despite regulatory protections provided under Federal and Florida laws, direct and indirect threats from humans continue, especially in urban, suburban, and residential areas.

Bonneted bats using urban or suburban areas may be negatively impacted by activities such as: routine landscaping, removing dead pine or royal palm trees, pruning or trimming trees (especially cabbage palms), sealing barrel-tile roof shingles with mortar, destroying abandoned buildings, and clearing lots of native vegetation (Robson 1989). As the species may also use palm fronds for roosting, the trimming of fronds and removal of mature palm trees for landscaping may negatively impact individuals (K. Gillies, *in litt.*2012). Disturbance to summer maternity colonies of bats is extremely detrimental (Harvey et al. 1999). In general, maternity colonies of bats do not tolerate disturbance, especially when flightless newborns are present (Harvey et al. 1999). Newborns or immature bats may be dropped or abandoned by adults if disturbed (Harvey et al. 1999). In short, wherever this species occurs in or near human dwellings or structures, it is at risk of inadvertent or purposeful removal, displacement, and disturbance.

Routine maintenance and repair of bridges and overpasses or other infrastructure are potential threats. Bats can use highway structures either as day or night roosts (Keeley and Tuttle 1999). An estimated 24 of the 45 species of bats in the United States have been documented to use bridges or culverts as roosts, and 13 other bat species are likely to use such structures based upon their known roosting preferences (Keeley and Tuttle 1999). To date, the Florida bonneted bat has not been documented to use these structures. However, like other molossids, bonneted bats can potentially use these structures for roosting (Keeley and Tuttle 1999). When bridges and overpasses are cleaned, bats may be subjected to high water pressure from hoses, which likely results in injury or death (C. Marks, pers. comm. 2007). Incidences involving high pressure water hoses have reportedly decreased in Florida, and the FDOT is working with FWC to increase their efforts to protect bats during maintenance and repair activities at bridge sites with bats (FWC, *in litt.* 2012).

Competition for Tree Cavities

Suitable natural roost sites in south Florida appear limited, and competition for available tree cavities may be greater now than historically. In 1992, Belwood (1992) stated that tree cavities were rare in southern Florida and that competition for available cavities from native wildlife (*e.g.*, southern flying squirrel, red-headed woodpecker, corn snake) was intense. Competition for cavities since that time has presumably increased, due largely to continued loss of cavity trees and habitat and the influx of nonnative or introduced species, which vie for available roosting or nesting locations.

Proposed Wind Energy Facilities

Migratory, tree-dwelling, and insectivorous bat species are being killed at wind turbines in large numbers across North America (Kunz et al. 2007; Cryan and Barclay 2009). Based upon data modified from Johnson (2005, as cited in Arnett et al. 2008), researchers found that the Brazilian free-tailed bat comprised 85.6 percent of bat mortalities noted at a wind energy facility in Woodward, Oklahoma, and 41.3 percent of bat mortalities at a High Wind, California, wind energy facility. Since the Florida bonneted bat is also a free-tailed bat, it may demonstrate some similar behaviors that place it at risk when encountering wind energy facilities.

The cause of bat mortality at wind energy facilities is not a simple one of direct contact with blades or towers. Baerwald et al. (2008) found that barotrauma is the cause of death in a high proportion of bats found at wind energy facilities. Barotrauma involves tissue damage to air–containing structures (such as lungs) caused by rapid or excessive pressure change; wind turbine blades may create zones of low pressure as air flows over them. In their examination, Baerwald et al. (2008) found 90 percent of the bat fatalities involved internal hemorrhaging consistent with barotrauma, suggesting that even if echolocation allows for bats to detect and avoid turbine blades, they may be incapacitated or killed by internal injuries caused by rapid pressure reductions that they cannot detect.

While bat fatalities from wind energy facilities are well documented, potential impacts to the Florida bonneted bat are difficult to evaluate at this time, partly due to the uncertainty involving many factors (*e.g.*, location of facilities, operations, foraging distance). Certain aspects of the species' status and life history may increase vulnerability to impacts from wind energy facilities. The species' small population and low fecundity make any additional potential sources of mortality cause for concern. The species' high and strong flight capabilities and fast-hawking foraging behavior may increase risk. Conversely, as the species is non-migratory, potential impacts from wind energy facilities may not be as great in magnitude as perhaps other bat species that are migratory.

Pesticides and Contaminants

The impacts of pesticides and other environmental contaminants on bat species are largely unstudied, particularly in the case of the Florida bonneted bat. The life history of the Florida bonneted bat may make it susceptible to pesticide exposure from a variety of sources. Mosquito control spraying activities commonly begin at dusk when mosquitoes are most active (http://www.miamidade.gov/publicworks/mosquito-spraying.asp). Because the Florida bonneted bat forages at dusk and after dark, the possibility exists for individuals to be directly exposed to airborne mosquito control chemicals or to consume invertebrates containing pesticide residues from recent applications. Additionally, because the Florida bonneted bat has been documented

to roost in residential areas (Belwood 1992), it is possible for individuals to be exposed, either directly or through diet, to a variety of undocumented, localized pesticide applications conducted by homeowners. The potential exposure to or impacts of agricultural chemical application on the Florida bonneted bat in Florida are largely unknown.

A reduction in the number of flying insects is a potential secondary effect to consider when evaluating the impact of pesticides on the Florida bonneted bat. In his status survey for the Florida bonneted bat, Robson (1989) suggested that mosquito control programs are contributing to reduced food supplies for bats.

In addition to pesticide exposure, mercury represents another potential threat to the Florida bonneted bat that has not been investigated. According to the National Atmospheric Deposition Program, the mercury deposition rate in south Florida is among the highest in the United States (*http://nadp.isws.illinois.edu*). The movement of mercury through the aquatic system and into the terrestrial food web through emergent invertebrates has been documented in other areas (Cristol et al. 2008; Konkler and Hammerschmidt 2012). Assuming that a similar mechanism is occurring in south Florida, coupled with high mercury deposition rates, the consumption of such invertebrates may constitute a pathway for the Florida bonneted bat to be exposed to mercury.

Ecological Light Pollution

Depending upon scale and extent, ecological light pollution can have demonstrable effects on behavioral and population ecology of organisms by: disrupting orientation (or causing disorientation), affecting movements (attraction or repulsion), altering reproductive behaviors, and influencing communication (Longcore and Rich 2004). The effects of artificial lighting on bats and their prey have been partially studied. A wide array of insects have been found to be attracted to lights (Frank 1988; Eisenbeis and Hassel 2000; Kolligs 2000, as cited in Longcore and Rich 2004). Although the primary prey items for the Florida bonneted bat are not known, it is possible that artificial lighting may be affecting insect abundance or availability and prey base in some locations. Longcore and Rich (2004) suggested that increased food concentration at artificial light sources may be a positive effect for those species that can exploit such sources, but it also could result in altered community structure. The Florida bonneted bat's behavioral response to ecological light pollution has not been examined, and effects are not known. The species' fast-flight and long range flight capabilities may make it more able to exploit insects congregated at artificial light sources or more susceptible to risks associated with such responses (*e.g.*, increased predation or harm from humans).

Effects of Small Population Size, Isolation, and Other Factors

The Florida bonneted bat is vulnerable to extinction due to its small population size, restricted range, few occupied areas, low fecundity, and relative isolation. The Florida bonneted bat only occurs in south, southwest, and south-central Florida and only in limited numbers (Timm and Genoways 2004; Marks and Marks 2008a; 2008b; 2012). Based on the small number of locations where calls were recorded, the low numbers of calls recorded at each location, and the fact that the species forms small colonies, Marks and Marks (2008a) stated that it is possible that the entire population of Florida bonneted bats may number less than a few hundred individuals. Other experts suggested the population may be "in the hundreds or low thousands" (FWC 2011b). In general, species with restricted ranges are often characterized by small population

sizes and high habitat specialization and are, therefore, more vulnerable to stochastic, demographic, and environmental processes (Lande et al. 2003, as cited in Lee and Jetz 2011).

Slow reproduction and low fecundity are also serious concerns because this species produces only one young at a time and roosts singly or in small groups (FBC 2005; Timm and Arroyo-Cabrales 2008). Assuming a lifespan of 10 to 20 years for bats of this size (Wilkinson and South 2002), the average generation time is estimated to be 5 to 10 years (Gore et al. 2010). The small numbers within localized areas may also make the Florida bonneted bat vulnerable to extinction due to genetic drift (loss of unique genes through time), inbreeding depression (reduced fitness or survival due to low genetic diversity), extreme weather events (*e.g.*, hurricanes), and random or chance changes to the environment (Lande 1988; Smith 1990) that can significantly impact its habitat.

In general, isolation, whether caused by geographic distance, ecological factors, or reproductive strategy, will likely prevent the influx of new genetic material and can result in low diversity, which may impact viability and fecundity (Chesser 1983). Distance between subpopulations or colonies, the small sizes of colonies, and the general low number of bats may make recolonization unlikely if any site is extirpated. Isolation of habitat can prevent recolonization from other sites and potentially result in extinction. The probability of extinction increases with decreasing habitat availability (Pimm et al. 1988; Noss and Cooperrider 1994; Thomas 1994; Kale 1996). Although changes in the environment may cause populations to fluctuate naturally, small and low density populations are more likely to fluctuate below a minimum viable population (*i.e.*, the minimum or threshold number of individuals needed in a population to persist in a viable state for a given interval) (Shaffer 1981; Shaffer and Samson 1985; Gilpin and Soule′ 1986). If populations become fragmented, genetic diversity will be lost as smaller populations become more isolated (Rossiter et al. 2000). Fragmentation and aspects of the species' natural history (*e.g.*, reliance on availability of suitable roost sites, constant supply of insects) can contribute to and exacerbate other threats facing the species.

Environmental Stochasticity

Natural events such as severe hurricanes may cause the loss of old trees with roosting cavities (Timm and Genoways 2004). Major impacts of intense storms may include mortality during the storm, exposure to predation immediately following the storm, loss of natural or artificial roost sites, and impacts on foraging areas and insect abundance (Marks and Marks 2008a; W. Kern, Jr. *in litt.* 2012; R. Timm, *in litt.* 2012). In general, bats could be blown into stationary objects or impacted by flying debris, resulting in injury or mortality (Marks and Marks 2008a). Trees with cavities can be snapped at their weakest point, which for the Florida bonneted bat may have the most severe impact since the species uses cavities (Marks and Marks 2008a); competition for available cavities in south Florida is intense (Belwood 1992), and suitable roosting sites in general are often limiting factors (Humphrey 1975). Displaced bats may be found on the ground or other unsuitable locations and exposed to natural predators, domestic pets, and humans (Marks and Marks 2008a). As pregnant females have been found in June through September, hurricanes in Florida can occur at critical life-history stages—when females are pregnant or rearing young—possibly resulting in losses of pregnant females, newborns, or juvenile pups (Marks and Marks 2008a). Because the entire population may be less than a few hundred individuals (Marks and Marks 2008a; 2012), the Florida bonneted bat may not be able

to withstand losses from intense storms or storms at a critical life-history stage. Alternatively, less intense hurricanes or mild, isolated storms may create roosting opportunities, if tree snags (dead trees) are left in place.

Given the Florida bonneted bat's tree-roosting habits, apparent low abundance, few isolated colonies, and use of coastal areas, the species is at risk from hurricanes, storms, or other extreme weather. Depending on the location and intensity, it is possible that the majority of Florida bonneted bats could be killed in a fairly broad area during a single, large, high-intensity hurricane (R. Timm, *in litt.* 2012). More frequent and intense storms, increased storm surges, and coastal flooding can impact Florida bonneted bats and roosting and foraging habitat.

This species is also vulnerable to prolonged extreme cold weather events. Molossids, the family of bats which includes the Florida bonneted bat, appear to be an intermediate between tropical and temperate zone bat families (Arlettaz et al. 2000). Members of this family that inhabit the warmer temperate and subtropical zones incur much higher energetic costs for thermoregulation during cold weather events than those inhabiting northern regions (Arlettaz et al. 2000). At such temperatures, bats are likely unable to find food and cannot rewarm themselves. Such a stochastic, but potentially severe, event poses a significant threat to the entire population. Impacts of past cold weather events are evident, but the effect on all colonies is not known.

Climate Change and Sea Level Rise

The effects resulting from climatic change, including sea level rise and coastal squeeze, are expected to become severe in the future and result in additional habitat losses, including the loss of roost sites and foraging habitat. Three subpopulations of the Florida bonneted bat occur in at-risk coastal locations (Gore et al. 2010), and the effects of sea level rise are expected to be a continual problem for species using coastal habitats (Saha et al. 2011). Within the species' range, low-lying areas in Collier, Lee, Miami-Dade, and Monroe Counties appear most vulnerable to inundation. Much of low-lying, coastal south Florida "will be underwater or inundated with saltwater in the coming century" (U. S. Climate Change Science Program (CCSP) 2008). This means that large portions of occupied, suitable, and potential roosting and foraging habitat for the Florida bonneted bat in low-lying areas will likely be either submerged or affected by increased flooding.

Climate change is likely to increase occurrence of saltwater intrusion as sea level rises (Intergovernmental Panel on Climate Change [IPCC] 2008), resulting in changes to plant species composition based upon tolerance to salinity and drought. Such changes in vegetation will likely impact the Florida bonneted bat, since the species uses forested areas and coastal habitats.

Hydrology has a strong influence on plant distribution in these and other coastal areas (IPCC 2008). Such communities typically grade from salt to brackish to freshwater species. Human developments will also likely be significant factors influencing whether natural communities can move and persist ((IPCC 2008; CCSP 2008). Climate change, human population growth, forest management, and land use changes are also expected to increase water stress (water demand exceeding availability) within areas of the south, and south Florida is considered a hot spot for future water stress (Wear and Greis 2011). For the Florida bonneted bat, this means that some

habitat in coastal areas will likely change as vegetation changes and additional human developments encroach.

Drier conditions and increased variability in precipitation are also expected to increase the severity of wildfire events. Climate changes are forecasted to extend fire seasons and the frequency of large fire events throughout the Coastal Plain (Wear and Greis 2011). Increases in the scale, frequency, or severity of wildfires could also have severe ramifications on the Florida bonneted bat, considering its forest-dwelling nature and general vulnerability. Climate changes may also affect foraging habitat and prey availability. Increased plant water stress is likely to impact vegetation community composition and chemical composition of plants, which would likely affect insect availability and the timing of insect availability to foraging bats (H. Ober, *in litt.* 2012).

Ongoing Conservation Efforts

Extensive conservation efforts are underway by researchers, government agencies, non-profit organizations, stakeholders, and private individuals. Efforts are focusing on: (1) filling information gaps regarding the species and its habitat needs and preferences; (2) conserving roosting and foraging habitats; (3) reducing known threats, wherever possible; and (4) increasing public awareness.

Research efforts continue to examine life history, population dynamics, and habitat needs for the Florida bonneted bat. Studies are being conducted to identify additional occupied areas, evaluate diet, determine roost site fidelity, examine population dynamics, understand movement and foraging distance, develop a protocol for attachment of radio transmitters, identify habitat needs, analyze effects of fire, and locate natural roost sites.

Identifying natural roost sites is particularly important, as only three are currently known. Finding additional roost sites is a key component to better understanding the species' habitat needs, which will greatly contribute to conservation of the species. Knowing where roosts occur and determining better methods to detect them will enhance endeavors to learn more about life history and help focus habitat protection efforts on specific locations, especially if roost sites may be a limited resource for the species.

The FWC's Species Action Plan details the actions necessary to improve the conservation status of the Florida bonneted bat. The Florida Bonneted Bat Working Group was established in 2012 to bring together a consortium of public and private agencies, organizations, and educational institutions to leverage available resources, prioritize conservation actions, and collaborate on research directives for the Florida bonneted bat. The Service intends to work with stakeholders to develop a recovery outline and recovery plan in the near future.

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STATUS OF THE SPECIES – Florida panther (*Puma concolor coryi*)

Legal Status – On March 11, 1967, the Service listed the panther as endangered (32 FR 4001) throughout its historic range, and they received Federal protection under the passage of the Act in 1973. In addition, the Florida Panther Act (Florida Statute 372.671), a 1978 Florida State law, made killing a panther a felony. The panther is listed as endangered by the States of Florida, Georgia, Louisiana, and Mississippi in addition to its Federal listing. Critical habitat has not been designated for the panther.

Species Description

Appearance/Morphology

An adult panther is unspotted and typically rusty reddish-brown on the back, tawny on the sides, and pale gray underneath. Adult males can reach a length of 7 feet (ft) (2.1 meters [m]) from their nose to the tip of their tail and may exceed 161 pounds (lbs) (73 kg) in weight; but, typically adult males average around 116 lbs (52.6 kg) and stand about 24 to 28 inches (in) (60 to 70 centimeters [cm]) at the shoulder (Roelke 1990). Female panthers are smaller with an average weight of 75 lbs (34 kg) and length of 6 ft (1.8 m) (Roelke 1990). Panther kittens are gray with dark brown or blackish spots and five bands around the tail. The spots gradually fade as the kittens grow older and are almost unnoticeable by the time they are 6 months old. At this age, their bright blue eyes slowly turn to the light-brown straw color of the adult (Belden 1988).

Three external characteristics: a right angle crook at the terminal end of the tail, a whorl of hair or cowlick in the middle of the back, and irregular, white flecking on the head, nape, and shoulders – not found in combination in other subspecies of *Puma* (Belden 1986), were commonly observed in panthers through the mid-1990s. The kinked tail and cowlicks were considered manifestations of inbreeding (Seal 1994); whereas the white flecking was thought to be a result of scarring from tick bites (Maehr 1992). Four other abnormalities prevalent in the panther population prior to the mid-1990s were cryptorchidism (one or two undescended testicles), low sperm quality, atrial septal defects (the opening between two atria in the heart fails to close normally during fetal development), and immune deficiencies; and these were suspected to be the result of low genetic variability (Roelke et al. 1993).

Taxonomy

The panther was first described by Charles B. Cory in 1896 as *Felis concolor floridana* (Cory 1896). The type specimen was collected in Sebastian, Florida. Bangs (1899), however, believed the panther was restricted to peninsular Florida and could not intergrade with other *Felis* sp. Therefore, he assigned it full specific status and named it *Felis coryi* since *Felis floridana* had been used previously for a bobcat (*Lynx rufus*).

Culver et al. (2000) examined genetic diversity within and among the described subspecies of *Puma concolor* using three groups of genetic markers and proposed a revision of the genus to include only six subspecies, one of which encompassed all puma in North America including the panther. They determined the panther was one of several smaller populations that had unique features. Specifically, the number of polymorphic microsatellite loci and amount of variation were lower, and it was highly inbred. The degree to which the scientific community accepted the results of Culver et al. (2000) and the proposed change in taxonomy is not resolved (Service 2008). The panther remains listed as a subspecies, and continues to receive protection pursuant to the Act.

Life History

Male panthers are polygynous, maintaining large, overlapping home ranges containing several adult females and their dependent offspring. Breeding activity peaks from December to March (Shindle et al. 2003). Litters (n = 82) are produced throughout the year, with 56 to 60 percent of births occurring between March and June (Jansen et al. 2005; Lotz et al. 2005). The greatest number of births occurs in May and June (Jansen et al. 2005; Lotz et al. 2005). Average litter size is 2.4 ± 0.91 (standard deviation) kittens. Seventy percent of litters are comprised of either two or three kittens.

Panther dens are usually located closer to upland hardwoods, pinelands, and mixed wet forests and farther from freshwater marsh-wet prairie (Benson et al. 2008). Most den sites are located in dense saw palmetto (*Serenoa repens*), shrubs, or vines (Maehr 1990a; Shindle et al. 2003, Benson et al. 2008). Den sites are used for 6 to 8 weeks by female panthers and their litters from birth to weaning (Benson et al. 2008). Independence and dispersal of young typically occurs at 18 months, but may occur as early as one year (Maehr 1992).

Benson et al. (2009) analyzed survival and cause-specific mortality of subadult and adult panthers. They found that sex and age influenced panther survival, as females survived better than males, and older adults (≥10 years) survived poorly compared with younger adults. Genetic ancestry strongly influenced annual survival of subadults and adults after introgression, as F1 generation admixed panthers survived longer than pre-introgression panthers and non-F1 admixed individuals (Benson et al. 2009).

Mortality records for uncollared panthers have been kept since February 13, 1972, and for radio-collared panthers since February 10, 1981 (FWC 2013, and FWC unpublished data). Through June 25, 2014, 424 mortalities have been documented (FWC 2014). Of the 424 total mortalities, 181 were radio-collared. Intraspecific aggression was the leading cause of mortality for radio-collared panthers, and was more common for males than females (Benson et al. 2009). Older-adult males had significantly higher, and subadult males had marginally higher, mortality due to intraspecific aggression than adult males in their prime (Benson et al. 2009). Most

intraspecific aggression occurs between male panthers; but, aggressive encounters between males and females have occurred, resulting in the death of the female. Defense of kittens or of a kill is suspected in half (five of ten) of the known instances through 2003 (Shindle et al. 2003).

Following intraspecific aggression, the greatest causes of mortality for radio-collared panthers was from unknown causes, vehicles, and other (Benson et al. 2009). From February 13, 1972, through June 30, 2014, 215 panthers (radio-collared and uncollared) were hit by vehicles (FWC 2014). These collisions resulted in 203 panther fatalities and 12 non-fatal injuries. The number of panther/vehicle collisions per year is positively correlated with the annual panther count (McBride et al. 2008).

Female panthers are considered adult residents if they are older than 18 months, have established home ranges, and have bred (Maehr et al. 1991). Land et al. (2004) reported 23 of 24 female panthers first captured as kittens survived to become residents and 18 (78.3 percent) produced litters; 1 female was too young to determine residency. Male panthers are considered adult residents if they are older than 3 years and have established a home range that overlaps with females. Thirty-one (31) male panthers were captured as kittens and 12 (38.7 percent) of these cats survived to become residents (Jansen et al. 2005). "Successful male recruitment may depend on the death or home range shift of a resident adult male" (Maehr et al. 1991). Turnover in the breeding population is low with documented mortality in radio-collared panthers being greatest in subadult and non-resident males (Maehr et al. 1991; Shindle et al. 2003).

Den sites of female panthers have been visited since 1992 and the kittens tagged with passive integrated transponder chips. Annual survival of these kittens has been determined to be 0.328 ± 0.072 (SE) (Hostetler et al. 2009). There was no evidence survival rate differed between male and female kittens or was influenced by litter size. Hostetler et al. (2009) found kitten survival generally increased with degree of admixture with introduced Texas pumas and decreased with panther abundance. Kitten survival is lowest during the first 3 months of their lives (Hostetler et al. 2009).

Panther dispersal begins after a juvenile becomes independent from its mother and continues until it establishes a home range. Dispersal distances are greater for males than females. The maximum dispersal distance recorded for a young male was 139.2 mi (224.1 km) over a 7-month period followed by a secondary dispersal of 145 mi (233 km). Comiskey et al. (2002) found males disperse an average distance of 25 mi (40 km) and females typically remain in or disperse short distances from their natal ranges. Female dispersers establish home ranges less than one average home range width from their natal range (Maehr et al. 2002a). Maehr et al. (2002a) reported all female dispersers ($n = 9$) were successful at establishing a home range whereas only 63 percent of males ($n = 18$) were successful. Dispersing males usually go through a period as transient (non-resident) subadults, moving through the fringes of the resident population and often occupying suboptimal habitat until an established range becomes vacant (Maehr 1997).

Most panther dispersal occurs south of the Caloosahatchee River. However, panthers have been documented north of the Caloosahatchee River many times since February 1972 through field signs (*e.g.*, tracks, urine markers, scats), camera-trap photographs, carcasses from vehicle-related mortalities, telemetry from radio-collared animals (Land and Taylor 1998; Land et al. 1999; Shindle et al. 2000; Maehr et al. 2002b; Belden and McBride 2005), captured animals (one of which was radio collared), and one skeleton.

The Caloosahatchee River, a narrow (295-328 ft [90-100 m]), channelized river, is probably not a significant barrier to panther movements. Western subspecies of *Puma* are known to cross wide, swift-flowing rivers up to a mile in width (Seidensticker et al. 1973; Anderson 1983). However, the combination of the river, SR 80, and land uses along the river seems to have somewhat restricted panther dispersal northward (Maehr et al. 2002b). Documented physical evidence of at least 15 uncollared male panthers has been confirmed north of the river since 1972, but neither female panthers nor reproduction have been documented in this area since 1973 (Belden and McBride 2005).

Panthers require large areas to meet their needs. Numerous factors influence panther home range size, including: habitat quality, prey density, and landscape configuration (Belden 1988; Comiskey et al. 2002). Home range sizes of six radio-collared panthers monitored between 1985 and 1990 averaged 128,000 ac (51,800 hectares [ha]) for resident adult males and 48,000 ac (19,425 ha) for resident adult females; transient males had a home range of 153,599 ac (62,160 ha) (Maehr et al. 1991). Comiskey et al. (2002) examined the home range size for 50 adult panthers (residents greater than 1.5 years old) monitored in south Florida from 1981 to 2000 and found resident males had a mean home range of 160,639 ac (65,009 ha) and females had a mean home range of 97,920 ac (39,627 ha). Beier et al. (2003) found home range size estimates for panthers reported by Maehr et al. (1991) and Comiskey et al. (2002) to be reliable.

Annual minimum convex polygon home range sizes of 52 adult radio-collared panthers monitored between 1998 and 2002 ranged from 15,360 to 293,759 ac (6,216 to 118,880 ha), averaging 89,600 ac (36,260 ha) for 20 resident adult males and 44,160 ac (17,871 ha) for 32 resident adult females (Land et al. 1999, 2002, Shindle et al. 2000, 2001). The most current estimate of home-range sizes (minimum convex polygon method) for established, non-dispersing, adult, radio-collared panthers averaged 29,056 ac (11,759 ha) for females ($n = 11$) and 62,528 ac (25,304 ha) for males ($n = 11$) (Lotz et al. 2005). The average home range was 35,089 ac (14,200 ha) for resident females ($n = 6$) and 137,143 ac (55,500 ha) ($n = 5$) for males located at Big Cypress National Preserve (BICY) (Jansen et al. 2005). Home ranges of resident adults tend to be stable unless influenced by the death of other residents.

Activity levels for panthers are greatest at night with peaks around sunrise and after sunset (Maehr et al. 1990b). The lowest activity levels occur during the middle of the day. Female panthers at natal dens follow a similar pattern with less difference between high and low activity periods.

Telemetry data indicate panthers typically do not return to the same resting site day after day, with the exception of females with dens or panthers remaining near kill sites for several days. The presence of physical evidence such as tracks, scats, and urine markers, confirms panthers move extensively within home ranges, visiting all parts of the range regularly in the course of hunting, breeding, and other activities (Maehr 1997; Comiskey et al. 2002). Males travel widely throughout their home ranges to maintain exclusive breeding rights to females. Females without kittens also move extensively within their ranges (Maehr 1997). Panthers are capable of moving large distances in short periods of time. Nightly panther movements of 12 mi (20 km) are not uncommon (Maehr et al. 1990a).

Adult females and their kittens interact more frequently than any other group of panthers. Interactions between adult male and female panthers last from 1 to 7 days and usually result in pregnancy (Maehr et al. 1991). Aggressive interactions between males often result in serious injury or death. Independent subadult males have been known to associate with each other for several days and these interactions do not appear to be aggressive in nature. Based on radio-collared panthers, aggression between males is the most common cause of male mortality (FWC 2014) and an important determinant of male spatial and recruitment patterns based on (Maehr et al. 1991; Shindle et al. 2003).

Primary panther prey species are white-tailed deer and feral hog (*Sus scrofa*) (Maehr et al. 1990b; Dalrymple and Bass 1996). Generally, feral hogs constitute the greatest biomass consumed by panthers north of the Alligator Alley section of I-75, while white-tailed deer are the greatest biomass consumed to the south (Maehr et al. 1990b). Secondary prey species include raccoons (*Procyon lotor*), nine-banded armadillos (*Dasypus novemcinctus*), marsh rabbits (*Sylvilagus palustris*) (Maehr et al. 1990b), and American alligators (*Alligator mississippiensis*) (Dalrymple and Bass 1996). No seasonal variation in diet has been detected. Maehr et al. (1990b) rarely observed domestic livestock in scats or kills of the panther, although cattle were readily available in the study area. In a study of calf depredation on two ranches in southwest Florida (Main and Jacobs 2014), panthers were determined to be the cause of calf mortality for 0.5 percent of calves on one ranch and 5.3 percent of calves on the other ranch.

Little information on the feeding frequency of the panther is available. However, the feeding frequency of the Puma is likely similar to the feeding frequency of the panther. Ackerman et al. (1986) reported a resident adult male puma generally consumes one deer-sized prey every 8 to 11 days. Moreover, a resident female puma will consume one deer-sized prey item every 14 to 17 days, and one deer-sized prey item every 3.3 days for a female with three 13-month-old kittens.

Habitat

Noss and Cooperrider (1994) considered the landscape implications of maintaining viable panther populations. Assuming a male home range size of 137,599 ac (55,685 ha) (Maehr 1990), an adult sex ratio of 50:50 (Anderson 1983), and some margin of safety, they determined a reserve network as large as 15,625 to 23,438 mi^2 (40,469 to 60,703 km^2) would be needed to

support an effective population size of 50 individuals (equating to an actual adult population of 100 to 200 panthers [Ballou et al. 1989]). However, to provide for long-term persistence based on an effective population size of 500 individuals (equating to 1,000 to 2,000 adult panthers [Ballou et al. 1989]), could require as much as 156,251 to 234,376 mi^2 (404,687 to 607,031 km^2). This latter acreage corresponds to roughly 60 to 70 percent of the panther's historical range. Although it is uncertain whether this much land is needed for panther recovery, it does provide some qualitative insight into the importance of habitat conservation across large landscapes for achieving a viable panther population (Noss and Cooperrider 1994).

Radio-collar data and ground tracking indicate that panthers use the mosaic of habitats available to them as resting and denning sites, hunting grounds, and travel routes. The majority of telemetry locations (Belden 1986; Belden et al. 1988; Maehr 1990; Maehr et al. 1991; Maehr 1992; Smith and Bass 1994; Kerkhoff et al. 2000; Comiskey et al. 2002, Cox et al. 2006, Kautz et al. 2006, Land et al. 2008) and natal den sites (Benson et al. 2008) were within or close to forested cover types, particularly cypress swamp, pinelands, hardwood swamp, and upland hardwood forests. Global Positioning System data has shown panthers (n = 12) use all habitats contained within their home ranges by selecting for forested habitat types and using all others in proportion to availability (Land et al. 2008).

Kautz et al. (2006) found that the smallest class of forest patches (*i.e.*, 9 to 26 ac [3.6 to 10.4 ha]) were the highest ranked forest patch sizes within panther home ranges. The diverse woody flora of forest edges probably provides cover suitable for stalking and ambushing prey (Belden et al. 1988; Cox et al. 2006). Also, dense understory vegetation comprised of saw palmetto provides some of the most important resting and denning cover for panthers (Maehr 1990; Benson et al. 2008). Shindle et al. (2003) estimated 73 percent of panther dens were in saw palmetto thickets.

Between 1981 and 2010, more than 90,000 locations were collected from more than 180 radio-collared panthers. Belden et al. (1988); Maehr et al. (1991); Maehr and Cox (1995); Maehr (1997); Kerkoff et al. (2000); Comiskey et al. (2002); Cox et al. (2006); and Kautz et al. (2006) provide information on habitat use based on various subsets of these data. Land et al. (2008), investigated habitat selection of 12 panthers in the northern portion of the breeding range using Global Positioning System (GPS) telemetry data collected during nocturnal and diurnal periods, as well as VHF telemetry data collected only during diurnal periods, and found analysis of both types of telemetry data yielded similar results.

Even though some suitable panther habitat remains in south-central Florida, it is widely scattered and fragmented (Belden and McBride 2005). Thatcher et al. (2006) used a statistical model in combination with a geographic information system (GIS) to develop a multivariate landscape-scale habitat model based on the Mahalanobis distance statistic (D^2) to evaluate habitats in south central Florida for potential expansion of the panther population. They identified four potential habitat patches: the Avon Park Bombing Range area, Fisheating Creek/Babcock-Webb Wildlife Management Area (WMA), eastern Fisheating Creek, and the Duette Park/ Manatee County area. These habitat patches are smaller and more isolated compared with the current panther

range, and the landscape matrix where these habitat patches exist provides relatively poor habitat connectivity among the patches (Thatcher et al. 2006, 2009). Major highways and urban or agricultural development isolate these habitat patches, and they are rapidly being lost to the same development that threatens southern Florida (Belden and McBride 2005).

Travel and dispersal corridors

In the absence of direct field observations/measurements, Harrison (1992) suggested landscape corridors for wide-ranging predators should be half the width of an average home range size. Following Harrison's (1992) suggestion, corridor widths for panthers would range from 6.1 to 10.9 mi (9.8 to17.6 km) depending on whether the target animal was an adult female or a transient male. Beier (1995) suggested that corridor widths for transient male puma in California could be as small as 30 percent of the average home range size of an adult panther; however, topography in California is dramatically different from that in Florida. Without supporting empirical evidence, Noss (1992) suggests regional corridors connecting larger hubs of habitat should be at least 1.0 mi (1.6 km) wide. Beier (1995) makes specific recommendations for very narrow corridor widths based on short corridor lengths in a California setting of wild lands completely surrounded by urban areas; he recommended corridors with a length less than 0.5 mi (0.8 km) should be more than 328 ft (100 m) wide, and corridors extending 0.6 to 4 mi (1 to 7 km) should be more than 1,312 ft (400 m) wide. The Dispersal Zone, which connects lands between the Panther Focus Area south of the Caloosahatchee River and the Panther Focus Area north of the Caloosahatchee River, encompasses 44 mi^2 (113 km^2) with a mean width of 3.4 mi (5.4 km) (Figure 5). Although it is not adequate to support a single panther, the Dispersal Zone is strategically located and expected to function as an important landscape linkage to south-central Florida (Kautz et al. 2006). Transient male panthers currently use this zone as they disperse northward into south-central Florida.

Distribution

The panther is the last subspecies of *Puma* (also known as mountain lion, cougar, panther, or catamount) still surviving in the eastern United States. Historically occurring throughout the southeastern United States (Young and Goldman 1946), today the panther is restricted to less than 5 percent of its historic range located in south Florida.

When Europeans first came to this country, pumas roamed most all of North, Central, and South America. Early settlers attempted to eradicate pumas by every means possible. By 1899, it was believed panthers had been restricted to peninsular Florida (Bangs 1899). By the late 1920s to mid-1930s, it was thought by many the panther had been completely extirpated (Tinsley 1970). In 1935, Dave Newell, a Florida sportsman, hired Vince and Ernest Lee, Arizona houndsmen, to hunt for panthers in Florida. They killed eight in the Big Cypress Swamp (Newell 1935). Every survey conducted since then confirmed a breeding panther population in southern Florida south of the Caloosahatchee River, and no survey since then has been able to confirm a reproducing panther population outside of southern Florida.

Although generally considered unreliable, sightings of panthers regularly occur throughout the southeast. Nonetheless, a reproducing population of panthers has not been documented to occur outside of south Florida for at least 30 years despite an extensive search effort (Belden et al. 1991; McBride et al. 1993; Clark et al. 2002). Survey reports and more than 70,000 locations of radio-collared panthers recorded between 1981 and 2004 clearly define the panther's current breeding range. Reproduction is known only in the Big Cypress Swamp and Everglades physiographic region in Collier, Lee, Hendry, Miami-Dade, and Monroe Counties, south of the Caloosahatchee River (Belden et al. 1991). As discussed previously, panthers occasionally disperse north of the Caloosahatchee River. However, these animals are likely all males searching to establish new territories. There is no evidence of female panthers or successful panther reproduction currently occurring north of the Caloosahatchee River (Nowak and McBride 1974; Belden et al. 1991; Land and Taylor 1998; Land et al. 1999; Shindle et al. 2000; McBride 2002; Belden and McBride 2005). In 1973, McBride captured one female in Glades County (Nowak and McBride 1974). This was the last time a female panther was identified north of the Caloosahatchee River.

Population Dynamics

McBride et al. (2008) and McBride (2010) reported minimum population counts (*i.e.*, number known alive) based on physical evidence (*e.g.*, tracks, urine markers, panther treed with hounds, trail-camera photos). They counted adult and subadult panthers, but not kittens at the den. Three rules were used to distinguish individuals: (1) gender was determined by track size or stride length; (2) time (freshness) was determined by known events within the past 24 hours, such as wind or rain; and (3) distance between individual track sets. These rules were used as an exclusionary tool to avoid over-counting (McBride et al. 2008). The number of panthers detected and verified by physical evidence from 1981 to 1994 fluctuated between a high of 30 and a low of 19 adult and juvenile panthers, with the lowest point occurring in 1991 following the removal of seven juveniles and three kittens to initiate a captive breeding program (McBride et al. 2008). In 1995, eight female pumas from Texas were released to address suspected deleterious effects of inbreeding. From 1996 to 2003, the panther population increased at a rate of 14 percent per year with 26.6 kittens being produced annually (Johnson et al. 2010). The effective population size (N_e) rose from 16.4 in 1995 to 32.1 in 2007, with corresponding census populations (N) of 26 and 102, respectively. The population tripled since 1995 (McBride et al. 2008, Johnson et al. 2010), reaching a high of 117 by 2007 (mortalities not subtracted). Data reported in McBride (2000, 2001, 2002, 2003, 2004, 2006, 2007,2008, and 2009), McBride et al. (2010, 2011, 2012, and 2013), and Johnson et al. (2010) noted minimum population counts of 62 panthers in 2000, 78 in 2001, 80 in 2002, 87 in 2003, 78 in 2004, 82 in 2005, 97 in 2006, 117 in 2007, 104 in 2008, 113 in 2009, 115 in 2010, 111 in 2011, 123 in 2012, and 133 in 2013.

Maehr et al. (1991) provide an estimate of population density of 1 panther per 27,520 ac, based on 17 radio-collared and 4 uncollared panthers. They extrapolated this density to the area occupied by radio-collared panthers (1,245,435 ac) during the period 1985 to 1990 to achieve a

population estimate of 46 adult panthers for southwest Florida (excluding Everglades National Park [ENP], eastern BICY, and Glades and Highlands Counties). Beier et al. (2003), however, argued this estimate of density, although "reasonably rigorous," could not be extrapolated to other areas because it was not known whether densities were comparable in those areas. Kautz et al. (2006) provided a density estimate of 1 panther per 31,923 ac by dividing the panther count at that time (67) by the area within the Primary Zone. This estimate does not take into account the variability in panther densities across the landscape. Using an average of the 2007 to 2009 panther counts in the eight survey units covered by McBride et al. (2008) and Kautz et al. (2006), the density estimates range from a low of one panther per 81,479 ac to a high of one panther per 7,850 ac for the Primary Zone lands within these survey units.

The FWC (2010) provided an upper bound population estimate of 0.0177 panthers per square-kilometer (km^2) or one panther per 13,929 ac. Applying this density estimate to the Primary Zone (9,189 km^2) (2,270,652 ac) yields an upper estimate of 163 adult panthers. The FWC's lower estimate is 100 panthers (1.09 panthers per 100 km^2 or 1 panther per 22,707 ac) and is based on annual verified panther sign data (McBride et al. 2008) and minimum number of panthers known to be alive (FWC 2010). Applying the four densities to the Primary Zone would yield a population based on Kautz et al.'s (2006) density estimate of 71 panthers (1 panther per 31,923 ac). Maehr et al.'s (1991) estimate would yield a population of 83 panthers (1 panther per 27,520 ac) and the FWC's (2010) estimate would yield a low of 100 panthers (1 panther per 22,707 ac) and a high of 163 panthers (1 panther per 13,929 ac). For our evaluations however, the Service is continuing to use the average densities provided by Kautz et al. (2006) of one panther per 31,923 ac (12,919 ha) or one panther per 129 km^2.

Population Viability Analysis (PVA) has emerged as a key component of endangered species conservation. This process is designed to incorporate demographic information into models that predict if a population is likely to persist in the future. PVAs incorporate deterministic and stochastic events including demographic and environmental variation, and natural catastrophes. PVAs have been criticized as being overly optimistic about future population levels (Brook et al. 1997) and should be viewed with caution; however, they are and have been shown to be surprisingly accurate for managing endangered taxa and evaluating different management practices (Brook 2000).

Shaffer (1981) originally defined a viable population as follows: "a minimum viable population for any given species in any given habitat is the smallest isolated population having a 99 percent chance of remaining extant for 1,000 years despite the foreseeable effects of demographic, environmental and genetic stochasticity, and natural catastrophes." However, the goal of 95 percent probability of persistence for 100 years is the standard recommended by population biologists and is used in management strategies and conservation planning, particularly for situations where it is difficult to accurately predict the future (Shaffer 1978, 1981, 1987).

From 1981 through 2010, 182 panthers were been radio-collared and monitored on public and private lands throughout south Florida (FWC 2010). Radio-collar data were used by researchers to estimate survival rates and fecundity and were incorporated into PVA models previously developed for the panther (Seal and Lacy 1989, 1992; Cox et al. 1994; Maehr et al. 2002b). These models incorporated a range of different model parameters such as sex ratios, kitten survival rates, age distributions, and various levels of habitat loss, density dependence, and intermittent catastrophes or epidemics. The outputs of these models predicted a variety of survival scenarios for the panther and predicted population levels needed to ensure the survival of the species.

Root (2004) developed an updated set of PVA models for the panther based on RAMAS GIS software (Akçakaya 2002). These models were used to perform a set of spatially explicit PVAs. Three single-sex (*i.e.*, females only) models were constructed using demographic variables from Maehr et al. (2002b) and other sources. A conservative model was based on Seal and Lacy (1989), a moderate model was based on Seal and Lacy (1992), and an optimistic model was based on the 1999 consensus model of Maehr et al. (2002b). In each model, first-year kitten survival was set at 62 percent based on information from panther population monitoring (Shindle et al. 2001). All of the models assumed a 1:1 sex ratio, a stable age distribution, 50 percent of females breeding in any year, and an initial population of 41 females (82 individuals), which was the approximate population size in 2001 and 2002 (McBride 2001, 2002).

The basic versions of each model incorporated no catastrophes or epidemics, no change in habitat quality or amount, and a ceiling type of density dependence. The basic versions of the models incorporated a carrying capacity of 53 females (106 panthers with a 50:50 sex ratio). The models were run with differing values for density dependence, various levels of habitat loss, and intermittent catastrophes or epidemics. Each simulation was run with 10,000 replications for a 100-year period. The minimum number of panthers needed to ensure a 95 percent probability of persistence for 100 years was estimated in a series of simulations in which initial abundance was increased until probability of extinction at 100 years was no greater than 5 percent. More detailed information concerning the PVA model parameters appears in Root (2004).

The results of an earlier, conservative PVA model run done by Seal and Lacy (1989) predicted a probability of extinction of 78.5 percent in 100 years with a mean final total abundance of 3.5 females. Also, the probability of a large decline in abundance (50 percent) was 94.1 percent. Later work based on improved panther modeling and a larger sample of monitored panthers produced both a moderate and optimistic scenario (Root 2004). The moderate model resulted in a 5 percent probability of extinction and a mean final abundance of 42.3 females in 100 years. The probability of panther abundance declining by half the initial amount was 20 percent in 100 years under the moderate model. The optimistic model resulted in a 2 percent probability of extinction and mean final abundance of 51.2 females in 100 years. The probability of panther abundance declining by half the initial amount was only 9 percent in 100 years under the

optimistic model. These models also provide a probability of persistence (100 percent minus probability of extinction) over a 100-year period of 95 percent for the moderate model and 98 percent for the optimistic model.

Model results were also provided by Root (2004) for probability of extinctions for 1 percent loss of habitat per year, within the first 25 years of the model run, based on both the moderate and optimistic scenarios. The 1 percent loss of habitat equates to essentially all remaining non-urban privately owned lands in the Primary Zone and corresponds to the estimated rate of habitat loss from 1986 to 1996 for the five southwest counties based on land use changes (Root 2004). For the moderate model, the model runs predict a probability of extinction increase of about 1 percent to 6 percent with 1.0 percent habitat loss per year for the first 25 years. For the optimistic model, probability of extinction increased from about 2 percent with no loss of habitat to 3 percent with 1.0 percent habitat loss per year, for the first 25 years. These models also predicted the mean final abundance of females would decrease from 41 to 31 females, a 24.3 percent reduction for the moderate model and from 41 to 38 females, a 7.3 percent reduction for the optimistic model.

The probability of persistence over a 100-year period with a 1 percent loss of habitat changed to approximately 94 percent for the moderate model and 97 percent for the optimistic model. The model runs also predicted a mean final abundance of 62 individuals (31 females and 31 males) for the moderate model and 76 individuals (38 females and 38 males) for the optimistic model.

The results of the PVA lead to the development of population guidelines for the panther. Kautz et al. (2006) developed recommendations for panther population size as it relates to persistence following review of the output of Root's PVA models (2004) and those of other previous PVAs for the panther. These recommendations are: (1) populations of less than 50 individuals are likely to become extinct in less than 100 years; (2) populations of 60 to 70 are barely viable and expected to decline by 25 percent over 100 years; (3) populations of 80 to 100 are likely stable but would still be subject to genetic problems (*i.e.*, heterozygosity would slowly decline); and (4) populations greater than 240 have a high probability of persistence for 100 years and are demographically stable and large enough to retain 90 percent of original genetic diversity. Kautz et al.'s (2006) population recommendations, when applied to the populations predicted by Root's (2004) moderate models, describe the "with habitat loss" population (62 panthers) as barely viable and expected to decline by 25 percent over a 100-year period. The "without habitat loss" population (84 panthers) is likely stable but would still be subject to genetic problems.

The Service believes McBride's verified population of 97 panthers in 2006, 117 panthers in 2007, 104 in 2008, 113 in 2009, 115 in 2010, and 111 in 2011, 123 in 2012, and 133 in 2013 is within Kautz et al.'s (2006) population recommendations representing a population that is likely stable but still may be subject to genetic problems.

The Service also believes the model runs show lands in the Primary Zone are important to the survival and recovery of the panther, and sufficient lands need to be managed and protected in south Florida to provide for a population of 80 to 100 panthers, the population range defined as likely stable over 100 years, but subject to genetic problems.

Critical Habitat

Critical habitat has not been designated for the panther.

Threats

Present or Threatened Destruction, Modification or Curtailment of its Habitat or Range

Panthers, because of their wide-ranging movements and extensive spatial requirements, are particularly sensitive to habitat fragmentation (Harris 1984). Mac et al. (1998) defines habitat fragmentation as: "The breaking up of a habitat into unconnected patches interspersed with other habitat which may not be inhabitable by species occupying the habitat that was broken up. The breaking up is usually by human action, as, for example, the clearing of forest or grassland for agriculture, residential development, or overland electrical lines." The reference to "unconnected patches" is a central underpinning of the definition. For panther conservation, this definition underscores the need to maintain contiguous habitat and protected habitat corridors in key locations in south Florida and throughout the panther's historic range. Habitat fragmentation can result from road construction, urban development, and agricultural land conversions.

Roads and highways facilitate the movement of people and goods by cars and trucks, and may adversely affect the panther. The construction of new roads and the widening of existing roads can result in the direct loss of wildlife habitat (Forman et al. 2003). In addition, disturbance resulting from motorized vehicles may cause panthers to avoid busy roads. Maher (1990) reported that female panthers are less likely to cross busy highways. Consequently, roads may act as barriers affecting panther movement and fragmenting panther habitat. Panthers can also be injured or killed due to collisions with motorized vehicles when attempting to cross highways, and the potential for collisions increases as traffic increases. Adverse effects resulting from roads and highways represent a potential threat to the existing panther population.

Collisions with motor vehicles on highways are a significant source of mortality for the panther. The FWC documented 165 vehicle-related panther mortalities and 8 vehicle-related panther injuries from 1972 to the present on highways in south Florida. In portions of the panther's range, the rate of panther vehicle-related mortalities may be increasing. Smith et al. (2006) found that vehicle-related panther mortalities in Collier

County increased by a factor of four from 2000 to 2005, compared to previous decades. This increase in panther mortality is likely related to the increase in traffic from Collier County's population growth. Unfortunately, the effect of vehicle-related mortality on the existing panther population is largely unknown.

Wildlife underpasses, or crossings, can be constructed within highway corridors to reduce the potential for panther injuries and mortalities resulting from vehicle collisions. Underpasses allow panthers and other wildlife to safely cross under busy roadways, and maintain connectivity and gene flow within the panther population. Underpasses usually consist of a bridge, prefabricated concrete box, or culvert (Forman et al. 2003). Effective crossing structures are large enough to allow the passage of panthers and include adequate wing fencing to funnel panthers to the crossing site. Crossings should be designed so panthers have an unobstructed view of habitat on the opposite side of the underpass (Foster and Humphrey 1995). The status of lands adjacent to the crossing site should also be considered when determining the location of a crossing. Unprotected private lands adjacent to the crossing could be developed and render the crossing unviable. Accordingly, lands adjacent to crossings should be acquired or placed under a conservation easement or other protective covenant to ensure the crossing will function in perpetuity. A number of wildlife crossings with associated fencing have already been constructed on major roadways in southwest Florida to benefit the panther and other wildlife species. In 1991, the FDOT finished the construction of 28 wildlife crossings within the I-75 corridor from U.S. Highway 27 to just west of Everglades Boulevard.

The FDOT also constructed six wildlife crossings on SR 29 between Oil Well Road and US 41. Crossings A, B, C, and D are located north of I-75 and Crossings E and F are located south of I-75. Crossings A and B were constructed in 2007, Crossings C and D were constructed in 1995, Crossing E was constructed in 1997, and Crossing F was constructed in 1999. Prior to construction of the SR 29 Crossings, a total of 10 vehicle-related panther mortalities were recorded near the locations of Crossings A and B from 1980 through 2004, and 2 vehicle-related panther mortalities were recorded near the location of Crossings C and D from 1979 through 1990. Vehicle-related panther mortalities have not been recorded in the vicinity of Crossings A, B, C, or D following their installation. A total of two vehicle-related panther mortalities were documented within 3.5 mi of the location of Crossing E prior to construction, and vehicle-related panther mortalities were not observed within 2.5 mi of the location of Crossing F prior to construction. Following construction of Crossings E and F, a total of four vehicle-related panther mortalities have been reported within 3 mi of Crossing E, and two vehicle-related panther mortalities have been documented within 1 mi of Crossing F.

Lee County, Collier County, and other entities have been working with the Service to construct additional needed crossings for the panther. For example, the Collier County Road Department recently constructed two wildlife underpasses and barrier fencing

within the Oil Well Road (CR 858) corridor at Camp Keais Strand, in association with the Oil Well Road widening project. Lee County constructed a wildlife underpass and barrier fencing on Corkscrew Road in 2004. Moreover, in 2011, a wildlife underpass and barrier fencing was installed east of Immokalee on County Road (CR) 846 in Collier County, as part of a Habitat Conservation Plan. A wildlife underpass has also been installed on Immokalee Road near CR 951.

Although these wildlife crossings have contributed to minimization of panther-vehicle interactions, more crossings are needed within the major roadways of south Florida to further reduce this threat to the panther and other wildlife species (Smith et al. 2006). Recent studies have been conducted to identify locations for wildlife crossings in south Florida. Swanson et al. (2005) used a Least Cost Pathway (LCP) modeling approach to identify the most likely travel routes for panthers among six major use areas in southwest Florida. LCP modeling takes into consideration elements in the landscape that permit or impede panther movement when traveling. Swanson et al. (2005) identified 20 key highway segments where LCPs intersected improved roadways. Smith et al. (2006) studied the movements of the panther, the Florida black bear, and other wildlife species along SR 29, CR 846 and CR 858 in Collier County, Florida. Data analyzed in the study were obtained from roadkill and track surveys, infra-red camera monitoring stations, existing data provided by the FWC (panther radio telemetry and vehicle mortality reports), and other studies. Smith et al. (2006) recommended new wildlife crossings be considered at various sites along these roadways to reduce vehicle-related mortality of panthers and other wildlife species, and to increase connectivity among wildlife populations. The Service continues to work with the FDOT, county road departments, and other entities to ensure wildlife crossings are installed as needed to promote safe passage of panthers and other wildlife across roadways.

Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Prior to 1949, panthers could be killed in Florida at any time of the year. In 1950, the Florida Game and Fresh Water Fish Commission (now Florida Fish and Wildlife Conservation Commission [FWC]) declared the panther a regulated game species due to concerns over declining numbers. The FWC removed panthers from the game animal list in 1958 and gave them complete legal protection. On March 11, 1967, the Service listed the panther as endangered (32 FR 4001) throughout its historic range, and these animals received Federal protection under the passage of the Act in 1973. In addition, the Florida Panther Act (Florida Statute 372.671), a 1978 Florida State law, made killing a panther a felony. The panther is listed as endangered by the States of Florida, Georgia, Louisiana, and Mississippi in addition to its Federal listing.

Restricted Range

Historically occurring throughout the southeastern United States (Young and Goldman 1946), today the panther is restricted to south Florida in an area that is less than 5 percent of its historic range.

Ongoing Conservation Efforts

Habitat protection has been identified as being one of the most important elements to achieving panther recovery. While efforts have been made to secure habitat, continued action is needed to obtain additions to and inholdings for public lands, assure linkages are maintained, restore degraded and fragmented habitat, and obtain the support of private landowners for maintaining property in a manner that is compatible with panther use. Conservation lands used by panthers are held and managed by a variety of entities including the Service, NPS, Seminole Tribe of Florida, Miccosukee Tribe of Indians of Florida, FWC, Florida Department of Environmental Protection (DEP), Florida Division of Forestry (FDOF), Water Management Districts, non-governmental organizations, counties, and private landowners.

To further refine the land preservation needs of the panther, and to specifically develop a landscape-level program for the conservation of the panther population in south Florida, the Service appointed a Florida Panther Subteam in February 2000. The Subteam was charged with developing a landscape-level strategy for the conservation of the panther population in south Florida. The results of this collaborative effort are partially presented in Kautz et al. (2006). One of the tasks for this subteam was to identify a strategically located set of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of the south Florida population of the panther. Kautz et al. (2006) focused their efforts on the area south of the Caloosahatchee River, where the reproducing panther population currently exists.

Kautz et al. (2006) created an updated panther potential habitat model. The potential habitat map was reviewed in relation to telemetry data, recent satellite imagery (where available), and panther home range polygons. Boundaries were drawn around lands defined as the Primary Zone, the most important area needed to support a self-sustaining panther population. Kautz et al. (2006) referred to these lands as essential; however, as observed in the two previous plans (Logan et al. 1993; Cox et al. 1994), lands within the boundaries of the Primary Zone included some urban areas and other lands not considered to be panther habitat (*i.e.*, active rock and sand mines). The landscape context of areas surrounding the Primary Zone was modeled and results were used to draw boundaries of the Secondary Zone (Figure 5), the area capable of supporting the panther population in the Primary Zone, but where habitat restoration may be needed (Kautz et al. 2006).

Kautz et al. (2006) also identified, through a LCP model, the route most likely to be used by panthers crossing the Caloosahatchee River and dispersing out of south Florida into south-central Florida. Kautz et al. (2006) used GIS-based analysis to construct the LCP models and identify

optimum panther dispersal corridor(s). The LCP models operated on a cost surface that ranked suitability of the landscape for use by dispersing panthers with lower scores indicating higher likelihood of use by dispersing panthers. Those dispersal routes connecting lands between the Panther Focus Area south of the Caloosahatchee River and the Panther Focus Area north of the Caloosahatchee River were defined as the Dispersal Zone (Kautz et al. 2006). The preservation of lands within this zone is important for the survival and recovery of the panther, as these lands are the dispersal pathways for expansion of the panther population.

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RURAL LANDS WEST
BIOLOGICAL ASSESSMENT

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INTRODUCTION

This Biological Assessment is submitted as part of the U.S. Army Corps of Engineers (Corps) permit application for Rural Lands West (Project) to address the potential effect of the proposed federal action (i.e., issuance of a permit under section 404 of the Clean Water Act (CWA) permit authorizing the discharge of dredged or fill material to "waters of the United States") on certain species listed as threatened and endangered under the Endangered Species Act of 1973 (16 U.S.C. Section 1531 *et seq*.) (ESA). This document follows the outline for biological assessments previously provided by the U.S. Fish and Wildlife Service (USFWS) for other federal actions within Southwest Florida. The Biological Assessment addresses specific issues regarding the threatened Eastern indigo snake (*Drymarchon corais couperi*), threatened Audubon's crested caracara (*Polyborus plancus audubonii*), endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*), threatened wood stork (*Mycteria americana*), endangered red-cockaded woodpecker (*Picoides borealis*) (RCW), endangered Florida bonneted bat (*Eumops floridanus*), and endangered Florida panther (*Puma concolor coryi*).[1]

PROJECT DESCRIPTION

Historical Background: Collier Family Contributions to Region's Environmental and Agricultural Heritage

The applicant, Collier Enterprises Management, Inc. (CEMI), is heir to a long tradition of environmental stewardship. Over the years, the Collier family has transferred to the federal, state, and local governments hundreds of thousands of acres of environmentally sensitive lands which now comprise highly valuable, interconnected wildlife refuge areas, especially for the protection of the Florida panther, and which provide a buffer of protection around the Everglades National Park. Since it was established in 1976, CEMI has played an integral role in this heritage of environmental

[1]Landowners in eastern Collier County (including the applicant), with support from four leading conservation organizations (Defenders of Wildlife, Florida Wildlife Federation, Audubon of Florida, and Audubon of the Western Everglades), have applied to the USFWS for an Incidental Take Permit (ITP), pursuant to ESA Section 10, and have submitted the associated Eastern Collier Multiple Species Habitat Conservation Plan (ECMSHCP). Under the proposed ECMSHCP, approximately 107,000 acres of privately held land in western Collier County will be permanently preserved as valuable habitat for the Florida panther and 15 other protected species in Southwest Florida, and 45,000 acres of less valuable habitat will be available for development. The USFWS plans to conduct formal ESA Section 7 consultation on the ITP, and plans to prepare an Environmental Impact Statement (EIS) studying the ITP.

The Rural Lands West project is located within the area of the ECMSHCP, and is designed in a manner that is consistent with the ECMSHCP. The Corps permit and the USFWS ITP are separate actions by separate agencies that will each undergo their own ESA Section 7 consultation and National Environmental Policy Act (NEPA) analysis. Both agencies are aware of and will account for both actions, as appropriate, within their environmental reviews. The Corps is a cooperating agency for the USFWS EIS, and will consult with the USFWS on the Rural Lands West application. If the consultation on the ITP is completed before the USFWS completes its consultation on Rural Lands West, aspects of the Rural Lands West consultation, such as the Biological Opinion, may be able to tier off the corresponding aspects of the ITP consultation. Likewise, if the consultation on Rural Lands West is completed before the USFWS completes its consultation on the ITP, aspects of the consultation on the ITP may be able to tier off the corresponding aspects of the Rural Lands West consultation.

responsibility. As a result of these efforts, the historical adverse impacts to the Florida panther have been largely offset in recent years (Florida Panther Recovery Team and USFWS 2006). Indeed, on February 22, 2017, the USFWS and the Florida Fish and Wildlife Conservation Commission (FWCC) adjusted the estimated adult and subadult Florida panther population range upward, from 100 to 180 panthers to 120 to 230 panthers.

In 1974, the Colliers transferred 560,000± acres to the federal government, which resulted in the creation of the Big Cypress National Preserve (BCNP). Water flow through the BCNP was considered vital to the Everglades National Park to the south (Miami New Times 2002). The BCNP was established to serve as "a buffer for the 1,700 square miles of the Florida Everglades" (St. Petersburg Times 1987). According to the federal legislation establishing the BCNP, the BCNP was created "in order to assure the preservation, conservation, and protection of the natural, scenic, hydrologic, floral, faunal, and recreational values of the Big Cypress Watershed in the State of Florida and to provide for the enhancement and public enjoyment thereof" (BCNP Pub. L. 1974).

In the late 1980s, the Colliers entered into a series of agreements with the United States to transfer lands for the protection of the environment and endangered species. These agreements resulted in land transfers to enlarge the BCNP and establish two new refuges as part of the National Wildlife Refuge System. In the "Agreement Among the United States, Collier Enterprises, Collier Development Company, and Barron Collier Company," recorded in Official Records Book 1365, Page 1001, Public Records of Collier County, Florida (Exchange Agreement), the parties noted that the Secretary of the Interior "has determined that extending the boundaries of the BCNP by the acquisition of certain lands owned by the Colliers will help to create an envelope of protection around the Everglades and Big Cypress resources and will further the purposes of fish and wildlife conservation" set forth in the Fish and Wildlife Act of 1956 and the ESA (Exchange Agreement, p. 1030). In addition, the Secretary of the Interior had determined that public ownership of certain lands then owned by the Colliers would "protect the habitat and enhance the recovery of the endangered Florida Panther, and other endangered and threatened fish, plant and wildlife species that are indigenous to the Everglades and Big Cypress areas and surrounding wetlands" (Exchange Agreement, p.1031).

In 1996, the Collier family transferred 146,000± acres to the federal government that was added to the BCNP. Approved by federal legislation in 1988 and pursuant to the Exchange Agreement, the addition was intended to "increase a buffer of protected territory that shields Everglades National Park," which was considered "crucial to protecting South Florida water supplies and endangered species such as the Florida panther" (St. Petersburg Times 1988). The 1988 legislation stated that "the Federal acquisition of lands bordering the BCNP in conjunction with the construction of Interstate 75 (I-75) would provide significant public benefits by limiting development pressure on lands which are important, both in terms of fish and wildlife habitat supporting endangered species and of wetlands which are the headwaters of the Big Cypress National Preserve" (BCNP Pub. L. 1988). Specifically, the legislation recognized that the addition of this area to the BCNP would "promote protection of the Florida panther" (BCNP Pub. L. 1988). Administered as a unit of the National Park Service for more than 30 years, the BCNP has provided this crucial buffer to the Everglades and protected a substantial area of Florida panther habitat, neither of which would have been possible without the efforts of the Colliers, including CEMI.

The Colliers' agreements with the United States in the late 1980s included the transfer of 24,300± acres for the creation of the Florida Panther National Wildlife Refuge (FPNWR). The FPNWR, established on June 1, 1989, was intended to "help preserve the range of the panther, whose numbers had been rapidly dwindling as the region's population and economic activity had grown in recent decades" (New York Times 1989). Additional Collier family lands were added to the FPNWR in 1996 along with the addition to the BCNP; today, the FPNWR contains approximately 26,400 acres. At the time the FPNWR was established, only 20 to 30 panthers were estimated to exist (FWCC 2007). Indeed, the panther was said at the time to be "almost extinct" (St. Petersburg Times 1988). Since that time, panther numbers, excluding kittens and Florida panthers outside that portion of the panther breeding range that occurs south of the Caloosahatchee River, increased from an estimated 100 to 180 as of 2014, to an estimated 120 to 230 today (USFWS Website 2009; FWCC Website 2017). As described in the section below on Florida panther, FWCC has recently documented a female panther and panther kittens north of the Caloosahatchee River, indicating that the panther breeding range is expanding. Certainly these increases in population size would not have been possible without the FPNWR, which in turn would not have been possible without the environmental stewardship initiatives of the Colliers.
The land agreements in the 1980s also led to the transfer by the Colliers to the federal government of approximately 35,000 acres upon which the Ten Thousand Islands National Wildlife Refuge was established in December 1996. This area, which is largely dominated by mangrove forests, provides habitat for roughly 200 species of fish and over 189 species of birds.

Much of the area that was transferred by the Colliers to the federal government pursuant to the Exchange Agreement and other agreements in the late 1980s had been reviewed by the USFWS in the *Fakahatchee Strand: A Florida Panther Habitat Preservation Proposal* Final Environmental Assessment (Fakahatchee Strand EA) (USFWS 1985). In the Fakahatchee Strand EA, the USFWS analyzed several alternatives for the preservation of approximately 88,000 acres of critical Florida panther habitat within the Fakahatchee Strand area of Florida. In its assessment of the area, the USFWS noted that its preservation was very important because it represented one of the three known population centers of the Florida panther, along with the Everglades National Park and the BCNP (Fakahatchee Strand EA 1985, p. 16). In addition, the area was recognized as "the best remaining habitat for a known Florida panther population not yet in public ownership" (Fakahatchee Strand EA 1985, p. 44). In the Intra-Service consultation pursuant to Section 7 of the ESA, the Acting Regional Director of the Southeast Region of the USFWS acknowledged that "the acquisition of the Fakahatchee Strand Prairie will make a significant beneficial contribution to the survival and conservation of the Florida panther" (Fakahatchee Strand EA 1985, p. A3).

Agriculture is one of the oldest industries in Collier County. In the early 1900s, ranchers were grazing herds of scrub cattle in the open prairies around Immokalee. By the early 1920s, infrastructure was constructed and improved, providing additional access to trade in northern markets. These improvements were instrumental in capturing the region's agriculture potential. By the end of World War II, the Collier County beef cattle industry became one of national importance.

This agriculture-related economic growth is closely tied to the Collier family and their legacy. Barron Gift Collier, for whom the county is named, introduced paved roads, electric power, and other infrastructure and businesses to the region. These developments along with the completion of

Tamiami Trail, which was largely led and funded by Collier, were critical to the development of Collier County and its agricultural heritage. Rural Lands West is designed to respect and honor this local agricultural heritage.

Project Location within Big Cypress Stewardship District

The site of the Rural Lands West project is located within the Big Cypress Stewardship District. The Big Cypress Stewardship District is wholly located on lands owned by the applicant and was created in 2004 when the Florida legislature enacted Chapter 2004-423, Florida General Laws. The Big Cypress Stewardship District is an independent special taxing district located in Collier County operating under the provisions of Chapters 189 and 298, Florida Statutes. The Big Cypress Stewardship District covers approximately 22,000 acres along the eastern boundary of Golden Gate Estates and the western boundary of the FPNWR.

Special Districts under Chapters 189 and 298, Florida Statutes, are similar to counties and municipalities. While counties and municipalities are units of local general-purpose government, Special Districts are units of local special-purpose government operating in a limited geographical area. A Special District has limited explicit authority specified in its charter with a Governing Board that has policy-making powers.

The land within the Big Cypress Stewardship District has been in agricultural use since the early 1900s, and today is in active use for row crops and cattle grazing operations. The Project site currently consists of two permitted agricultural operations. The agricultural operation north of Oil Well Road is authorized by Corps Permit No. SAJ-2008-02431 and is known as Shaggy Cypress. The agricultural operation south of Oil Well Road is authorized by Corps Permit No. SAJ-2008-02429 and is known as Camp Keais Strand. Agricultural operations in in these areas have included vegetable farming, cattle grazing, and sod farming. Exhibit 1 illustrates the Project's location within the Big Cypress Stewardship District.

Florida Panther National Wildlife Refuge

As described above, the FPNWR was established as a result of the transfer of lands owned by the Collier family to the United States in the late 1980s. The refuge was expanded in 1996 with the addition of more lands from the Collier family. The FPNWR totals approximately 26,400 acres and is located approximately four miles southeast of the Project site. The FPNWR abuts the southwest boundary of the Big Cypress Stewardship District. The FPNWR was established in 1989 under the authority of the ESA to protect the Florida panther (USFWS Website 2009). The USFWS conducts management activities on the refuge to improve, restore, and maintain native habitats. Management activities include the removal and treatment of non-native invasive (exotic) plants and prescribed burning (USFWS Website 2009). The applicant is currently working with FPNWR staff to coordinate exotic plant control efforts along shared property boundaries. The applicant is also working on a public education program for Project residents regarding the FPNWR and refuge management activities such as controlled burning.

Town of Big Cypress

Development of a master planned mixed-use community requires a range of local, state, and federal permits and authorizations, including County zoning approval, a County development order, a state Environmental Resource Permit, a state Water Use Permit, and a federal Corps CWA permit for the discharge of dredged or fill material into waters of the United States. For example, the number and types of residences and commercial establishments that may be located on the site are determined by county zoning, and require authorization via County zoning approval. At the federal level, authorization is required from the Corps for any discharge of dredged or fill materials into waters of the United States, and from the USFWS or the National Marine Fisheries Service for any take of federally listed species that will occur incidental to the activities.

Permitting for a master planned mixed-use community on the Project site was originally pursued by CEMI in 2008. A joint Environmental Resource Permit (ERP) application was submitted to the South Florida Water Management District (SFWMD) in January 2008 under the project name Town of Big Cypress and the Corps published a public notice for the proposed project on July 8, 208 (Corps Permit Application No. SAJ-2008-02430). The Town of Big Cypress site totaled 3,699.10± acres with 59.30± acres of proposed wetland impacts and 820.73± acres of wetland preserve. Shortly after the publication of the public notice, a major global economic recession caused a substantial drop in new residential development and commercial activity, and caused the project to be placed on hold.

In accordance with SFWMD staff meetings on June 9, 2015 and August 12, 2015, CEMI agreed to submit a new application for Rural Lands West, and to withdraw the application for the Town of Big Cypress. Specifically, SFWMD requested the permit application documents to be updated to reflect current site conditions and the modified project proposal.

Rural Lands Stewardship Program

Rural Lands West utilizes the rural planning strategy adopted for the Collier County Rural Land Stewardship Area (RLSA) overlay. See Collier County Growth Management Plan (GMP); Future Land Use Element (FLUE); RLSA Overlay Policies; and Section 4.08.00 *et seq*., Collier County Land Development Code (LDC). The RLSA includes approximately 196,000 acres of rural-designated lands in northeast Collier County, north and east of Golden Gate Estates, north of the FPNWR and BCNP, south of the Lee County line, and south and west of the Hendry County line. Section 4.08.01.DD, LDC. Rural Lands West will be the second community to utilize the RLSA overlay in Collier County. The town is planned in accordance with the goals, objectives, and policies contained in the GMP and the development standards contained in the LDC for the RLSA. See GMP, FLUE, RLSA Overlay Policies and Section 4.08.00, *et seq*., LDC.

In response to a Florida Land and Water Adjudicatory Commission final order in 2002, Collier County created the RLSA overlay as part of the FLUE of the GMP. In 2004, the land development regulations in the LDC were approved to implement the Goals and Policies established in the FLUE of the GMP for the RLSA overlay.

The RLSA program promotes the planning and development of new communities in the rural area of the County to accommodate population growth in a more compact, self-sufficient, and sustainable manner than allowed under the baseline conditions established in the GMP and zoning. The RLSA overlay encourages the retention of agriculture, protection of natural resources, and diversification of the rural economy by application of an incentive-based credit system which uses Stewardship Credits (Credits) generated from the removal of specific land use classifications on designated Stewardship Sending Areas (SSAs) for use to entitle land within approved Stewardship Receiving Areas (SRAs) where new communities are permitted and natural resource values are low.

Through participation in the RLSA program, Rural Lands West will promote environmental stewardship through land preservation and environmental restoration, while also preserving the County's agricultural heritage and providing economic and social benefit to Eastern Collier County. As intended by the RLSA program, Rural Lands West will preserve and restore a significant amount of wetland and wildlife habitat including areas considered to be environmentally sensitive. Open space will dominate the landscape with approximately 3 acres of land preserved through the RLSA program for every 1 acre developed. This open space includes land that will be used for agriculture, parks, wildlife habitat and wetlands and preserved in perpetuity for those uses at no cost to tax payers. The retention of agricultural lands as open space will maintain the county's agricultural heritage and allow current agricultural production levels to be maintained by continuing operations in certain areas and shifting other operations to fields that are not currently in active production. Rural Lands West will also feature offices, shopping, services, healthcare and other components needed for everyday life that many residents of Eastern Collier County currently have to travel considerable distance to reach. These features will also generate a significant and diverse employment opportunities as well.

In developing the RLSA program, the County delineated private lands within the RLSA District as:

a) Flow-Way Stewardship Areas (FSAs),
b) Habitat Stewardship Areas (HSAs),
c) Water Retention Areas (WRAs),
d) Open Lands, or
e) Restoration Zone Lands. Sections 4.08.05.C and 4.08.05.D, LDC.

FSAs are primarily wetlands located within the Camp Keais Strand and Okaloacoochee Slough, establishing the primary wetland flow-way systems in the RLSA. Section 4.08.01.I, LDC. HSAs include lands whose natural characteristics make them habitats that are potentially suitable for listed species and which also contain areas without such characteristics. HSAs may include the areas which are contiguous to the listed species habitat and form a continuum of landscape that could improve listed species habitat values. See Section 4.08.01.K, LDC. WRAs consist of areas permitted by the SFWMD to operate as agricultural water retention areas which provide surface water quality and other natural values. See Section 4.08.01.WW, LDC. Open lands are lands within the RLSA District that are not designated as FSAs, HSAs, or WRAs. Restoration Zone Lands are the privately owned lands in the RLSA District located within 500 feet of an FSA, but not otherwise included in an HSA or a WRA. Section 4.08.01.CC, LDC.

The County has identified certain lands within the RLSA to have low natural resource value and as suitable for establishing new communities under the RLSA program. The RLSA program identifies and describes the types of communities that can be established in these areas by adopting minimum planning and design standards for these communities. The community types which can be established within the RLSA include Hamlets, Villages, Towns, and Compact Rural Developments (CRDs). Section 4.08.01.II, LDC. Hamlets are small rural residential areas with primarily single-family housing and a limited range of convenience-oriented services. Section 4.08.01.J, LDC. Hamlets may be not less than 40 acres or more than 100 acres in size. Section 4.08.07.C.3, LDC. Villages are primarily residential communities with a diversity of housing types and mix of uses appropriate to the scale and character of the particular village. Villages are comprised of residential neighborhoods and include a mixed-use village center to serve as the focal point for the community's support services and facilities. Section 4.08.01.UU, LDC. Villages may be not less than 100 acres or more than 1,000 acres in size. Section 4.08.01.C.2, LDC. Towns are the most diverse SRA form, with a full range of housing types and mix of uses. Towns have urban level services and infrastructure to support communities that are compact, mixed use, human scale, and provide a balance of land uses to reduce automobile trips and increase livability. Section 4.08.01.RR, LDC. Towns may be not less than 1,000 acres or more than 4,000 acres in size. Section 4.08.07.C.1, LDC. CRDs are communities which provide flexibility with respect to the mix of uses and design standards, but which otherwise comply with the standards of a Hamlet or Village. Section 4.08.01.F, LDC.

Under the RLSA program, the communities noted above can only be established on privately owned lands that meet specific suitability criteria and cannot occur on lands which are designated as FSAs, HSAs, WRAs, or lands previously designated as SSAs. Section 4.08.07, LDC. In order to establish one of these communities, a land owner must have land designated as an SRA and have reserved an adequate number of Credits from established SSAs within the RLSA. Section 4.08.07, LDC establishes the process for County approval and designation of an SRA. The process includes a pre-application conference, SRA designation application, County staff application review, a County staff report on the application, and public hearings prior to County approval of the SRA. Section 4.08.07.F, LDC. The SRA designation application is a detailed submittal which includes a Natural Resource Index assessment, a detailed SRA master plan, an SRA development document comprised of data supporting the SRA master plan and describing the proposed community, an SRA public facilities impact assessment report, an economic assessment report, and a Credit use and reconciliation application identifying Credits and detailing the transfer and the consumption of specific Credits from SSAs. Section 4.08.07, LDC.

The County's approval of the SRA application is memorialized through an "SRA Credit Agreement." Section 4.08.07.D.11, LDC. The SRA Credit Agreement contains the number of Credits to be utilized for the proposed community; the source of the Credits; the SRA Master Plan reflecting the land uses, number of residential units, gross leasable retail and office square footage, and other land uses; and any commitments for lands designated as requiring special treatment. In addition, the SRA Credit Agreement must acknowledge that the conversion of SRA land may not commence until an SRA Credit Agreement Memorandum is recorded with the Collier County Clerk of Courts. Section 4.08.07.D.11.b, LDC. The SRA Credit Agreement is not effective until the land owner provides adequate demonstration that it has acquired the Credits necessary for the SRA.

Section 4.08.07.D.11.c, LDC. The land owner is required to record an SRA Credit Agreement Memorandum to provide recorded notice of the designated SSAs which provide the Credit to establish the new community reflected in the approved SRA. Section 4.08.07.D.11.d, LDC.

Under the RLSA program, amendments to approved SRAs will be subject to the complete SRA application process. Minor refinements or changes to an SRA master plan or development document can be approved by the County Manager. Section 4.08.07.F.4, LDC.

As noted above, SRA approvals are dependent upon acquiring Credits from designated SSAs. SSAs are designated through a review and County approval process established in Section 4.08.06, LDC. An SSA can be established over privately held land designated by the RLSA overlay as FSA, HSA, WRA, Open Land, or Restoration Zone Land. This process includes a pre-application conference, SSA designation application, County staff application review, a County staff report, and the development and execution of an SSA Credit Agreement and an SSA Easement Agreement. The designation of an SSA is subject to a public hearing and Board of County Commissioners approval. Section 4.08.06.E, LDC.

Credits are generated from SSAs when the land owner agrees to restrict or remove land uses from the property that are available under the property's baseline zoning. For example, the zoning classification of land within the RLSA allows land uses such as residential, mining, recreational, agriculture, and conservation uses. In order to generate Credits, the land owner agrees through the SSA Credit Agreement and SSA Easement Agreement to remove one or more of those land use layers, precluding those uses on the SSA lands. A list of the land uses which can be removed through this process include:

1) Residential Land Uses,
2) General Conditional Uses,
3) Earth Mining and Processing Uses,
4) Recreational Uses,
5) Agriculture – Group 1,
6) Agriculture – Support Uses,
7) Agriculture – Group 2, and
8) Conservation, Restoration, and Natural Resources. Section 4.08.06.B.4, LDC.

According to the County Land Use Matrix, each land use layer includes several permitted and conditional uses. According to Section 4.08.06.B.4, LDC, the removal of a land use layer includes each listed permitted and conditional use,[2] and land use layers are removed sequentially and cumulatively in the order listed above. Section 4.08.06.B.4, LDC.

Section 4.08.06, LDC provides the minimum land use layers that must be removed upon the designation of an area as an SSA. For example, according to Section 4.08.06 A.2., the SSA

[2]For instance, removal of the Residential Uses land use layer would include the removal of the following principal, accessory, and conditional uses: 1) Single-family dwellings, including mobile homes, 2) Mobile Homes, 3) Private boathouses and docks on lake, canal, or waterway lots, 4) Recreational facilities integral to residential development, including golf courses, clubhouses, community center buildings, tennis facilities, parks, playgrounds, and playfields, and 5) Guesthouses.

designation of an FSA requires the removal of the first four land use layers,[3] including the permitted and conditional uses.

Under the RLSA, the land owner will encumber the land within an SSA with a Stewardship Easement Agreement. The purpose of the Stewardship Easement Agreement is to assure that specified land use levels have been removed, and cannot occur within the easement area, and to provide for long-term management to maintain the exiting condition of the land. Section 4.08.06, LDC. The Stewardship Easement Agreement describes the land uses which can occur within the SSA, identifies the specific land management measures for the land, and identifies the party responsible for such measures. Sections 4.07.06.7.b and 4.07.06.C.8.b, LDC. The Stewardship Easement Agreement will be executed by the land owner, the County, and either the Florida Department of Environmental Protection (FDEP), the Florida Department of Agriculture and Consumer Services, the SFWMD, or a recognized land trust. Section 4.07.06.C.8, LDC.

Subsequent to the County's approval of the SSA Credit Agreement, the land owner will record an SSA Memorandum, which includes as an attachment the Stewardship Easement Agreement describing the land uses remaining on the land, the number of credits assigned to the SSA, and a restoration plan summary, if restoration is to be undertaken. According to Section 4.08.06 B., no increase in density or additional uses except for those expressly reserved in the SSA Credit Agreement or SSA Easement Agreement can be authorized by the County once the SSA has been approved as noted above.

The number of Credits generated from an SSA is determined by the County and is a function of (a) the specific land use layers removed by the land owner through the SSA Credit Agreement and SSA Easement Agreement, (b) the ecological significance of the land within the SSA, referred to as the Natural Resource Index Value, and (c) the level of restoration, if any, proposed by the land owner. See GMP, FLUE, RLSA Overlay Policies 1.7 and 1.8. Under the RLSA program, land owners are encouraged to generate Credits by preserving existing uses (e.g., agriculture), limiting future use (e.g., residential, resource extraction, agriculture conversion), and restoring areas within the RLSA designated as FSAs, HSAs, and WRAs. Credits can be generated from lands within the RLSA District kept in permanent agriculture, open space, or conservation uses through removal of one or more land use layers as described above. See RLSA Overlay Section, Section 5.D, Policy 1.6, GMP FLUE and Section 4.08.06.B, LDC. Land owners are discouraged from seeking to generate such Credits from "Open Areas," since most lands designated as "Open" have little ecological significance. Section 4.08.05.D, LDC. The Credits generated from an SSA may be used to entitle a new community in an approved SRA. Credits generated from one SSA may be allocated to one or more SRAs, and an SRA may receive Credits generated from one or more SSAs. Section 4.08.04.F, LDC.

Rural Lands West

The Rural Lands West community will be located adjacent to Golden Gate Estates at Oil Well Road on land that has been actively farmed for decades. The Project site falls within the boundaries of the Big Cypress Stewardship District. The Project site totals 10,264.63± acres and is located in Sections

[3]Residential Use, General Conditional Use, Earth Mining and Processing Use, and Recreational Use.

1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; Collier County (Exhibit 2). The Project is located along the eastern boundary of Golden Gate Estates. Oil Well Road (County Road (CR) 858) bisects the Project site, and Immokalee Road is located approximately two miles to the north. Camp Keais Strand occupies the eastern portion of the Project and Shaggy Cypress Swamp is located north of Oil Well Road within the Project boundary. An aerial photograph of the Project site is provided as Exhibit 3.

Rural Lands West will be a master planned mixed-use community consisting of residential neighborhoods connected by a network of local streets, sidewalks, multi-use trails, and a centralized mixed-use town center and two satellite town centers that will provide goods and services, gathering places, entertainment, dining, and multiple employment opportunities. Community facilities will include civic, cultural, institutional, health care, governmental, schools, and essential services necessary to support town residents. A community park and a network of neighborhood parks, golf courses, amenity centers, and lakes will establish the open space and recreational framework for the community.

Site Plan for Rural Lands West

Rural Lands West utilizes the rural planning strategy under the Collier County RLSA program described above. To summarize, the County has identified certain lands within the RLSA to have low natural resource value and to be suitable for development of new communities under the RLSA program. Under the RLSA program, new communities can only be established on privately owned lands that meet specific suitability criteria, and cannot occur on lands that are designated as FSAs or HSAs. During the development of the RLSA program, natural resources, including wetlands and listed species habitat, were identified and mapped on a regional scale. According to this mapping, FSAs are primarily wetlands located within the Camp Keais Strand and Okaloacoochee Slough, establishing the primary wetland flow-way systems in the RLSA. HSAs include lands whose natural characteristics make them suitable habitat for listed species, and also include lands which are contiguous to the listed species habitat and form a continuum of landscape that could improve listed species habitat values.

Areas that have minimal ecological significance were designated as open. In order to direct the development of communities away from areas of higher natural resource value, the open areas act as receiving areas for density and development, and the HSAs and FSAs are used as sending areas. As such, Rural Lands West is complying with the requirements of and achieving the purposes of the RLSA program by focusing construction within open areas and away from HSAs and FSAs. Rural Lands West avoids impacts to significant wetlands and listed species habitat by directing the new communities away from HSAs and FSAs. The site plan for the Project is shown on the Corps permit drawings provided under separate cover.

The applicant considered several design alternatives for the Project to further minimize the discharge of dredged or fill material to regulated wetlands. The site plan was designed to utilize existing and permitted agriculture fields for Rural Lands West and to avoid and minimize discharges and other impacts to the natural wetland habitats on-site. The regulated discharges to wetlands, for which a Corps permit is sought, are primarily limited to the placement of fill materials to allow for

infrastructure construction in the form of road crossings and surface water management facilities. The location and configuration of preserved areas of land and water were designed to connect these areas to the Camp Keais Strand, which abuts the eastern Property boundary. Refer to the plans provided as part of the Corps permit drawings.

As part of the applicant's public outreach program for the previously proposed Town of Big Cypress, several pre-application meetings were held with the FWCC and the USFWS to discuss the management and conservation of listed species habitat. The applicant, with input from FWCC and USFWS staff, focused on implementing project design standards to minimize impacts to native habitats existing on-site and to minimize the potential for large mammal (i.e., Florida panther and Florida black bear (*Ursus americanus floridanus*)) interactions with humans. The applicant has carried forward these design standards in the Rural Lands West project.

To minimize impacts to potential panther and bear habitat, the Project is located primarily within existing farm fields being actively used on a commercial scale for production of row crops. Direct impacts to the existing native habitats (located within the permitted surface water management reservoirs) were avoided as much as feasible. To minimize impacts to potential wildlife habitat, direct and indirect impacts to the natural areas located on the Project's eastern boundary were avoided. The Project design includes two wildlife corridors that will provide valuable connections between Shaggy Cypress Swamp and Camp Keais Strand for large mammal movement. The design also includes a lake buffer between the development areas and native habitats associated with Camp Keais Strand and Shaggy Cypress Swamp to deter large mammals from accessing the development areas and internal preserves.

Connectivity between the internal preserves will be maintained by the construction of wildlife crossings under proposed roads within Rural Lands West. The wildlife crossings will be appropriately sized to discourage use by large animals while accommodating small mammals as well as amphibians and reptiles. Habitats within the internal conservation areas will be managed for use by small mammals, reptiles, and amphibians. Management objectives for the internal conservation areas will be implemented to limit prey and foraging opportunities for panthers and bears, thus discouraging these species from attempting to access developed areas within Rural Lands West. A Listed Species Management and Human-Wildlife Coexistence Plan describing these management objectives is provided as Exhibit 4.

Corps Permitted Work and Mitigation

The Project proposes to discharge dredged or fill material to 293.48± acres of wetlands (291.70± acres of jurisdictional wetlands and 1.78± acres of isolated wetlands). Accordingly, impacts to areas subject to Corps jurisdiction represent less than 3 percent of the approximately 10,264 acre Project site. The mitigation that will be provided to offset the functional loss associated with these discharges is extensive. The mitigation will include the enhancement and preservation of 3,906.71± acres (87 percent) of on-site wetlands. As a part of the compensatory mitigation, exotic vegetation will be hand removed from 3,474.54± acres of the on-site wetlands. Supplemental planting will be conducted in 740.93± acres of the 3,474.54± acres where exotic vegetation currently exceeds 50 percent coverage. Exotic vegetation will be mechanically removed from 431.31± acres of the on-site

wetlands with greater than 75 percent cover by exotic species. After exotic removal in the 431.31± acres has been conducted, the areas will be graded to wetland elevations and planted with native wetland vegetation. The mitigation plan also includes the restoration of 25.59± acres of wetlands from existing elevated dirt farm roads and agriculture fields within the on-site preserve areas. These restored/created wetlands will be graded to wetland elevations, and planted with native wetland vegetation.

In addition, the wetland compensatory mitigation plan includes enhancement and preservation of 218.82± acres of on-site upland preserves and upland buffers and the restoration of 48.25± acres of on-site uplands important to the life cycle of wetland dependent wildlife species. Also, 25.46± acres of wetlands will be preserved and enhanced on-site but not used for compensatory mitigation, and 883.36± acres of wetland restoration will occur within existing farm fields under the Collier County RLSA program but not used for compensatory mitigation for wetland impacts for this application.

The on-site wetland and upland enhancement will include the removal of exotic and nuisance vegetation including, but not limited to, Brazilian pepper (*Schinus terebinthifolius*), melaleuca (*Melaleuca quinquenervia*), Australian pine (*Casuarina equisetifolia*), downy rose-myrtle (*Rhodomyrtus tomentosus*), and cattail (*Typha latifolia*).

The hand removal of exotic and nuisance vegetation referenced above will be conducted through one or more of the following methods: (1) cut exotics within 12 inches of ground elevation, hand remove cut vegetation, and treat remaining stump with approved herbicide; (2) girdle standing melaleuca and Australian pine with diameter at breast height (DBH) greater than four inches and apply approved herbicide to cambium; (3) foliar application of approved herbicide to melaleuca saplings, Brazilian pepper, Australian pine, and downy rose-myrtle; and (4) foliar application of approved herbicide or hand pulling of exotic seedlings and cattails.

In addition, the surface water management system has been designed to maintain appropriate wetland hydroperiods within the preserved wetlands. The wetland hydroperiods will be maintained to provide natural wet and dry cycles which provide foraging for wading birds.

Conservation areas for the Project will be placed under a conservation easement granted to the SFWMD with third party enforcement rights granted to the Corps and the USFWS. The Project will also include regional conservation measures that will be implemented to preserve and restore potential habitats for wildlife. These conservation measures include the establishment of SSAs 14, 15, 16, and 17 through the Collier County RLSA program.

As part of the Collier County approval for the Project, the applicant has designated SSAs on approximately 10,000± acres of land within the RLSA. In 2008, Collier County approved three separate SSAs totaling 10,000± acres (SSA 14, SSA 15, and SSA 16) that will be associated with Rural Lands West. The applicant has also proposed 3,117.9± acres to be designated as SSA 17. The application for SSA 17 is currently under review by Collier County staff.

These SSAs are comprised of environmentally sensitive lands and wildlife habitat within the Camp Keais Strand. The Florida Forever program currently lists the land included in SSAs 14 and 15 as

essential parcels remaining for targeted acquisition, reflecting its high environmental value. The Florida Forever Five Year Plan also describes cypress swamps and marsh areas of the Corkscrew Regional Ecosystem Watershed (CREW), including Camp Keais Strand, as important habitat for the Florida panther and Florida black bear. SSA 16 is located adjacent to the northern portion of the Okaloacoochee Slough and Devil's Garden, a Florida Forever targeted acquisition parcel on the Collier and Hendry county line. In addition, the eastern portion of SSA 16 is located within the Big Cypress Area of Critical State Concern. Therefore, the designations of these SSAs under RLSA represents a significant step towards restoring Camp Keais Strand as a large mammal wildlife corridor connecting CREW lands and Corkscrew Swamp to the north, to the FPNWR to the south. Exhibit 5 depicts SSAs 14, 15, and 16; the proposed SSA 17; the locations of other existing SSAs and SSAs proposed by others; Corkscrew Swamp; and the FPNWR.

Project construction will be phased over time depending on market conditions. The mitigation will be phased and will be implemented concurrent with Project construction. Project construction will involve construction equipment typically used in Southwest Florida for land development activities. Construction equipment used for land clearing activities includes rubber tire front-end loaders, bulldozers, and track backhoes. Equipment used in earth moving activities includes rubber tire pans, track excavators, bulldozers, and hydro axes.

SITE SPECIFIC INFORMATION

Existing Agricultural Operations

Rural Lands West is located within portions of the Shaggy Cypress Agricultural Operation and Camp Keais Strand Agricultural Operation as shown on Exhibit 1. The following summarizes the historical and ongoing Shaggy Cypress and Camp Keais Strand Agricultural Operations.

The Shaggy Cypress Agricultural Operation totals 10,560.34± acres and is located in Sections 14, 23, 24, 25, 26, 27, 28, 34, and 35; Township 47 South; Range 28 East; and Sections 1, 2, 3, 10, 11, 12, 13, 14, and 15; Township 48 South; Range 28 East; Collier County. The site stretches from north of Immokalee Road to Oil Well Road (CR 858). The Shaggy Cypress Agricultural Operation has been used for agriculture activities since the early 1900s. These agricultural activities have included vegetable farming, cattle grazing, sod farming, and recreational uses. In April 1990, the Shaggy Cypress Agricultural Operation received conceptual approval from the SFWMD (Permit No. 11-90023-S) as part of the overall approval of 36,475± acres of citrus development. In February 2009, a modification to the SFWMD permit was obtained which authorized new wetland impacts for reservoir dike improvements. A Corps permit for the Shaggy Cypress Agricultural Operation was pursued concurrently with the SFWMD permit modifications. In July 2011, the Corps issued Permit No. SAJ-2008-02431 for the Shaggy Cypress Agricultural Operation which authorized the new wetland impacts for the dike improvements, totaling 35.20± acres of wetland impacts.

The Camp Keais Strand Agricultural Operation totals 11,649.42± acres located in Sections 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; and Sections 1, 2, 3, 10, 11, 12, 15, 22, and 27; Township 49 South; Range 28 East; Collier County. The site is located east of

Golden Gate Estates and south of Oil Well Road (CR 858).The Camp Keais Strand Agricultural Operation has been used for agriculture activities since the early 1900s. These agricultural activities have included vegetable farming, cattle grazing, sod farming, and recreational uses. In April 1990, the Camp Keais Strand Agricultural Operation received conceptual approval from the SFWMD (Permit No. 11-90023-S) as part of the overall approval of 36,475± acres of citrus development. In February 2009, a modification to the SFWMD permit was obtained which authorized new wetland impacts for reservoir dike improvements. A Corps permit for the Camp Keais Strand Agricultural Operation was pursued concurrently with the SFWMD permit modifications. In July 2011, the Corps issued Permit No. SAJ-2008-02429 for the Camp Keais Strand Agricultural Operation, which authorized the new wetland impacts for the dike improvements totaling 9.93± acres of wetland impacts.

The applicant has made use of these previously permitted features employed by existing agricultural operations when designing Rural Lands West. In addition, the Project's surface water management system will utilize the stormwater management reservoirs permitted and constructed by the agricultural operations. The majority of development proposed under the Project has been concentrated in areas permitted for and currently used for harvesting row crops, as such minimizing impacts to wetlands and native habitats.

Land Cover

Vegetation mapping for the Project site was originally conducted by Passarella & Associates, Inc. (PAI) using 2004 Collier County rectified aerial photographs. Wetland lines were flagged in the field and survey located. Groundtruthing to map the vegetative communities on the property was conducted between December 2006 and February 2007. The Florida Land Use, Cover and Forms Classification System (FLUCFCS) (Florida Department of Transportation 1999) was utilized to map the vegetation communities. Mapping was based on Level III FLUCFCS with Level IV used to denote hydrologic conditions and disturbance. "E" codes were used to show levels of exotic invasion (i.e., Brazilian pepper and melaleuca).

Groundtruthing to update the FLUCFCS map for Rural Lands West was conducted by PAI in July 2014 using 2014 Collier County aerial photographs. In August 2015, further groundtruthing was conducted using 2015 Collier County aerial photographs. AutoCAD Map 3D 2015 software was then used to determine the acreage of each mapping area. The resulting FLUCFCS map is provided as Exhibit 6.

A total of 77 vegetative associations and land uses (i.e., FLUCFCS codes) were identified on the property. The dominant land use on the property is agriculture. The land use types Cropland and Pastureland (FLUCFCS Code 210), Improved Pasture (FLUCFCS Code 211), Unimproved Pasture (FLUCFCS Code 212), and Row Crops (FLUCFCS Code 214) comprise 48.6 percent (4,978.43± acres) of the site. Due to rotation of vegetation crops, some fields may be used for pasture during interim periods of crop rotation. As such, the FLUCFCS map reflects conditions that were present on the property at the time field work was conducted for the mapping effort; areas mapped as pasture may be in row crops in subsequent years.

The native areas on-site are dominated by Cypress, Disturbed (FLUCFCS Code 6219), which comprises 29.4 percent of the Project site. Native upland habitats are dominated by Pine Flatwoods, Disturbed (FLUCFCS Code 4119), which comprises 2.6 percent of the site.

A table summarizing the acreages and a description of each of the FLUCFCS classifications are provided in Exhibit 7.

Listed Species Surveys

Listed species surveys were previously conducted for the Big Cypress Stewardship District and the Town of Big Cypress. The Big Cypress Stewardship District encompasses the Rural Lands West site and the previous Town of Big Cypress project limits are located within the Rural Lands West boundaries. The previous Town of Big Cypress listed species surveys were conducted by PAI in March through July 2007, October 2007, and November 2007. In addition to the listed species surveys, species-specific surveys were conducted for the Town of Big Cypress between 2007 and 2009. These species specific surveys include nesting and non-nesting season foraging surveys for the red-cockaded woodpecker (RCW), nesting season surveys for crested caracara, burrowing owl (*Athene cunicularia*) surveys, Big Cypress fox squirrel (*Sciurus niger avicennia*) surveys, and Florida bonneted bat acoustic surveys. A description of the survey methodology and the results of the previous listed species surveys for the Big Cypress Stewardship District and the Town of Big Cypress are provided in Exhibits 8 and 9, respectively.

Updated listed species surveys were conducted by PAI in May through July 2014 and June through August 2015 for Rural Lands West. The updated surveys include the development areas and the conservation areas internal to the Project. The conservation areas located east of the Project development area (SSA 15) were not re-surveyed for listed species since no development is proposed in these areas. A description of the survey methodology and results of the updated listed species surveys are included in Exhibit 10.

In addition to the updated listed species surveys, an updated nesting season survey for the RCW was conducted in May and June 2014 and an updated non-nesting season foraging survey for RCW was conducted in December 2014 by PAI for the Project. No RCW or RCW cavities were documented during the surveys.

An updated crested caracara survey was conducted January through April 2016 for the Project. During the survey, a crested caracara nest was documented along Oil Well Grade Road approximately 3,920 feet north of the Project boundary. The crested caracara nest is located within a cabbage palm (*Sabal palmetto*) on lands within the Big Cypress Stewardship District. This is a previously undocumented crested caracara nest.

During field work conducted in the spring of 2016 on the Project site, a bald eagle (*Haliaeetus leucocephalus*) nest was documented along Oil Well Grade Road approximately one-third mile north of Oil Well Road. The bald eagle nest is located within a slash pine (*Pinus elliottii*) tree along Oil Well Grade Road. This is a previously undocumented bald eagle nest.

Ten listed wildlife species and nine listed plant species were documented within the Project Boundary during the wildlife surveys and other field work conducted on the property. In addition to listed species, the Florida black bear and bald eagle were also documented. Although no longer listed species, the black bear remains subject to the FWCC bear management plan and the bald eagle is protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Tables 1 and 2 summarize the listed wildlife and plant species that have been documented within the ERP Project Boundary during the 2007-2009 and 2014-2016 surveys as well as recent field work. Approximate locations of listed wildlife species documented during the 2007-2009 and 2014-2016 surveys are shown on an aerial provided within Exhibit 10.

Table 1. Summary of Listed Wildlife Species Documented Within Project Boundary

Common Name	Scientific Name	Listing Status	
		USFWS	FWCC
Reptiles			
American alligator	*Alligator mississippiensis*	FT(S/A)	FT(S/A)
Birds			
Little blue heron	*Egretta caerulea*	--	ST
Tri-colored heron	*Egretta tricolor*	--	ST
Roseate spoonbill	*Ajaia ajaja*	--	ST
Wood stork	*Mycteria americana*	FT	FT
Florida sandhill crane	*Grus canadensis pratensis*	--	ST
Crested caracara	*Caracara cheriway*	FT	FT
Bald eagle	*Haliaeetus leucocephalus*	*	*
Mammals			
Big Cypress fox squirrel	*Sciurus niger avicennia*	--	ST
Florida bonneted bat	*Eumops floridanus*	FE	FE
Florida panther	*Puma concolor coryi*	FE	FE
Florida black bear	*Ursus americanus floridanus*	--	**

FWCC – Florida Fish and Wildlife Conservation Commission
USFWS – U.S. Fish and Wildlife Service
FE – Federally Endangered
FT – Federally Threatened
FT (S/A) – Federally Threatened due to similarity of appearance
ST – State Threatened
*Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act
**FWCC Management Plan

Table 2. Summary of Listed Plant Species Documented Within Project Boundary

Common Name	Scientific Name	Designated Status		Observed Locations (FLUCFCS Code)
		FDACS	USFWS	
Bird's nest spleenwort	*Asplenium serratum*	E	-	6179, 6219
Butterfly orchid	*Encyclia tampensis*	C	-	6219, 6249, 6309
Cinnamon fern	*Osmunda cinnamomea*	C	-	6219, 6249
Common wild pine	*Tillandsia fasciculata*	E	-	4119, 4349, 6219, 6249, 6259
Fuzzy-wuzzy air plant	*Tillandsia pruinosa*	E	-	6219, 6249, 6309
Giant wild pine	*Tillandsia utriculata*	E	-	6219, 6249, 6309
Royal fern	*Osmunda regalis*	C	-	6219
Soft-leaved wild pine	*Tillandsia velenzuelana*	T	-	6219, 6249, 6309
Stiff-flower star orchid	*Epidendrum rigidum*	E	-	6219

FDACS – Florida Department of Agriculture and Consumer Services
USFWS – U.S. Fish and Wildlife Service
C – Commercially Exploited
E – Endangered
T – Threatened

The following is site specific information for the Eastern indigo snake, crested caracara, Everglade snail kite, RCW, wood stork, Florida panther, and Florida bonneted bat. Included are habitat descriptions for these species summarized from the South Florida Multi-Species Recovery Plan (USFWS 1999) and "Bats of Florida" (Marks and Marks 2006). The action area for each species referred in the sections below is established by the USFWS and reflects the area within which the USFWS has determined that direct or indirect effects to the species may occur. Consistent with USFWS's longstanding consultation practice, in the sections below, cumulative effects are analyzed for those species that may be subject to formal consultation based on a "may affect" determination with respect to the Project.

Eastern Indigo Snake

Habitat Description

Over most of its range, the Eastern indigo snake frequents several vegetative cover types, including pine flatwoods, scrubby flatwoods, high pine, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered areas. Eastern indigo snakes need a mosaic of vegetative cover types to complete their annual cycle. Interspersion of tortoise-inhabited sandhills and wetlands improves habitat quality for this species (Landers and Speake 1980, Auffenberg and Franz 1982). Eastern indigo snakes require sheltered "retreats" from winter cold and desiccating conditions. Wherever the Eastern indigo snake occurs in xeric habitats, it is closely associated with the gopher tortoise (*Gopherus polyphemus*), the burrows of which provide shelter from winter cold and desiccation (Bogert and Cowles 1947, Speake *et al*. 1978, Layne and Steiner 1996).

Project Information

The Project includes 5,443.77± acres of agricultural fields, palmetto prairie, pine flatwoods, pine, live oak, cabbage palm, freshwater marshes, and disturbed land with varying degrees of exotic infestation. The Eastern indigo snake is far ranging and may utilize activity areas of 125 to 250 acres or more (Moler 1992). There is limited upland habitat on-site that is not part of the active on-going agricultural operation and no gopher tortoise burrows have been documented during listed species surveys or other field work conducted on the Project site. No Eastern indigo snakes have been documented on the Project site.

No critical habitat has been designated for the Eastern indigo snake.

Crested Caracara

Habitat Description

The crested caracara is a large, non-migratory raptor that feeds both on prey and carrion and is often found with flocks of turkey vultures (*Cathartes aura*) and black vultures (*Coragyps atratus*). The population of crested caracara found in peninsular Florida is genetically isolated from other populations of crested caracara subspecies found in the Southwestern United States and portions of Central and South America (USFWS 1999). Crested caracara habitat consists largely of the native prairies of Florida with their associated marshes and cabbage palm and cabbage palm/oak (*Quercus* spp.) hammocks (Rodgers *et al.* 1996*a*). Cabbage palms in open habitats are important for nesting. Crested caracaras generally nest during the winter time with the peak occurring during January and February. The birds show high nest site fidelity and are often observed to construct nests in the same tree (USFWS 1999).

Project Information

The Project includes 102.06± acres of dry prairie, cabbage palm, live oak, hydric cabbage palm, and freshwater marshes with varying degrees of exotic infestation. Crested caracara have been observed in areas designated as Cropland and Pastureland (FLUCFCS Code 210); perched on a pine snag located within Hydric Brazilian Pepper (FLUCFCS Code 4221); and perched on a cypress (*Taxodium distichum*) tree within Cypress, Disturbed (FLUCFCS Code 6219) habitats.

A nesting season survey for the crested caracara was conducted on the Big Cypress Stewardship District, which encompasses the Project site, in February and March 2007. The surveys were conducted according to the USFWS Draft Standard Local Operating Procedures (2002) for Audubon's Crested Caracara. No crested caracara or their nests were observed during the 2007 survey. The Big Cypress Stewardship District crested caracara survey report which details survey methodology and survey results has been included as Exhibit 11.

As part of the USFWS review for the Town of Big Cypress, an additional nesting season crested caracara survey was conducted for the Town of Big Cypress project from January through April 2009. The survey was conducted according to the USFWS Draft Species Conservation Guidelines

for South Florida for the Audubon's Crested Caracara (USFWS 2004*a*). The survey report, which details survey methodology and survey results for the 2009 crested caracara survey, is included as Exhibit 12.

One active crested caracara nest was identified in a cabbage palm tree in the southern portion of the Project during the 2009 survey. However, during the last two days of the survey, no caracaras were observed in the vicinity of the identified nest. Due to the absence of caracaras, the condition of the nest was inspected. The nest appeared to be destroyed. Approximately two-thirds of the nest had been torn apart. Raccoon (*Procyon lotor*) scratch marks were observed on the bottom of the cabbage palm tree, and there were fragments of egg shells on the ground under the nest tree. No further nesting activity was documented during the remainder of the 2009 survey.

In 2016, an updated crested caracara nesting season survey was conducted for Rural Lands West between January and April 2016. The survey report for the 2016 crested caracara survey is included as Exhibit 13. One active nest was documented along Oil Well Grade Road approximately 3,920 feet north of the Project boundary. The crested caracara nest is located within a cabbage palm on lands within the Big Cypress Stewardship District.

The USFWS consultation area for crested caracara and approximate locations of documented crested caracara nests is provided as Exhibit 14.

No critical habitat has been designated for the crested caracara.

Everglade Snail Kite

Habitat Description

The snail kite is a non-migratory, medium-sized raptor (Sykes *et al.* 1995) that feeds almost exclusively on apple snails (*Pomacea paludosa*) (Cary 1985). Its current range encompasses six large freshwater watersheds including the Upper St. Johns, Kissimmee Valley, Lake Okeechobee, Loxahatchee Slough, the Everglades, and the Big Cypress basin. Their habitats consist of freshwater marshes and the shallow vegetated edges of lakes (natural and man-made) where apple snails can be found (Bailey 1978). They require foraging areas that are relatively clear and open in order to visually search for apple snails. Therefore, dense growth of herbaceous or woody vegetation is not conducive to efficient foraging (Sykes 1979, Beissinger 1988).

Nesting almost always occurs over water, which deters predation (Sykes 1987). Nesting substrates include small trees (usually less than ten meters in height), including willow (*Salix caroliniana*), bald cypress, pond cypress (*Taxodium distichum* var. *nutans*), melaleuca, sweetbay (*Magnolia virginiana*), swamp bay (*Persea palustris*), pond apple (*Annona glabra*), and dahoon holly (*Ilex cassine*). Shrubs used for nesting include wax myrtle (*Myrica cerifera*), cocoplum (*Chrysobalanus icaco*), buttonbush (*Cephalanthus occidentalis*), sesbania (*Sesbania* sp.), elderberry (*Sambucus canadensis*), and Brazilian pepper. Nesting can also occur in herbaceous vegetation, such as sawgrass (*Cladium jamaicense*), cattail, bulrush (*Scirpus validus*), and reed (*Phragmites australis*) (Sykes *et al.* 1995). Nests are more frequently placed in herbaceous vegetation around Lake

Kissimmee and Lake Okeechobee during periods of low water when dry conditions beneath the willow stands (which tend to grow to the landward side of the cattails, bulrushes, and reeds) prevent snail kites from nesting in woody vegetation. Nests constructed in herbaceous vegetation on the waterward side of the lakes' littoral zones are more vulnerable to collapse due to the weight of the nests, wind, waves, and boat wakes, and are more exposed to disturbance by humans (Chandler and Anderson 1974; Sykes and Chandler 1974; Sykes 1987; Beissinger 1986, 1988; Snyder *et al.* 1989). It is important to note that suitable nesting substrate must be close to suitable foraging habitat, so extensive areas of contiguous woody vegetation are generally unsuitable for nesting.

Roosting sites are also almost always located over water. Roost sites are in taller vegetation among low-profile marshes. Snail kites tend to roost around small openings in willow stands at heights of 1.8 to 6.1 meters, in stand sizes of 0.0 to 5 hectares. Roosting in melaleuca or pond cypress is in stands with tree heights of 4 to 12 meters (Sykes 1985).

Project Information

The majority (86 percent) of the wetlands on-site consist of forested wetlands, predominantly cypress and pine-cypress-cabbage palm vegetative communities with varying degrees of exotic infestation. There are 230.07± acres of willow, 128.01± acres of wetland shrub, 37.72± acres of freshwater marsh, and 1.71± acres of wet prairie habitats scattered throughout the forested wetlands. In addition, the Project includes 34.25± acres of open water consisting of agricultural ditches, cattle ponds, and a reservoir.

During listed species surveys and other field work on-site, no Everglade snail kites were documented on-site. There have been few apple snails (the primary food source for the snail kite) observed in the ditches and freshwater marshes on the Project site.

The Project is located within the USFWS Everglade Snail Kite Consultation Area (Exhibit 15). Critical habitat has been designated for the Everglade snail kite and is depicted in Exhibit 15. The Project is not located adjacent to or within designated critical habitat for the Everglade snail kite.

<u>Red-Cockaded Woodpecker</u>

Habitat Description

Pine stands, or pine-dominated pine/hardwood stands, with a low or sparse understory and ample old-growth pines, constitute primary RCW nesting and roosting habitat. The low or sparse understory affords unimpeded access to cavities. RCWs will abandon otherwise suitable nesting/roosting areas when the understory approaches cavity height (Wood 1996).

Nest and roost cavities are almost always excavated in old-age living pines; the average nest tree typically ranges between 63 and 130 years in age for longleaf pine (*Pinus palustris*) and between 62 and 149 years in age for other pine species (Hopkins and Lynn 1971, Wood 1983, Rudolph and Conner 1991). Longleaf pine is preferred where available (Hopkins and Lynn 1971, Lennartz *et al*. 1983, Hovis and Labisky 1985); however, cavities are also constructed in all other pine trees in

Florida with the exception of sand pine (*P. clausa*) and spruce pine (*P. glabra*). The old-age living pines selected for cavity excavation characteristically have thinner sapwood and greater heartwood diameter than other mature pines (Conner *et al*. 1994). Many cavity trees are also typically infected with a fungus (*Phellinus pini*) that decays the heartwood, thus facilitating cavity excavation (Jackson 1977, Conner and Locke 1982, Conner *et al.* 1994).

The overstory vegetation surrounding cavity trees in South Florida is also very sparse. RCW clusters are typically found in the older or oldest, sparsely stocked pine stands, where cavity trees are more widely spaced than trees found further north. Shapiro (1983) attributed the differences in cavity trees and vegetation to the poor site quality and growth conditions of South Florida flatwoods and historic timber management practices.

Bowman and Huh (1995) also found that hydric slash pines (*P. elliotii* var. *densa*) greater than 60 years old were significantly smaller in DBH and height and tended to have smaller crown to bole ratios than either mesic slash or longleaf pines of the same age. They also found that hydric slash pine had more heartwood rot than the other pines.

Older growth pine or pine-dominated stands are also needed for foraging, but not to the extent needed for nesting or roosting. RCWs will forage to some degree on hardwood trees and even in bayheads and cypress domes, but in general, mature pines constitute the primary foraging substrate. This habitat, in association with or proximal to nesting/roosting habitat, is necessary for population survival. In South Florida, RCWs need more habitat for foraging than in areas farther north because of the poor habitat quality (less than seven square meters/hectare of pine basal area) (Hovis and Labisky 1996).

In Southwest Florida (Charlotte, Collier, and Lee Counties), the hydric slash pine flatwoods provide the preferred nesting and foraging habitat for RCWs. In general, this vegetative community type in Southwest Florida had been historically maintained by fire and hydroperiod, which prevented the development of the dense mid-story more typical of xeric and mesic flatwoods in Southwest Florida. Also, hydric pine flatwoods were not as accessible to historic forestry, agriculture, and land clearing practices as the xeric and mesic communities (USFWS 1999).

Project Information

The Project includes 641.25± acres of pine and pine flatwoods habitats with varying degrees of exotic infestation. No RCWs or active RCW cavities were documented during the wildlife surveys, FLUCFCS mapping, wetland flagging, agency site visits, or other field work conducted on the Project site. No cavities in live trees have been documented on the Project site.

A nesting season and non-nesting season foraging survey for the RCW was conducted on the Big Cypress Stewardship District (including the Project site). The nesting season foraging survey was conducted in May and June 2007, and the non-nesting season foraging survey was conducted in October and November 2007. The surveys were conducted according to the USFWS Draft Red-Cockaded Woodpecker South Florida Survey Protocol (USFWS 2004*b*). No RCWs or RCW cavities were observed during the surveys. A RCW nesting and non-nesting season survey report which

details the survey methodology and survey results for the Big Cypress Stewardship District is provided as Exhibit 16.

In 2014, the RCW surveys were updated for Rural Lands West. An updated nesting season survey for RCWs was conducted in May and June 2014 and an updated non-nesting season foraging survey for RCWs was conducted in December 2014. No RCW or RCW cavities were documented during the surveys. The updated 2014 RCW nesting and non-nesting season reports are provided as Exhibit 17. There are no documented occurrences of RCWs within the immediate vicinity of the Project site. The nearest documented RCW colony is located approximately seven miles to the southwest of the Project.

The Project is not located in the USFWS RCW Consultation Area. No critical habitat has been designated for the RCW.

Wood Stork

Habitat Description

The wood stork is primarily associated with freshwater and estuarine habitats for nesting, roosting, and foraging. Wood storks typically construct their nests in medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water (Palmer 1962, Rodgers *et al.* 1996*b*, Ogden 1991). Historically, wood storks in South Florida established breeding colonies primarily in large stands of bald cypress and red mangrove (*Rhizophora mangle*). The large, historic Everglades National Park nesting colonies were in estuarine zones. These estuarine zones are also an important feeding habitat for the nesting birds.

In one study of wood stork nesting throughout Florida, which was conducted prior to the 1960s, more than half of all wood stork nests were located in large bald cypress stands, 13 percent were located in red mangrove, 8 percent in partially harvested bald cypress stands, 6 percent in dead oaks (*Quercus* spp.), and 5 percent in small pond cypress (Palmer 1962). Wood storks have also been observed constructing their nests in custard (pond) apple (*Annona glabra*), black gum (*Nyssa biflora*), buttonwood (*Conocarpus erectus*), black mangrove (*Avicennia germinans*), strangler fig (*Ficus aurea*), and Southern willow. Coastal nest sites occur in red mangroves and occasionally in Brazilian pepper, cactus (*Opuntia stricta*), and Australian pine.

During the non-breeding season or while foraging, wood storks occur in a wide variety of wetland habitats. Typical foraging sites for the wood stork include freshwater marshes and stock ponds; shallow, seasonally flooded roadside or agricultural ditches; narrow tidal creeks or shallow tidal pools; managed impoundments; and depressions in cypress heads and swamp sloughs. Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey (Ogden *et al.* 1978, Browder 1984, Coulter 1987). In South Florida, low, dry-season water levels are often necessary to concentrate fish to densities suitable for effective foraging by wood storks (Kahl 1964, Kushlan *et al.* 1975). As a result, wood storks will forage in many different shallow wetland depressions where fish become concentrated, either due to local reproduction by fish, or as a consequence of seasonal drying.

Project Information

The Project site includes 4,524.91± acres of wetlands and waters with varying degrees of exotic infestation. Wood storks have been documented on the Project site during the wildlife surveys, wetland flagging, and other field work conducted on the Project site. The approximate locations of the documented wood storks are shown on an aerial provided as Appendix B of Exhibit 10. The Project site is located within the Core Foraging Areas (CFA) of five wood stork rookeries as depicted in Exhibit 18. The rookeries with their distance to the property include: No. 619018 located 7.5± miles northwest; Barron-Collier located approximately 7.5 miles east; Sadie Cypress located 11.0± miles northeast; Collier-Hendry located 12.5 miles northeast; and No. 619141 located 14.0± miles of the property.

No critical habitat has been designated for the wood stork.

Cumulative Effects

This section includes an analysis of the potential cumulative effects to the wood stork from known projects located within the action area. The USFWS has determined the action area for wood storks to be any wood stork CFAs that overlap the Project. For Rural Lands West there are five 18.6 mile CFAs that overlap the Project. The combined area of these five CFAs is the action area considered for this analysis. The USFWS defines cumulative effects as those effects of future state or private activities, not including federal activities, which are reasonably certain to occur within the action area of the federal action subject to consultation.

The USFWS's wood stork action area totals 2,163.52± square miles and includes the five wood stork CFAs that encompass the Project. Wood storks are known to forage within suitable wetland habitats located throughout the wood stork action area. Data obtained from the National Wetland Inventory (NWI) indicate approximately 666,966.44 acres of wetlands containing potentially suitable habitat for wood stork foraging occur within the wood stork action area (Exhibit 19). The NWI data was obtained from the USFWS's website in July 2016.

SFWMD FLUCFCS mapping within the wood stork action area is provided as Exhibit 20. The SFWMD FLUCFCS mapping data documents land cover and land use as it existed in 2008-2009. This mapping was updated from the SFWMD's 2004-2005 FLUCFCS mapping through photograph-interpretation of 2008-2009 county-based aerial photography and was last updated in September 2011. This information was obtained from the SFWMD website in September 2013.

Enclosed as Exhibit 21 is a map depicting permit applications received by the SFWMD within the wood stork action area from July 2013 through July 2016. These permit applications include, but are not limited to land development projects, road projects, restoration projects, permit modifications, extensions, exemptions, and transfers. Enclosed as Exhibit 21A is a table summarizing project information for the SFWMD applications from August 2013 through August 2016 within the wood stork action area. Permit application information was obtained from the SFWMD website in July 2016.

The SFWMD permit application data was further evaluated to determine projects that received approved ERPs from the SFWMD within the wood stork action area from July 2013 through July 2016. To determine this, projects without a permit number were removed from the list of applications. Permit transfers, letter modifications, letter modifications with transfers, permit extensions, permit exemptions, and general permits (new and modifications) were also removed. In addition, projects not listed as "complete" or "hearing" (i.e., withdrawn, no response, response denied, under review, void, etc.) were eliminated.

The SFWMD ePermitting website was then researched to determine the ERP approval date and acreage of wetland impacts, wetland preserve, and upland preserve for the remaining projects. SFWMD ERPs within the wood stork action area issued from July 2013 through July 2016 are summarized in table format as Exhibit 22. In total, the SFWMD issued ERP permits for 269 projects from July 2013 through July 2016 (16 in 2013, 103 in 2014, 102 in 2015, and 48 in 2016). This affected 34,753.89± acres overall, impacted 440.25± acres of wetlands, and preserved 1,601.92± acres of wetlands and 693.14± acres of uplands. Over this three-year period, the SFWMD issued an average of 90 ERPs per year within the wood stork action area.

Enclosed as Exhibit 23 is a map depicting Southwest Florida Regional Planning Council (SWFRPC) Development of Regional Impact (DRI) Order applications received from 2013 through 2016, or currently pending from an earlier submittal. DRIs were acquired from the Florida Geographic Data Library website (http://www.fgdl.org/metadataexplorer/explorer.jsp) in July 2016. Enclosed as Exhibit 23A is a table summarizing active or approved DRI applications from 2013 through 2016 within the wood stork action area.

Enclosed as Exhibit 24 is a map depicting Planned Unit Developments (PUDs) within the wood stork action area from 2013 through 2016. The PUDs that are shown on Exhibit 24 were obtained from the Collier County and Lee County websites. County PUDs were selected based on the PUD approval date. Lee County projects that were listed as pending were also included. Lee County projects that were denied, withdrawn, expired, or vacated were excluded. Enclosed as Exhibits 24A and 24B are tables with project name, project acreage, wetland acreage, percent of wetlands on project, approval date, approval number, and application status for Collier County and Lee County PUDs from 2013 through 2016 within the wood stork action area, respectively.

A map with a cumulative display of SFWMD applications, DRIs, and PUDs within the wood stork action area from 2013 through 2016 overlaid on a NWI map is enclosed as Exhibit 25.

A comprehensive list of SFWMD applications, DRIs, and PUDs within the wood stork action area having less than five percent wetlands on-site from 2013 through 2016 is included as Exhibit 26. The table provides a list of identified projects, year approved, project acreage, wetland acreage, and percent of wetlands on-site.

A map depicting projects within the wood stork action area that were issued Corps Approved Jurisdictional Verifications with only non-jurisdictional determinations from 2009 through 2012 is attached as Exhibit 27. A table listing the project and associated non-jurisdictional wetland acreages

is included as Exhibit 27A. This information was obtained on January 28, 2012 and March 4, 2012 from Freedom of Information Act (FOIA) Request No. 12-189.

A map depicting lands within the wood stork action area that are currently protected for conservation purposes is provided as Exhibit 28. These lands include Florida Managed Areas identified by the Florida Natural Areas Inventory (FNAI); FDEP and SFWMD conservation easements; Collier County, Hendry County, and Lee County Future Land Uses designated as conservation/preservation; Conservation Collier land acquisition areas; Lee County 20/20 acquisition lands; and Collier County Flow-Way and Habitat Stewardship Areas. The conservation lands were obtained from a variety of sources which are described in the notes of Exhibit 28. Enclosed as Exhibit 28A is a table that provides the name of the conservation lands, the managing agency, the owner, the county in which it is located, and the total acres of the conservation lands shown on Exhibit 28. Exhibit 28B lists the SFWMD conservation easements shown on Exhibit 28.

To estimate the cumulative effects of future private actions on the wood stork, future actions likely to occur within the wood stork action area were identified and analyzed. Between July 2013 and July 2016 a total of 269 ERP permits were issued in the action area. Of these projects 116 could be expected to be subject to development without requiring a federal permit to impact wetlands; the remainder are likely to require a federal permit and undergo separate ESA Section 7 consultation. These 116 projects affect approximately 1,175.03 acres of land and impact 9.67 acres of wetlands. The average over the three year review period is 3.22± acres of wetland impacts per year.

State and county land alteration permits in Southwest Florida, not part of those actions listed above, generally include single-family residential developments within northern Golden Gate Estates and Lehigh Acres. Vacant lands in northern Golden Gate Estates are estimated to be developed at a rate of 417 lots or 1,740± acres each year of which 696± acres are wetlands. Vacant lands within the area of Lehigh Acres are estimated to be developed at a rate of 1,764 lots, affecting 441± acres a year, of which 66± acres are wetlands.

This combined annual level of development of wetlands within the Wood Stork action area (3.22 + 696 + 66 = 765.22± acres) represented in this cumulative effects analysis is representative of future non-federal actions. This annual cumulative loss also constitutes less than 0.1 percent of all wetlands within the five CFAs overlapping the Project (765.22/666,966.44 = 0.0011).

Although these wetlands may be impacted by non-federally reviewed actions and the productivity as a foraging prey base for wood storks may be affected, the loss/reduction of foraging value to the wood storks associated with these systems is non-significant (less than 0.1 percent), particularly in light of actions that will mitigate or offset these impacts through the implementation of conservation measures as outlined in the USFWS Recovery Plan for the wood stork. These measures include long term monitoring of wood stork nesting colony sites, public acquisition of wetlands, the protection and restoration of wetlands through conservation easements as part of the Wetlands Reserve Program and the Farm Bill, and the restoration of wetlands via programs such as the Comprehensive Everglades Restoration Program, Kissimmee River Restoration Project and Upper St. Johns Basin Project (USFWS 1996).

Florida Bonneted Bat

Habitat Description

Florida bonneted bats have been found roosting in both urban and forested areas. They are known to roost in rock crevices, tree cavities, buildings, and bat boxes. Their preferred roost site is under barrel tile roofs. Foraging habitat include areas over water such as ponds, wetlands, streams, canals, ditches, or over open ground such as forest edges, tree lines, corridors, prairies, pastures, golf courses, and croplands (Marks and Marks 2006).

The current range of the Florida bonneted bat is known to include both the east and the west coasts of the southern portion of the Florida peninsula (excluding the Keys). Specimens have been discovered in very few areas, including the Miami area in 1936; Coral Gables, Coconut Grove, and Miami in the 1950s; Punta Gorda in 1979; Fakahatchee Strand in 2000; and North Fort Myers in 2003 (Marks and Marks 2006).

Project Information

Due to the variable nesting and foraging habitats of the Florida bonneted bat, the Project site totaling 10,264.63± acres can be considered potential habitat. In addition, the Project lies within the USFWS Consultation Area and one of the USFWS Focal Areas for the Florida bonneted bat (Exhibit 29).

A Florida bonneted bat acoustic survey was conducted for the Town of Big Cypress in November and December 2007 using an AnaBat acoustic bat detector. No Florida bonneted bats were detected during this survey. A description of the survey methodology and results of this survey are included as Exhibit 30.

The Florida bonneted bat acoustic survey was updated in 2016 for Rural Lands West from May 2016 through August 2016 using a Song Meter (SM4BAT FS) recorder by Wildlife Acoustics. Over the survey period, 82,965 bat calls were recorded. Thirty-eight of those calls were Florida bonneted bat calls. A description of the survey methodology and results of this survey are included as Exhibit 31.

There is no critical habitat designated for the Florida bonneted bat.

Cumulative Effects

This section includes an analysis of the potential cumulative effects to the Florida bonneted bat from known projects located within the action area. The USFWS has determined the action area for the Florida bonneted bat as lands located within a seven mile radius of the Project. The Florida bonneted bat action area totals 291.06± square miles. The USFWS defines cumulative effects as those effects of future state or private activities, not including federal activities, which are reasonably certain to occur within the action area of the federal action subject to consultation.

Exhibit 32 is a map depicting SFWMD ERPs issued by the SFWMD within a seven mile radius of the Project and within the Florida Bonneted bat action area from July 2013 through July 2016. These

permits include, but are not limited to, land development projects, road projects, restoration projects, as well as permit modifications. SFWMD permit application information was obtained from the SFWMD website. The SFWMD permit application data was used to determine projects that received approved ERPs from the SFWMD within the Florida bonneted bat action area from July 2013 through July 2016. To determine this, projects without a permit number were removed from the list of applications. Permit transfers, letter modifications, letter modifications with transfers, permit extensions, permit exemptions, and general permits (new and modifications) were also removed. In addition, projects not listed as "complete" or "hearing" (i.e., withdrawn, no response, response denied, under review, void, etc.) were eliminated. The SFWMD ePermitting website was then researched to determine the ERP approval date and acreage of wetland impacts, wetland preserve, and upland preserve for the remaining projects. Exhibit 32A is a table summarizing project information for the SFWMD applications identified on Exhibit 32.

To estimate the cumulative effects of future private actions on the Florida bonneted bat, future actions likely to occur within the Florida bonneted bat action area were identified and analyzed. For this analysis, properties with less than five percent wetlands, although subject to federal review, were deemed unlikely to require a Section 404 permit from the Corps as these wetlands could be avoided through project design.

The South Florida Water Management District has issued ERP permits (July 2013 to July 2016) for 9 projects affecting 2,480.57± acres (Exhibit 32A) in the action area. Based on FLUCCS mapping, three of these projects could be expected to be developed without federal review. These projects would impact 34.23± acres, for an average of 11.41± acres annually. The USFWS has also previously estimated that an average of 16 single-family lots within northern Golden Gate Estates is developed per year with an average lot size of 4.1± acres. This amount of development would affect 66± acres annually.

Thus the cumulative effects analysis identifies about 77.41 acres (11.41 + 66 = 77.41±) within the action area that could be developed annually without federal review. As limited information is available on Florida bonneted bat territory size and foraging ranges, nightly and seasonal movements, dispersal capabilities, and dietary requirements, it is difficult to estimate how many bats may be disturbed by the future non-federal actions. Therefore it is conservatively estimated that one colony of Florida bonneted bats may be affected by the non-federal actions, as similarly predicted by the USFWS in previous biological opinions.

Florida Panther

Background

The Florida panther, a subspecies of cougar (*Puma concolor*), is listed as an endangered species pursuant to both the federal ESA and the Florida Endangered Species Act. 50 C.F.R. Section 17.11(h); Rule 68A-27.003(1)(ff), Florida Administrative Code. The Florida panther was originally listed as being threatened with extinction on March 11, 1967, pursuant to the Endangered Species Preservation Act, the predecessor of the ESA. 32 Fed. Reg. 4001. The panther has remained listed as an endangered species pursuant to the ESA. 50 C.F.R. Section 17.11(h). When listed, the panther

was considered a distinct subspecies (*Puma concolor coryi*) of cougar (*Puma concolor*) and was thus entitled to the same protections offered to individual species pursuant to the ESA. 16 U.S.C. Section 1532(16).

The panther once ranged from Louisiana and the lower Mississippi River Valley east through Arkansas, Mississippi, Tennessee, Alabama, Georgia, Florida, and South Carolina (Fakahatchee Strand EA 1985, p. 32). The panther was common in Florida through the first part of the 20th century (Fakahatchee Strand EA 1985, p. 33). Organized hunts were utilized for management through the 1930s and 1940s, with notable success. According to the USFWS, this hunting led to an identifiable decline in the panther population by the 1950s (Fakahatchee Strand EA 1985).

Today, the panther is restricted to less than five percent of its historic range with one recognized breeding population in South Florida. This decline has been attributed to overhunting and the destruction of wilderness (Fakahatchee Strand EA 1985, p. 32). The loss of habitat resulted from the progressive shrinking of the Big Cypress-Everglades region (Fakahatchee Strand EA 1985, p 33). This in turn was caused by a combination of factors including the construction of Alligator Alley in 1966-67, the subsequent building of major access roads off of Alligator Alley, the increased availability and affordability of off-road vehicles to the general public, and the general drying of the region caused by a vast system of canals which allowed off-road vehicles to go more places (Fakahatchee Strand EA 1985). The loss of habitat can largely be attributed to rapid and unmanaged growth prior to the 1970s (Fakahatchee Strand EA 1985, p. 34). The historic and lawful canal dredging, wetland draining, and fires which caused considerable loss of interior wetlands were undertaken without the environmental safeguards that were subsequently enacted by Congress in the 1970s, including the Federal Water Pollution Control Act and the CWA. In addition, Southwest Florida experienced extraordinary human population growth up through 1980. Between 1970 and 1980, Collier County's population increased by 126 percent, compared with an overall rate of growth in Florida of 43 percent (Fakahatchee Strand EA 1985, p. 35).

It is notable that at the time the Fakahatchee Strand EA was prepared by the USFWS, the USFWS considered expanding agricultural activities to pose the greatest threat to the Florida panther (Fakahatchee Strand EA 1985, p. 6). The overuse of pesticides and chemical fertilizers as well as ditching, diking, backpumping of water, and the removal of native vegetation were all cited by the USFWS as contributing to the challenges to panther management associated with agricultural land uses (Fakahatchee Strand EA 1985).

Habitat Description

Early radio telemetry investigations indicated that panther (n=6) use of mixed swamp forests and hammock forests was greater than expected in relation to the availability of these vegetative communities within the panthers' home range area (Belden *et al*. 1988). As investigations expanded onto private lands between 1985 and 1990, it was determined that panthers (n=26) preferred native, upland forests, especially hardwood hammocks and pine flatwoods, over wetlands and disturbed habitats (Maehr *et al.* 1991). For pine flatwoods, which comprised about 12 percent of the habitat available to male Florida panthers (n=5) and female Florida panthers (n=5), mean habitat use between 1986 and 1994 averaged 33 and 32 percent, respectively. For hardwood hammocks, which

comprised about 13 percent of the habitat available, mean habitat use averaged 38 and 31 percent, respectively (Maehr 1996). Hardwood hammocks provide important habitat for white-tailed deer (*Odocoileus virginianus*), an important panther prey species (Harlow 1959, Belden *et al.* 1988, Maehr 1990*a*, 1992*a*, Maehr *et al.* 1991). Understory thickets of tall, almost impenetrable, saw palmetto (*Serenoa repens*) have been identified as the most important resting and denning cover for panthers (Maehr 1990*a*).
Agricultural and other disturbed habitats, freshwater marsh, thicket swamp, and mixed swamp are not preferred and are either used in proportion to their availability or are avoided (Maehr 1990*a*). Panthers have not been found in pastures during daytime radio telemetry flights but may travel through them at night (Maehr *et al.* 1991, Maehr 1992*a*). However, more recent information based on global positioning system (GPS) telemetry data collected during both diurnal and nocturnal periods indicate that forests are the habitats selected by panthers (Land *et al.* 2008).

Male and female panther home range size is inversely related to habitat quality; the greater the extent of agricultural land and wetland habitats, the larger the home range; and the greater the extent of mixed hardwood forests and dry pine forests, the smaller the home range. High-quality habitat produces abundant prey and promotes female panther reproductive success (Maehr 1992*b*, Maehr *et al.* 1989).

Food habit studies of Florida panthers indicate that feral hog (*Sus scrofa*) was the most commonly taken prey followed by white-tailed deer, raccoon, and nine-banded armadillo (*Dasypus novemcinctus*). Deer and hogs accounted for 85.7 percent of consumed biomass north of I-75 and 66.1 percent south of I-75 (Maehr 1990*b*). No seasonal variation in diet was detected; however, panthers inhabiting an area of better soils north of I-75 consumed more large prey. In addition, deer abundance was up to eight-fold greater north of I-75 (McCown 1991). The estimated number of deer consumed per panther did not differ between the areas north and south of I-75. Hog numbers were lower south of I-75. Fewer large prey may in part explain the poorer physical condition, larger home ranges, and lower reproductive output of panthers residing south of I-75. Hogs dominated the diet of panthers in the north in terms of both estimated biomass and numbers. In the south, deer accounted for the greatest estimated biomass consumed, whereas raccoons were the highest estimated number of consumed prey. Domestic livestock were found infrequently in scats or kills, although cattle were readily available (Maehr 1990*a*).

As of 2012, the verifiable Florida panther population not including kittens was estimated at 111 individuals in Southern Florida (McBride *et al*. 2012). Using a combination of density estimates and available habitat in South Florida, the FWCC has quantified the current adult and subadult panther population size to be in the range of 120 to 230 individuals within the primary panther breeding range south of the Caloosahatchee River. In terms of population size and occupied range, an increase in the Florida panther population has been documented since genetic restoration efforts that began in 1995. For years thereafter, the panther breeding population continued to be primarily isolated to South Florida (Hostetler *et al.* 2013) despite documented dispersals of male panthers north of the Caloosahatchee River (Land *et al.* 2000). In late 2016, FWCC published a press release announcing "strong evidence" that a female Florida panther had crossed the Caloosahatchee River, including photographs taken by trail cameras and female panther tracks. Press Release, FWCC, FWC Collects Evidence of a Female Panther North of Caloosahatchee River (November 14, 2016),

available at **http://myfwc.com/news/news-releases/2016/november/14/female-panther/**. On March 27, 2017, FWCC issued a news bulletin announcing that FWCC had verified evidence of at least two panther kittens north of the Caloosahatchee River. According to FWCC, these kittens are presumed to be the offspring of the female panther documented north of the river in late 2016. News Bulletin, FWCC, FWC Documents Panther Kittens North of Caloosahatchee River (March 27, 2017), *available at* **https://content.govdelivery.com/accounts/FLFFWCC/bulletins/19043d6**. This recent discovery effectively confirms that panthers are breeding north of the Caloosahatchee River.

From 1999 to 2000, the number of births in the radio-collared population has exceeded the number of deaths by a factor of three, and the primary cause of Florida panther mortality from 1979 to 2003 was intraspecific aggression (Land *et al*. 2003). There has been a misconception that vehicular trauma causes most Florida panther mortalities, but this is the result of sampling bias because uncollared panther mortalities are typically only found if they are caused by humans (Land *et al*. 2000).

Project Information

The Project includes 4,585.96± acres of disturbed palmetto prairie, pine flatwoods, live oak, cabbage palm, mixed hardwood/conifer, mixed wetland hardwoods, willow, cypress, pine/cypress, hydric pine, hydric cabbage palm, wetland mixed hardwood/conifer, wetland shrub, freshwater marsh, and wet prairie with varying degrees of exotic infestation. Direct observations of Florida panther and their sign were documented during listed species surveys and other field work conducted by PAI on the Project site. Florida panther signs (i.e., tracks, scat, etc.) have been documented in native upland and wetland habitats on the Project site. Florida panther tracks and scat have also been documented on the perimeter berms of the agriculture fields adjacent to native forested habitat.

A map depicting the location of the Project site within the Panther Focus Area, with a 25 mile radius, is included as Exhibit 33. The Project is located within the "Primary Zone" and "Secondary Zone" for panther habitat as identified by Kautz *et al.* 2006. A map depicting the location of the Project in relation to Primary and Secondary panther zones is provided as Exhibit 34. Critical habitat has not been designated for the Florida panther.

A map showing the location of the Project in relation to Florida panther telemetry points for Southwest Florida and within 25 miles of the Project site is provided as Exhibit 35.

A map showing telemetry points within five miles of the Project site is provided as Exhibit 36. A total of 475 telemetry points from seven Florida panthers have been recorded within five miles of the Project site from 2013 to 2016. Roughly 76 percent of the telemetry locations within a five mile radius around the Project are from two radio-collared panthers (Florida Panther Nos. 215 and 222) (Exhibit 36). Florida Panther Nos. 215 and 222 are both adult females with use areas that include the FPNWR.

A census survey for white-tailed deer and feral hog was conducted in 2008 for the Big Cypress Stewardship District to determine the on-site prey availability for the Florida panther within agricultural fields. A report detailing the results of the survey is included as Exhibit 37.

Cumulative Effects

This section includes an analysis of the potential cumulative effects to the Florida panther from known projects located within the action area. The USFWS defines cumulative effects as those effects of future state or private activities, not including federal activities that are reasonably certain to occur within the action area of the federal action subject to consultation.

The USFWS has defined the action area to include the portion of the current panther range in which panthers are likely to be directly or indirectly affected by the proposed action. The USFWS's action area includes all lands within a 25 mile radius of the Project site.

Exhibit 38 is a map depicting permit applications received by the SFWMD within a 25 mile radius of the Project and within the Panther Focus Area from July 2013 through July 2016. These permit applications include, but are not limited to, land development projects, road projects, restoration projects; as well as permit modifications, extensions, exemptions, and transfers. Exhibit 38A is a table summarizing project information for the SFWMD applications identified on Exhibit 38. This information was obtained from the SFWMD website.

The SFWMD permit application data was further evaluated to determine projects that received approved ERPs from the SFWMD within a 25 mile radius of the Project site and within the Panther Focus Area from July 2013 through July 2016. To determine this, projects without a permit number were removed from the list of applications. Permit transfers, letter modifications, letter modifications with transfers, permit extensions, permit exemptions, and general permits (new and modifications) were also removed. In addition, projects not listed as "complete" or "hearing" (i.e., withdrawn, no response, response denied, under review, void, etc.) were eliminated.

The SFWMD ePermitting website was then researched to determine the ERP approval date and acreage of wetland impacts, wetland preserve, and upland preserve for the remaining projects. SFWMD ERPs within a 25 mile radius of the Project and within the Panther Focus Area issued July 2013 through July 2016 are summarized in table format as Exhibit 39. In total, the SFWMD issued ERP permits for 78 projects from July 2013 through July 2016 (4 in 2013, 24 in 2014, 36 in 2015, and 14 in 2016). This affected 16,772.46± acres overall, impacted 438.13± acres of wetlands, and preserved 1,066.60± acres of wetlands and 663.99± acres of uplands. Over this three-year period, the SFWMD issued an average of 26 ERPs per year within a 25 mile radius of the Project and within the Panther Focus Area.

Exhibit 40 is a map depicting SWFRPC DRI Order applications within a 25 mile radius of the Project and within the Panther Focus Area received from 2013 through 2016, or currently pending from an earlier submittal. DRIs were acquired from the Florida Geographic Data Library website (**http://www.fgdl.org/metadataexplorer/explorer.jsp**) in July 2016. Exhibit 40A is a table

summarizing active or approved DRI applications from 2013 through 2016 within a 25 mile radius of the Project and within the Panther Focus Area.

Exhibit 41 is a map depicting PUDs within a 25 mile radius of the Project and within the Panther Focus Area from 2013 through 2016. The PUDs that are shown on Exhibit 41 were obtained from the Collier County and Lee County websites. County PUDs were selected based on the PUD approval date. Lee County projects that were listed as pending were also included. Lee County projects that were denied, withdrawn, expired, or vacated were excluded. Enclosed as Exhibits 41A and 41B are tables with project name, project acreage, wetland acreage, percent of wetlands on project, approval date, approval number, and application status for Collier and Lee County PUDs from 2013 through 2016 within a 25 mile radius of the Project and within the Panther Focus Area.

A map with a cumulative display of SFWMD applications, DRIs, and PUDs within a 25 mile radius of the Project and within the Panther Focus Area from 2013 through 2016 overlaid on a NWI map is provided as Exhibit 42. A comprehensive list of SFWMD applications, DRIs, and PUDs within a 25 mile radius of the Project and within the Panther Focus Area having less than five percent wetlands on-site from 2013 through 2016 is included as Exhibit 43. The table provides a list of identified projects, year submitted, project acreage, wetland acreage, and percent of wetlands on-site.

A map depicting projects within the 25 mile radius of the Project and within the Panther Focus Area that were issued Corps Approved Jurisdictional Verifications with only non-jurisdictional determinations from 2009 through 2012 is provided as Exhibit 44. A table listing the project and associated non-jurisdictional wetland acreages is included as Exhibit 44A. This information was obtained on January 28, 2012 and on March 4, 2012 from FOIA Request No. 12-189.

A map depicting lands within a 25 mile radius of the Project and within the Panther Focus Area that are currently protected for conservation purposes is provided as Exhibit 45. These lands include Florida Managed Areas identified by the FNAI; FDEP and SFWMD conservation easements; Collier County and Lee County Future Land Uses designated as conservation/preservation; Conservation Collier land acquisition areas; Lee County 20/20 acquisition lands; and Collier County Flow-Way and Habitat Stewardship Areas. The conservation lands were obtained from a wide variety of sources which are described in the notes of Exhibit 45. Enclosed as Exhibit 45A is a table that provides the name of the conservation lands, the managing agency, the owner, the county in which it is located, and the total acres of the conservation lands shown on Exhibit 45. Exhibit 45B lists the SFWMD conservation easements shown on Exhibit 45.

A map depicting Collier County land use designations within a five mile radius of the Project is provided as Exhibit 46. As shown on this map, the Project is bordered on the west by lands designated for residential development within Golden Gate Estates. The remainder of the site is surrounded by lands designated for agriculture and rural uses. Therefore surrounding panther habitat has already been partially fragmented by these uses.

Enclosed as Exhibit 47 is a map showing roadways and pinpointing locations of known panther vehicular collisions within the 25-mile action area in relation to the location of the Project. Also included as Exhibit 47A is a reference table for these panther vehicular collisions with the panther

identification number, gender, age, location of collision, date of collision, fate of the panther following the collision, and distance of collision from the Project. This information was obtained from the FWCC via e-mail in July 2016 and is current through June 2016.

According to the FWCC data, there have been 159 documented panther-vehicle collisions within the 25-mile action area. Of the 159 documented collisions, 76 (48 percent) have occurred more than 10 miles away from the Project and 83 (52 percent) occurred less than 10 miles from the Project site. The panther-vehicle collision closest to the Project resulted in death to Uncollared Florida Panther (UCFP) No. 173 (female), which occurred in 2012 along Immokalee Road, 2.4 kilometers east of Oil Well Road. Since January 2008, 89 panther-vehicle collisions have occurred in the 25-mile action area (6 in 2008, 13 in 2009, 7 in 2010, 7 in 2011, 10 in 2012, 7 in 2013, 9 in 2014, 18 in 2015, and 12 in 2016).

To estimate the cumulative effects of future private actions on the Florida panther, future actions likely to occur within the Florida panther action area have been identified and analyzed. Between July 2013 and July 2016, a total of 78 ERP permits were issued in the action area. Of these projects, 17 could be expected to be subject to development without requiring a federal permit to impact wetlands. These 17 projects affect approximately 318.80 acres and impact 7.06± acres of wetlands. The average over the three year review period is 106.27± acres per year. This annual loss represents 0.17 percent of a male panther's average home range (62,542± acres) and 0.37 percent of a female panther's average home range (29,059± acres).

State and county land alteration permits in Southwest Florida, not part of those actions listed above, generally include single-family residential developments within northern Golden Gate Estates and Lehigh Acres. Vacant lands in northern Golden Gate Estates are estimated to be developed at a rate of 417 lots or 1,740± acres each year. Vacant lands within the area of Lehigh Acres are estimated to be developed at a rate of 1,764 lots, affecting 441± acres, a year.

The combined annual level of development (106.27 + 1,740 + 441= 2,287.27± acres) represented in this cumulative effects analysis is representative of future non-federal actions. This level of projected future development represents 7.9 percent of the female panther's average home range and 3.6 percent of a male panther's average home range. The affected land supports disturbed vegetative communities and row crops, or is in partially developed areas. Efforts to mitigate or offset these impacts will be accomplished through implementation of conservation measures as outlined in the USFWS Recovery Plan for the panther, including public acquisition of lands that benefit the panther, the establishment of a panther conservation banking program, and the installation of wildlife crossings and underpasses such as Florida Department of Transportation's (FDOT) installation of underpasses and fencing for the Alligator Alley section of I-75 (USFWS 2008).

Traffic Analysis

As previously described, Rural Lands West will be a master planned community under the Collier County RLSA program. As part of the County's review of the Project, a traffic analysis was prepared by David Plummer & Associates, Inc. (DPA) to assess traffic impacts on the local road network. The traffic analysis prepared for the County considered 2015 network traffic conditions and future traffic

projections. The 2015 network traffic conditions were based on the most recent count station data available from Collier County. The future year traffic projections were based on outputs from the FDOT 2040 District One Regional Planning Model, with specific model runs conducted for Rural Lands West. A straight-line interpolation of the socioeconomic data coincident with three future year projections (2025, 2032, and 2038) was conducted using the base 2010 and 2040 socioeconomic data provided by the FDOT model. The socioeconomic data include values representing two types of residential units, hotel rooms, school students, and employment for three categories of non-residential land use. Using development parameters previously accepted by the Collier County Metropolitan Planning Organization, interpolated socioeconomic data was converted to corresponding residential units, industrial/ commercial/service square footages, hotel rooms, and students for each projected future year scenario. This traffic analysis was used as the basis for assessing the projected change in traffic patterns on the road network associated with the Project.

Importantly, the Rural Lands West site is zoned and planned at the local government level for residential and commercial development, and impact of roadways. The requested Corps permit will allow discharges of dredged and fill material associated with Rural Lands West, but does not determine whether residential and commercial development will occur in the area generally, or how traffic will be controlled on external roadways. These are determinations made at the local government level. If the Rural Lands West project did not go forward, it is reasonable to expect that other development would take its place, and that such development may proceed incrementally and not be designed comprehensively to assure environmental protection. Furthermore, neither the Corps permit nor the Rural Lands West project controls or determines whether or the extent to which panther-vehicle collisions will occur, the establishment of external roadway speed limits or other traffic control measures, or the construction of external wildlife control measures (such as fencing or underpasses).

For the analysis, three future year scenarios were considered for assessing traffic impacts. The first considered projected traffic increases on the road network assuming no Project-generated traffic (Baseline Condition); the second considered projected traffic assuming construction of the Project as planned (With Project Condition); the third projected traffic assuming the Project site and corresponding SSA lands (SSA 14, 15, 16, and 17) are developed under the County's baseline standard of one dwelling unit per five acres (Without Project Condition).

The traffic for the Baseline and With Project Conditions was estimated utilizing the FDOT model and traffic analysis for the County described above. The FDOT model assumes a specific level of development in the Project area over time, based on factors such as growth patterns and local zoning. The existing and estimated future traffic on the road network in the general vicinity of Rural Lands West for the Baseline and With Project Conditions are summarized by DPA in a traffic assignment map provided as Exhibit 48. The traffic estimates are expressed as average annual daily traffic (AADT). The summary includes 2015 traffic data and projected traffic in 2025, 2032, and 2038 under the Baseline and With Project Conditions.

The traffic for the Without Project Condition was estimated using the Institute of Transportation Engineers (ITE) 9th Edition Trip Generation Handbook (2012). The traffic estimate projections prepared by DPA for the Without Project Condition are provided as Exhibit 49 and are expressed as

Estimated ITE Daily Trips. The estimate includes projected traffic in 2025, 2032, and 2038 for the Without Project Condition. While the Without Project Condition analysis is not directly comparable to the other two scenarios, it does provide a general description of the projected traffic increase and identifies road segments affected under the Without Projection Condition.

Baseline Condition

As noted above, the traffic summary projects the AADT on the road network at four points in time (2015, 2025, 2032, and 2038) without adjusting for estimated Project-generated traffic (Baseline Condition). This reflects the projected baseline condition of the road network traffic which would occur if the Project was not constructed, but a certain presumed amount of development proceeded as projected by the FDOT model.

The traffic projections generally demonstrate an increase in AADTs on the road network for the years 2025, 2032, and 2038 when compared to 2015 traffic volumes. AADT increases occur on most of the road segments analyzed, with some exceptions. Many of these exceptions are found on roadway segments where the current (2015) count station data available from Collier County traffic counts were distant from the road segment being studied.

In general, 2025 network traffic volume is projected to increase approximately 67 percent over 2015 conditions; 2032 volume network traffic is projected to increase approximately 93 percent over 2015 conditions; and 2038 network traffic volume is projected to increase approximately 114 over 2015 conditions.

With Project Condition

The Project is generally projected to result in modest increases in traffic volume over projected Baseline Conditions in 2025, 2032, and 2038.

In 2025, the Project is projected to increase network traffic volume by approximately 14 percent over projected 2025 Baseline Conditions. In 2032, the Project is projected to increase traffic volume by approximately 16 percent over projected 2032 Baseline Conditions. Likewise, in 2038, the Project is projected to increase traffic volume by approximately 16 percent over projected 2038 Baseline Conditions.

The largest percentage increases in AADT volumes above projected Baseline Conditions generally occur on segments of Oil Well Road, Randall Boulevard, and Everglades Boulevard in the vicinity of the Project. Much of the Project-related traffic is anticipated to interact with nearby Golden Gate Estates, which is occupied by existing single-family residences, via Oil Well Road, Randall Boulevard, Everglades Boulevard, and Desoto Boulevard.

Traffic patterns and volumes on some road segments are anticipated to change as existing traffic patterns interact with the Project. The existing communities of Golden Gate Estates and Ave Maria are projected to divert traffic to Rural Lands West as opportunities for shopping, employment, and

recreation activities increase. As a result, there are several road segments where the future traffic volume with the Project are projected to be lower than under projected future Baseline Conditions.

The Project's trip assignment to the adjacent road network in 2038 is shown in Exhibit 48. This exhibit shows that the largest percentage (approximately 47 percent) of traffic from the Project will travel to the west into more urban areas including Golden Gate Estates.

Approximately 29 percent of traffic from the Project is projected to travel to the east along Oil Well Road, with approximately 21 percent traveling north into Ave Maria. The traffic traveling to the east on Oil Well Road (before travelling north into Ave Maria) will cross Camp Keais Strand, which serves as a wildlife travel corridor. However, Oil Well Road has two existing panther crossings and wildlife fencing along both sides of the road where it crosses the Camp Keais Strand. Therefore, no increase in panther-vehicle collisions from Project-related traffic is expected in these locations.

Only 2.5 percent of the Project-related traffic is projected to travel further east on Oil Well Road (beyond Camp Keais Road), and 5.1 percent is projected to travel north on Camp Keais Road and Immokalee Road into more rural areas.

Without Project Condition

As noted above, the Without Project Condition considers projected traffic increases assuming the Project site and corresponding SSA lands (SSA 14, 15, 16 and 17) are developed under the County's baseline standard of one dwelling unit per five acres. Under this scenario, for example, the development rights for SSA 16 would not be removed and the SSA 16 lands (once developed) would generate traffic on the road network. It is projected that 5,250 trips per day would be added to Immokalee Road between State Road 29 and County Line Road, with 4,061 of these trips per day heading to the west on Immokalee Road and 1,189 of these trips per day heading to the east (Exhibit 49). While the Without Project Condition analysis is not directly comparable to the other two scenarios, it does demonstrate the projected level of traffic increase and location of road segments affected under the Without Project Condition. Critically, if development rights are not removed from SSA 16 as mitigation for the Rural Lands West project, traffic generated from SSA 16 lands would be added to the road network in more rural areas of the County, increasing the potential for panther-vehicle collisions.

Summary

Based on the DPA traffic analysis:

- Traffic in the vicinity of the Rural Lands West is projected to increase by 114 percent over the next 20 years without the Project based on regional planning and growth patterns.
- Factoring construction of the Project into traffic projections results in only a 16 percent increase above the projected Baseline Condition over the next 20 years.

- Traffic patterns associated with the Project result in the majority of increased traffic volumes (approximately 70 percent) occurring to the west of the Project site, into developed areas and away from more sensitive species habitat.
- Projected increases in traffic volume on roadways to the east of the Project site will cross Camp Keais Strand on Oil Well Road where existing panther crossings and wildlife fencing is already in place.
- The projections show that if the lands associated with Rural Lands West were instead developed under the County's baseline standards of one dwelling unit per five acres, traffic volume would increase to a greater degree in more rural areas that are associated with sensitive species habitat.

To the extent that modest traffic increases occur in connection with the Project within more sensitive areas, the potential for increased traffic impacts to panthers and other listed species will be offset by current and projected future wildlife management actions including:

- Existing fencing and wildlife underpasses (e.g., Oil Well Road has two existing panther crossings and wildlife fencing on both sides of the road where it passes through Camp Keais Strand).
- Project mitigation, which will provide significant wildlife benefits detailed in this Biological Assessment, including (i) additional fencing along Oil Well Grade Road and (ii) the creation of a dry ledge within the western wildlife crossing under Oil Well Road, which will further increase use of the crossing by panthers and direct wildlife away from traffic.

Other projects in the area are expected to produce additional wildlife management features that will reduce the risk of traffic impacts. For example, members of the Florida Panther Protection Program have committed to contribute to the Paul J. Marinelli Florida Panther Protection Fund for projects covered under the Eastern Collier Multiple Species Habitat Conservation Plan, which will be available to fund conservation actions such as wildlife fencing and underpasses.

EFFECTS OF THE ACTION

Eastern Indigo Snake

The Project includes 5,327.16± acres of cover types that are included in a list of various types of vegetative cover that could be used by Eastern indigo snake for essential behavior patterns if situated in an appropriate landscape. No Eastern indigo snakes have been documented on the Project site. The applicant will implement an Eastern indigo snake management plan for the Project which follows the USFWS guidelines outlined in the *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2013). The Eastern indigo snake management plan for the Project is provided in Exhibit 4. Using the USFWS's North and South Florida Programmatic Effect Determination Key for the Eastern Indigo Snake (amended on August 13, 2013) results in the following sequential determination: A > B > C > "not likely to adversely affect" (NLAA).

Wood Stork

Wood storks were documented on the Project site during wildlife surveys and other field work conducted by PAI on the Project site. The proposed wetland impacts associated with the Project total 305.01± acres. As a result of the proposed federal action, approximately 3,996.92± acres of cover types that could be used by wood storks will be enhanced and preserved.

The proposed habitat compensation is within appropriate CFAs; will replace foraging value matching the hydroperiods of the wetlands affected; and will provide foraging value similar to, or higher than, that of impacted wetlands. A wood stork foraging habitat assessment for the Project is included as Exhibit 50 and a USFWS wood stork compensation calculator is provided as Exhibit 51.

Using the wood stork key provided in the USFWS's May 18, 2010 South Florida Programmatic Concurrence Letter (USFWS 2010) results in the following sequential determination: A > B > C > E "not likely to adversely affect" (NLAA).

Crested Caracara

Caracaras have been observed on-site during Project field work, and a crested caracara nest was identified on-site during the 2009 nesting season crested caracara survey. However, based on the absence of caracaras in the nest area and poor condition of the nest on the last days of the survey, the caracara nest was determined to be abandoned. During the 2016 nesting season crested caracara survey, a nest was documented along Oil Well Grade Road, approximately 3,920 feet north of the Project boundary.

For purposes of assessing levels of adverse effects, if any, to nesting crested caracaras, the USFWS recognizes two zones. The primary zone is a distance of 300 meters (984 feet) from the nest tree and the secondary zone is a distance of 1,500 meters (4,920 feet) from the nest (USFWS 2004*a*). The approximate location of the identified crested caracara nest on the Project site and the USFWS protection zones are depicted on an aerial included as Exhibit 52. The nest area identified during the 2016 survey will be monitored each nesting season and information on nest activity, if any, will be documented and provided to the USFWS.

The USFWS Draft Species Conservation Guidelines, South Florida, Audubon's Crested Caracara (USFWS 2004a) was referenced for the effect determination for the Project. Use of the guidelines results in the determination that the proposed federal action was "not likely to adversely affect" the crested caracara.

Everglade Snail Kite

No Everglade snail kites or their sign have been documented on the Project site. Critical habitat has been designated for the Everglade snail kite; however, the Project is not located within or adjacent to the critical habitat.

In addition, the on-site wetland mitigation and the creation of the Project's lake buffer and stormwater management ponds, with associated littoral zones and native plantings, will increase the potential foraging habitat for the Everglade snail kite within the landscape.

The proposed federal action will have no effect on the Everglade snail kite.

Red-Cockaded Woodpecker

No RCWs or RCW cavity trees have been documented on the Project. The Project includes 641.25± acres of cover types that are included in a list of various types of vegetative cover that could be used by RCWs for essential behavior patterns if situated in an appropriate landscape. No cavities in live trees were documented on the Project site. There were no RCWs documented on the Project site during the 2007 or 2014 RCW nesting or non-nesting season survey periods. There were also no RCWs documented during any other fieldwork conducted by PAI on-site. According to the FWCC database of documented occurrences of listed species, there are no documented RCW colonies on the Project site. The nearest documented RCW colony is located approximately seven miles southwest of the Project site. The proposed federal action will have no effect on the RCW.

Florida Panther

Florida panthers and their sign have been documented during wildlife surveys on the Project site since PAI began survey work on the Big Cypress Stewardship District in 2008. Eight Florida panthers have been identified by radio-collar telemetry points within a five mile radius around the Project boundary within the past four years. Of these eight panthers, one has been documented on the Project site three times. Florida Panther No. 215 was documented within the project boundary on the southeast portion of the site. The locations where Florida Panther No. 215 was documented will be preserved under the proposed site plan for the Project.

The preservation and restoration activities associated with SSAs 14, 15, 16, and 17 will provide ecological benefits to wildlife including the Florida panther. These areas have previously been identified as important habitat for large mammals including the Florida panther, and represent a significant step towards restoring Camp Keais Strand as a large mammal wildlife corridor connecting CREW lands and Corkscrew Swamp to the north, to the FPNWR to the south.

In accordance with the Florida panther key provided in the USFWS's February 19, 2007 guidance letter to the Corps, the proposed federal action may affect the Florida panther.

Florida Bonneted Bat

The Project site includes 10,264.63± acres of cover types that could be used by the bonneted bat for essential behavior patterns if situated in an appropriate landscape, and the Project is located within the USFWS's Consultation Area and Focal Area for the Florida bonneted bat (Exhibit 29). Florida bonneted bat calls were recorded during an acoustic survey conducted on the Project site. The December 2013 Draft Florida Bonneted Bat Effect Determination Key was used to conduct a

sequential effect determination. Use of the key resulted in the following determination for the bonneted bat: 1 > "may affect."

INCIDENTAL TAKE

Section 9 of the ESA prohibits the "take" of endangered species within the United States or its territorial sea, except in accordance with other parts of the statute. 16 U.S.C. Section 1538(a)(1)(B). The take prohibition may also be extended to threatened species by rule. The ESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. Section 1532(19). "Harass" is defined as an activity "which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns," such as "breeding, feeding, or sheltering." 50 C.F.R. Section 17.3. Based upon the best scientific and commercial data available, incidental take of the listed species described herein that may result from the proposed federal action is limited to the form of harassment. As noted herein, the Project is located within the area of the Eastern Collier Multiple Species Habitat Conservation Plan. CEMI, along with other landowners in Eastern Collier County, has applied to the USFWS for an incidental take permit (ITP) pursuant to ESA Section 10. The ITP would cover incidental take of Eastern indigo snake, wood stork, crested caracara, Everglade snail kite, RCW, Florida panther, and Florida bonneted bat, among other species, in the form of harassment. In the event that this action is completed before the ITP has been issued, CEMI requests that the USFWS include a proportional level of coverage for the incidental take expected as a result of the Project in the incidental take statement for this action.

VOLUNTARY CONSERVATION MEASURES

Eastern Indigo Snake

The applicant proposes to implement an Eastern indigo snake management plan during Project construction. The plan will outline protection guidelines to be implemented for the Eastern indigo snake during clearing operations (within suitable indigo snake habitats) on the Project. The plan provides educational material and guidelines to construction personnel in case they encounter an Eastern indigo snake. The plan will follow guidelines established by the USFWS for the protection of the Eastern indigo snake. A 24 x 36 inch informational poster providing information on identification, habitats, protection of the Eastern indigo snake and identifying actions to take if an Eastern indigo snake is sighted will be placed in a conspicuous location on-site. The Eastern indigo snake management plan is included in Exhibit 4.

Wood Stork

The applicant will implement a wetland compensatory mitigation plan for the Project in accordance with a Corps permit authorizing the discharge to waters. Exotic vegetation will be hand removed from 3,474.54± acres of wetlands. Supplemental planting will be conducted in 740.93± acres of the 3,474.54± acres of hand removal areas where exotic vegetation currently exceeds 50 percent

coverage. Exotic vegetation will be mechanically removed from 431.31± acres of the on-site wetlands with greater than 75 percent cover by exotic species. After exotic removal in the 431.31± acres of on-site wetlands, the areas will be planted with native wetland vegetation. The mitigation plan also includes the restoration of 25.59± acres of wetlands from existing elevated dirt farm roads and agriculture fields within the preserve area. These areas will be graded to wetland elevations and planted within native wetland vegetation, thereby providing 25.59± acres of new, valuable foraging habitat for wading birds.

A conservation easement or other equivalent deed restriction in favor of the SFWMD with third party enforcement rights to the Corps and the USFWS will be recorded to protect the mitigation areas in perpetuity.

In addition to the compensatory wetland mitigation, 25.46± acres of wetlands will be preserved and enhanced on-site and 20.12± acres of waters will be preserved on-site. There will also be approximately 880 acres of wetland restoration within existing farm fields on-site under the Collier County RLSA Program as part of SSA 15.

To assess the existing wood stork foraging habitat on-site and the proposed habitat compensation plan, a wood stork foraging habitat assessment was conducted. The assessment follows the methodology as established by the USFWS, which is described in detail in the USFWS 2007 South Florida Programmatic Concurrence Letter (USFWS 2007) for the wood stork. The analysis estimates the potential loss of forage biomass available to wood storks resulting from unavoidable wetland impacts due to the proposed Project. The analysis also estimates the potential increase of forage biomass available to wood storks that will occur as a result of the wetland mitigation activities on the Project.

Based on the wood stork foraging habitat assessment conducted for the Project, included as Exhibit 51, unavoidable wetland impacts from on-site construction activities will result in the loss of 237.6 kilograms of forage biomass potentially vulnerable to predation by wood storks. The wetland mitigation activities on the Project will result in an increase of 2,048.2 kilograms of forage biomass. Therefore, the Project will provide a net increase of 1,810.6 kilograms of forage biomass resulting from the mitigation activities. As such, the proposed mitigation activities will more than fully offset the loss in forage biomass resulting from the proposed development. In addition, the mitigation work will be phased to correspond with phases of development to minimize temporal losses in forage biomass.

Crested Caracara

Project construction will occur in phases and it is anticipated that Project related construction within the secondary zone of the single active nest located off the Poject site will not occur until future phases. The nest will be monitored each nesting season and information on nest activity, if any, will be documented and provided to the USFWS.

Prior to commencement of clearing activities within 1,500 meters of the identified nest, a survey will be conducted during the crested caracara nesting season (January–April) to determine if the nest is

active or if other crested caracara nests are present. The survey will be conducted in potential nesting and foraging habitat within 1,500 meters of the identified caracara nest, including land adjacent to the Project that is under the applicant's ownership. The crested caracara survey will be conducted according to the guidelines described in the USFWS Draft Species Conservation Guidelines for South Florida for the Audubon's Crested Caracara (USFWS 2004*a*). The locations of crested caracara nests and the movements and activities of caracaras will be documented, if observed. If the identified nest is determined to be active or if other caracara nests are identified in the 1,500 meter radius, the USFWS and the FWCC will be contacted to determine the appropriate steps to take to proceed.

If construction activities occur within a protection zone of an identified active crested caracara nest, the applicant will implement conservation measures designed to restore improved pasture. The pasture creation and/or restoration will occur on existing agricultural lands located in SSAs 14, 15, or 16 which may include fallow fields, existing row crop fields, or unimproved pastures currently unsuitable for caracara due to the existing vegetation composition or structure (i.e., dense shrub cover, high ground cover), and will be designed in consultation with the USFWS. If cabbage palms are not already present in sufficient number or location to serve as nest trees, they may be planted as necessary as part of the restoration activities. Cattle ponds, ditches, and other enhancements to concentrate fish and amphibians for caracara foraging may be added as warranted.

Florida Panther

The Project includes regional conservation measures that will be implemented to preserve, restore, and connect potential panther and bear habitat. These conservation measures include the preservation and restoration of lands within the Camp Keais Strand (SSA 14 and SSA 15) and other areas of ecological significance (SSA 16 and SSA 17) through the Collier County RLSA program. This includes establishing two wildlife corridors that will provide connectivity between Shaggy Cypress Swamp and SSA 15. Additional fencing will be constructed along Oil Well Grade Road just south of Oil Well Road. This fencing will tie into the existing fencing along Oil Well Road and direct panthers toward the existing underpasses at Oil Well Road. A dry ledge will be constructed within the western wildlife crossing under Oil Well Road, which will improve utilization of this crossing in wet season conditions.

The applicant has also joined a collaborative effort with conservation organizations and land owners in eastern Collier County to create the Florida Panther Protection Program. This program preserves a contiguous area of land for Florida panthers and other wildlife and establishes a conservation fund, the Paul J. Marinelli Florida Panther Protection Fund, to support acquisition and restoration of panther habitat and installation of panther crossings and fencing. Rural Lands West is anticipated to generate several million dollars for the Panther Protection Fund.

DETERMINATION OF EFFECT

Based on this Biological Assessment, the proposed federal action will have no effect on the Everglade snail kite and red-cockaded woodpecker. The proposed federal action may affect, but is

not likely to adversely affect the Eastern indigo snake, wood stork, and crested caracara. The proposed federal action may affect the Florida panther and the Florida bonneted bat. No critical habitat has been designated for Eastern indigo snake, wood stork, crested caracara, red-cockaded woodpecker, Florida panther, or Florida bonneted bat. Critical habitat has been designated for the Everglade snail kite; however, the Project is not located adjacent to or within the critical habitat.

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EXHIBIT 1

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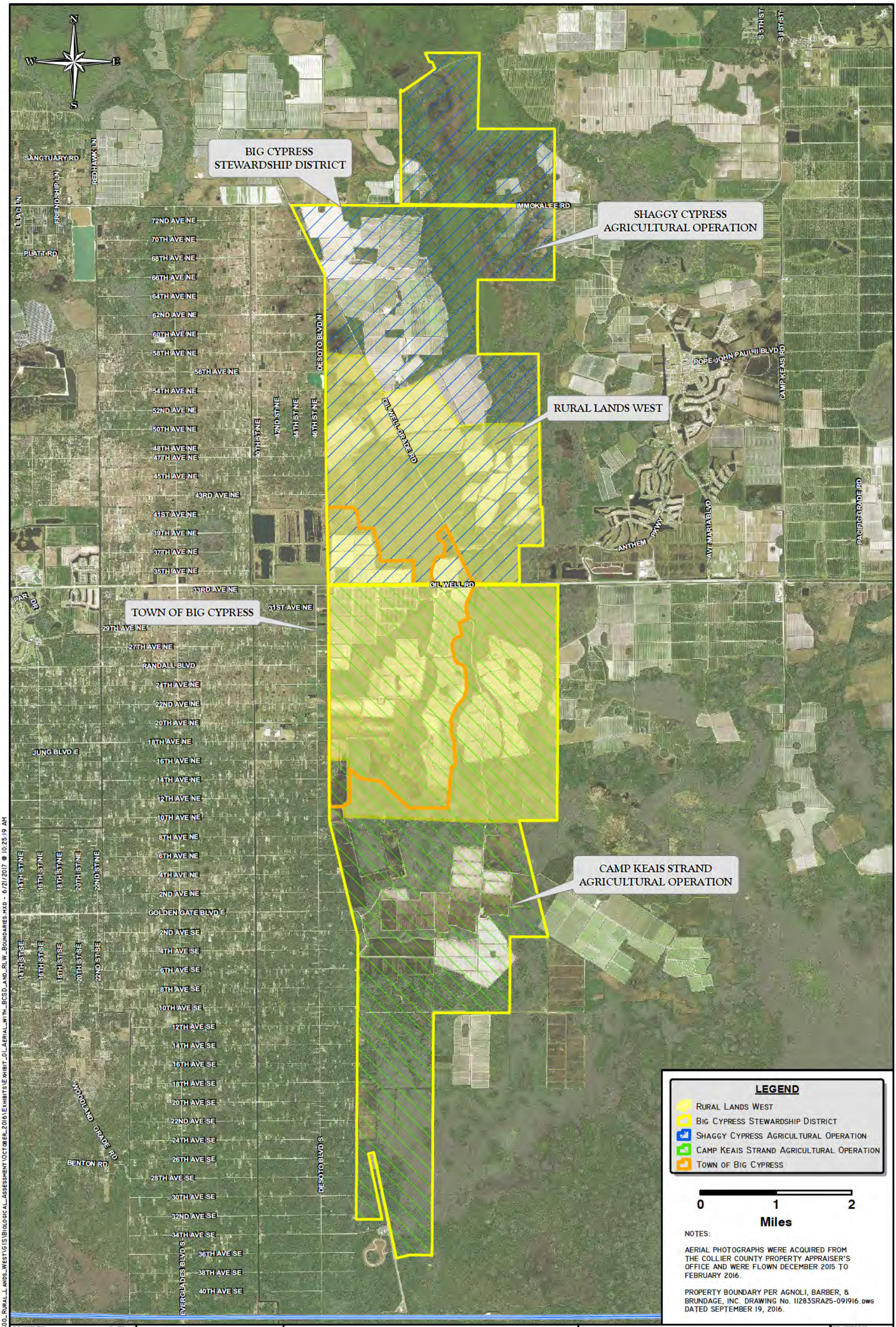

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W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
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PASSARELLA & ASSOCIATES INC
Consulting Ecologists

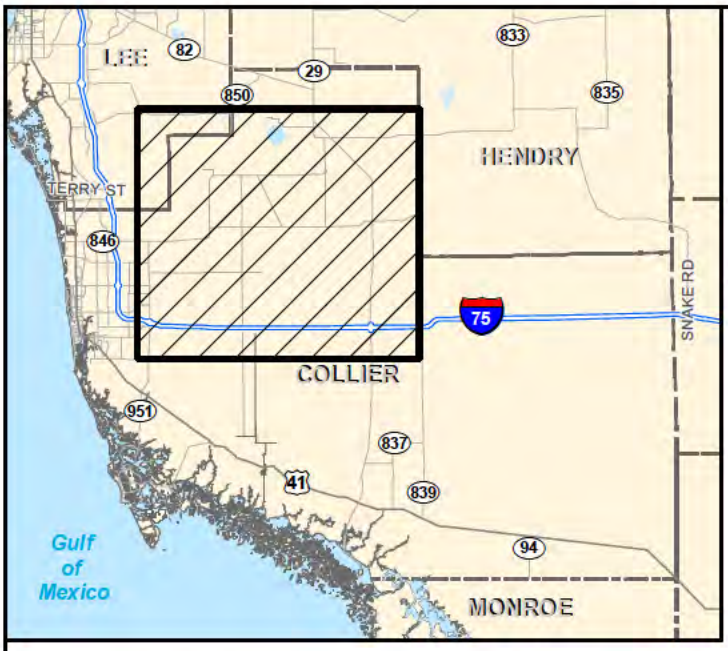
RURAL LANDS WEST
AERIAL WITH BOUNDARIES

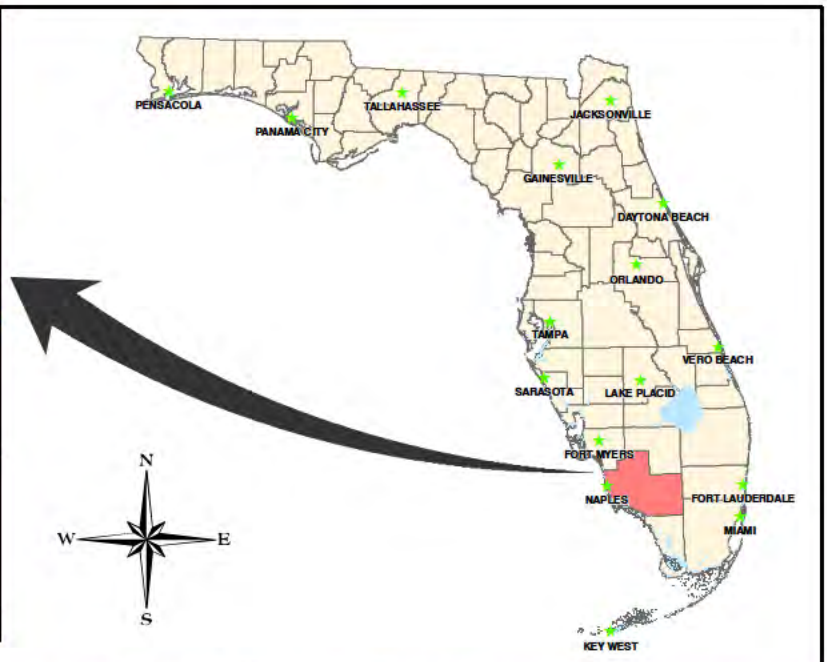
DRAWING No. 05CEM1481

SHEET No. EXHIBIT 1

EXHIBIT 2

PROJECT LOCATION MAP





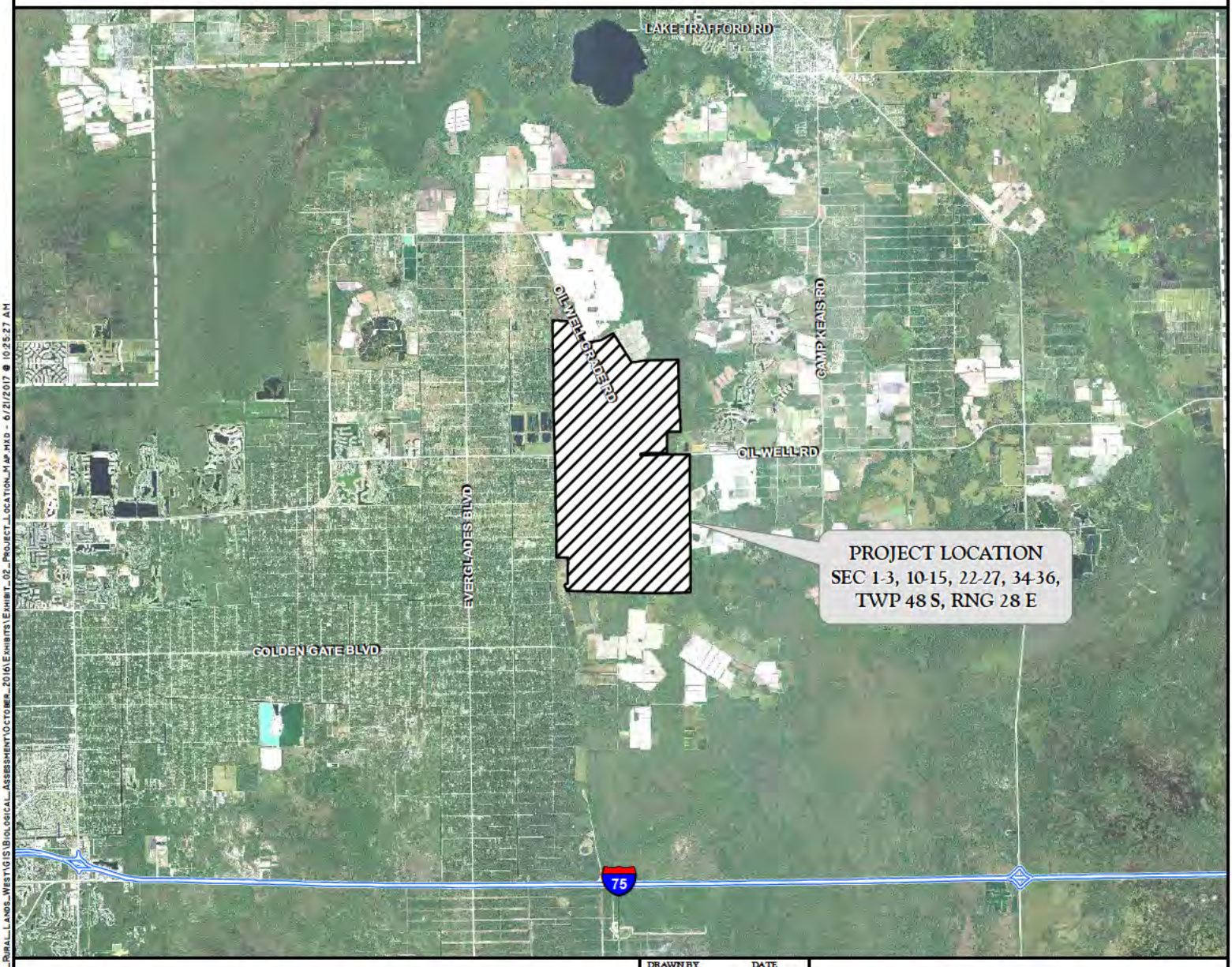


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EXHIBIT 2. PROJECT LOCATION MAP
RURAL LANDS WEST

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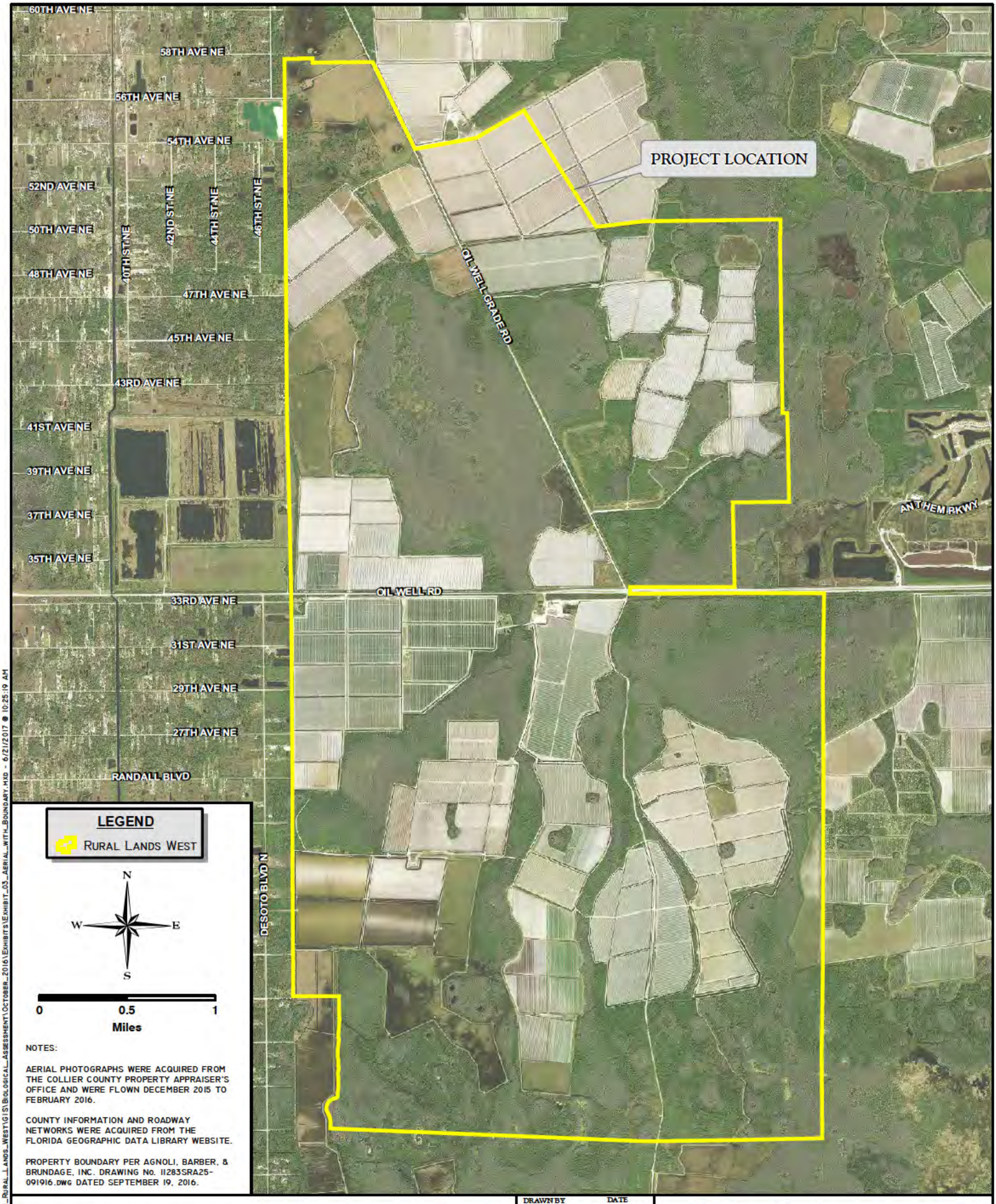

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COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

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EXHIBIT 4

LISTED SPECIES MANAGEMENT AND HUMAN-WILDLIFE COEXISTENCE PLAN

RURAL LANDS WEST
LISTED SPECIES MANAGEMENT
AND HUMAN-WILDLIFE COEXISTENCE PLAN

Revised November 2016

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Project No. 05CEM1481

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1.0 INTRODUCTION

This report documents the Listed Species Management and Human-Wildlife Coexistence Plan for Rural Lands West (Project). The management plan contained in this report pertains to the American alligator (*Alligator mississippiensis*), Eastern indigo snake (*Drymarchon courais couperi*), bald eagle (*Haliaeetus leucocephalus*), crested caracara (*Caracara cheriway*), listed wading birds, Big Cypress fox squirrel (*Sciurus niger avicennia*), Florida black bear (*Ursus americanus floridanus*), and Florida panther (*Puma concolor coryi*).

The Project totals 10,264.63± acres located in Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; Collier County (Appendix A). The Project site is located along the eastern boundary of Golden Gate Estates. Oil Well Road (County Road (CR) 858) bisects the Project site and Immokalee Road is located approximately two miles to the north. Camp Keais Strand occupies the eastern portion of the Project area. Shaggy Cypress Swamp is located to the north of Oil Well Road within the Project boundary.

2.0 LISTED SPECIES

Listed species surveys were previously conducted for the Big Cypress Stewardship District and the proposed Town of Big Cypress. The Big Cypress Stewardship District encompasses the Rural Lands West site and the previous Town of Big Cypress site is included within the Rural Lands West ERP Boundary. The previous listed species surveys for the Big Cypress Stewardship District and the Town of Big Cypress site were conducted by Passarella & Associates, Inc. (PAI) in March through July 2007, October 2007, and November 2007. In addition to the listed species surveys, species-specific surveys were conducted for the Town of Big Cypress site between 2007 and 2009.

Updated listed species surveys were conducted by PAI in May through July 2014 and June through August 2015 for Rural Lands West. In addition to the updated listed species survey, updated species-specific surveys were conducted for Rural Lands West between 2014 and 2016.

Table 1 summarizes the listed wildlife species documented during the listed species surveys or other field work conducted on the Rural Lands West site. Although no longer listed species, the Florida black bear remains subject to the Florida Fish and Wildlife Conservation Commission (FWCC) management plan and the bald eagle is subject to the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act, and are included in Table 1.

Table 1. Summary of Listed Wildlife Species

Common Name	Scientific Name	Listing Status	
		USFWS	FWCC
Reptiles			
American alligator	*Alligator mississippiensis*	FT(S/A)	FT(S/A)

Table 1. (Continued)

Common Name	Scientific Name	Listing Status	
		USFWS	FWCC
Birds			
Little blue heron	*Egretta caerulea*	--	SSC
Snowy egret	*Egretta thula*	--	SSC
Tri-colored heron	*Egretta tricolor*	--	SSC
Roseate spoonbill	*Ajaia ajaja*	--	SSC
Limpkin	*Aramus guarauna*	--	SSC
White ibis	*Eudocimus albus*	--	SSC
Wood stork	*Mycteria americana*	FT	ST
Florida sandhill crane	*Grus canadensis pratensis*	--	ST
Crested caracara	*Caracara cheriway*	FT	ST
Bald eagle	*Haliaeetus leucocephalus*	*	*
Mammals			
Big Cypress fox squirrel	*Sciurus niger avicennia*	--	ST
Florida panther	*Puma concolor coryi*	FE	FE
Florida black bear	*Ursus americanus floridanus*	--	**

FWCC – Florida Fish and Wildlife Conservation Commission
USFWS – U.S. Fish and Wildlife Service
FE – Federally Endangered
FT – Federally Threatened
FT (S/A) – Federally Threatened due to similarity of appearance
SSC – Species of Special Concern
ST – State Threatened
*Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act
** FWCC Management Plan

During the updated listed species surveys and other field work conducted on the Rural Lands West site, a crested caracara nest and a bald eagle nest were documented. The crested caracara nest is located in a cabbage palm (*Sabal palmetto*) along Oil Well Grade Road approximately 3,920 feet north of the Rural Lands West ERP Project Boundary. The crested caracara nest is located on lands within the Big Cypress Stewardship District. The bald eagle nest is located in a slash pine (*Pinus elliottii*) tree along Oil Well Grade Road approximately 1/3 mile north of Oil Well Road. The bald eagle nest is within the Rural Lands West ERP Project Boundary. Both the crested caracara nest and bald eagle nest are previously undocumented nests.

3.0 CONSERVATION AREAS

Rural Lands West has been planned under an innovative rural planning strategy created for 195,000± acres of land located in Eastern Collier County called the Collier County Rural Lands Stewardship Area (RLSA). Under the RLSA Overlay, one obtains Stewardship Credits from Stewardship Sending Areas (SSAs), which are areas designated for protection of natural resources and agriculture, and applies those credits to entitle development in Stewardship

Receiving Areas (SRAs), where new communities are permitted and natural resource values are low. To entitle the development of the SRA for Rural Lands West, three SSAs have been established: SSA 14, 15, and 16; and one SSA is being proposed: SSA 17.

Conservation lands within the Rural Lands West boundary include portions of SSA 15 and the majority of SSA 17. These conservation areas will be maintained and managed in accordance with the wetland mitigation/monitoring/maintenance plan and this management plan. This listed species management plan pertains only to the conservation areas within the Rural Lands West project boundary.

The conservation areas for the Project total 3,661.23± acres. The conservation areas will be comprised of 3,382.19± acres of wetlands, 13.85± acres of "other surface waters", and 257.38± acres of uplands following the completion of the mitigation activities. An aerial showing the locations of the conservations areas is provided as Appendix B. The wetland habitats within the conservation areas consist mostly of cypress, willow, and mixed wetland forest, with pine/cypress/cabbage palm, hydric pine, wetland shrub, wet prairie, and marsh communities. The upland habitats within the conservation areas consist of pine flatwoods, cabbage palm, live oak, and mixed hardwood-conifer habitats.

The conservation areas will be managed for listed species based on habitat type and current listed species utilization. Target listed species include the American alligator, Eastern indigo snake, bald eagle, crested caracara, state-listed wading birds, wood stork (*Mycteria americana*), Big Cypress fox squirrel, Florida black bear, and Florida panther. The conservation areas will be maintained per the South Florida Water Management District (SFWMD) wetland mitigation/monitoring/maintenance plan.

The conservation areas will be placed in a conservation easement or other equivalent deed restriction with inspection, enforcement, and approval rights granted to the SFWMD, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service (USFWS). The total preserve area to be placed under conservation easement is 3,661.23± acres.

As part of the applicant's public outreach program for the previously proposed Town of Big Cypress project, several meetings were held with the FWCC and the USFWS to discuss the management and conservation of listed species habitat. The applicant, with input from FWCC and USFWS staff, focused on implementing project design standards to minimize impacts to the native habitats existing on-site and to minimize the potential for large mammal (i.e., Florida panther and Florida black bear) interactions with humans. The applicant has carried forward these design standards to the Rural Lands West project.

To minimize impacts to the native habitats on-site, the Project is located primarily within existing active farm fields used for production of row crops. Direct impacts to the existing native habitats (located within the permitted surface water management reservoirs) were avoided as much as feasible. To minimize impacts to potential wildlife habitat, direct and indirect impacts to the natural areas located on the Project's eastern boundary were avoided. The Project site design includes two wildlife corridors that will provide a connection between Shaggy Cypress Swamp and Camp Keais Strand for large mammal movement. The

design also includes a lake buffer between the development areas and native habitats associated with Camp Keais Strand and Shaggy Cypress Swamp to deter large mammals from accessing the development areas and internal preserves.

Connectivity between the internal preserves will be maintained by the construction of wildlife crossings under proposed roads within Rural Lands West. The wildlife crossings for internal preserves will be appropriately sized to discourage use by large mammals while accommodating small mammals as well as amphibians and reptiles. Habitats within the internal conservation areas will be managed for use by small mammals, reptiles, and amphibians. Management objectives for the internal conservation areas will be implemented to limit prey and foraging opportunities for panthers and bears, thus discouraging these species from accessing developed areas within Rural Lands West.

4.0 WILDLIFE CROSSINGS

There is a total of five wildlife crossings (WC) proposed as part of Rural Lands West. Two wildlife crossings will be designed to accommodate large mammals. These wildlife crossings (WC-1 and WC-2) will be a box culvert eight feet high by ten feet wide which will connect CA-3 and CA-4A (Shaggy Cypress Swamp) to Camp Keais Strand to the east. Where road crossings are proposed through internal conservation areas, three wildlife crossings will be constructed to maintain connectivity of the internal preserves. The wildlife crossings for the internal preserves will be four feet high by six feet wide box culverts to discourage use by large mammals while accommodating the passage of small mammals as well as amphibians and reptiles between conservation areas.

An aerial depicting the proposed locations of the wildlife crossings is provided as Appendix B. Details of the wildlife crossings are included as Appendix C. Table 2 summarizes the locations, types, sizes, bottom elevations, and target species for each wildlife crossing.

Table 2. Wildlife Crossings Summary

Wildlife Crossing No.	Location/ Connection	Type and Size of Culvert	Elevation	Target Species
WC-1	Connects Shaggy Cypress Swamp (CA-4A) to Camp Keais Strand	8 x 10 foot box culvert	Bottom at natural grade	Large mammals
WC-2	Connects Shaggy Cypress Swamp (CA-3) to Camp Keais Strand	8 x 10 foot box culvert	Bottom at natural grade	Large mammals
WC-3	Connects CA-11 to CA-12	4 x 6 foot box culvert	Bottom of natural grade	Reptiles, amphibians, small mammals

Table 2. (Continued)

Wildlife Crossing No.	Location/ Connection	Type and Size of Culvert	Elevation	Target Species
WC-4	Connects CA-11 to CA-14	4 x 6 foot box culvert	Bottom at natural grade	Reptiles, amphibians, small mammals
WC-5	Connects CA-25 to CA-26	4 x 6 foot box culvert	Bottom at natural grade	Reptiles, amphibians, small mammals

The bottom of the box culverts will be buried in and covered with natural soils that mimic the surrounding substrate. Riprap will be utilized at the entrances to the culverts to minimize erosion and provide cover for small reptiles and amphibians. Natural shrub and ground cover vegetation will be retained up to the wildlife crossing. Vegetation removed during construction phases will be replanted to provide cover for target wildlife species. Table 3 lists the native shrub and ground cover plant species which will be used to re-vegetate areas at the entrances to the wildlife crossings.

Table 3. Supplemental Planting List for Wildlife Crossings

Common Name	Scientific Name	Minimum Height	Minimum Container Size	Planting Density (On Center)
Tree Plantings				
Cypress	*Taxodium distichum*	3 ft.	1 gal.	10 ft.
Slash pine	*Pinus elliottii*	3 ft.	1 gal.	10 ft.
Shrub Plantings				
Wax myrtle	*Myrica cerifera*	3 ft.	1 gal.	10 ft.
Myrsine	*Rapanea punctata*	3 ft.	1 gal.	10 ft.
Gallberry	*Ilex glabra*	3 ft.	1 gal.	10 ft.
Buttonbush	*Cephalanthus occidentalis*	3 ft.	1 gal.	10 ft.
Ground Cover Plantings				
Cordgrass	*Spartina bakeri*	12 in.	4 in.	4 ft.
Gulfdune paspalum	*Paspalum monostachyum*	12 in.	4 in.	4 ft.
Tickseed	*Coreopsis* spp.	12 in.	4 in.	4 ft.
Lovegrass	*Eragrostis* spp.	12 in.	4 in.	4 ft.
Sawgrass	*Cladium jamaicense*	12 in.	4 in.	4 ft.
Maidencane	*Panicum hemitomon*	12 in.	4 in.	4 ft.
Pickerelweed	*Pontederia cordata*	12 in.	4 in.	4 ft.
Arrowhead	*Sagittaria lancifolia*	12 in.	4 in.	4 ft.
Soft-stem bulrush	*Scirpus validus*	12 in.	4 in.	4 ft.
Spikerush	*Eleocharis interstincta*	12 in.	4 in.	4 ft.
Bacopa	*Bacopa caroliniana*	--	Liner	--

For WC-1 and WC-2, wildlife corridors will be established to provide a connection between Shaggy Cypress Swamp and Camp Keais Strand. The land cover within the area of the proposed connection includes an existing farm field. The existing farm field will be restored and planted in accordance with Table 3 to establish cover for wildlife that may utilize WC-1 and WC-2.

5.0 PERIMETER LAKE BUFFER AND FENCING

The Project site design includes a perimeter lake buffer between the proposed development areas and the conservation areas associated with Camp Keais Strand and Shaggy Cypress Swamp. The goal of this lake buffer is to limit the potential for large mammal access to development areas and internal preserves. The lake buffer has been designed with a width of 180 feet during wet season conditions and 150 feet during dry season conditions. Per discussions with USFWS and FWCC staff, the 150 foot width is needed to deter large mammals from crossing into the development areas. The locations of the proposed lake buffer are depicted on Appendix B. A typical section of the lake buffer is included in Appendix D. Breaks in the buffer lake have been designed as part of the surface water management plans for the Project in order to eliminate the potential for hydrological impacts to adjacent wetlands. These breaks will consist of earthen berms. At the breaks between the lakes and where construction of this lake buffer is not feasible, wildlife fencing that consists of a 10 foot chain link fence will be used to deter access by large mammals.

6.0 BUFFERS AND FENCING FOR INTERNAL CONSERVATION AREAS

Where native uplands exist, a minimum 15-foot upland buffer will be provided for the Project's internal conservation areas. A structural buffer (i.e., berm, fence) will be utilized where native uplands do not exist. Typical sections of the various buffers are included as Appendix D.

Fencing will be utilized along road crossings through internal conservation areas and where roads are adjacent to conservation areas. The fencing will be placed parallel to the roadways to funnel animals to the wildlife crossings. The type of fence used for these purposes will be a four foot chain link fence. A map depicting the locations of proposed fencing is provided as Appendix B. A typical section showing the proposed fencing adjacent to the road crossings is provided as Appendix D.

7.0 PRESCRIBED FIRE

Prescribed burning may be used as a management tool to maintain the native vegetation communities within the conservation areas. Prescribed burns help maintain vegetative communities in their natural state, reduce fuel loads and the danger of wildfire, aid with the eradication and control of exotic and nuisance vegetation species, and improve wildlife habitat. The objectives of prescribed burning in the conservation areas will be to aid in the

control of exotic vegetation and woody shrubs (i.e., wax myrtle (*Myrica cerifera*) and saltbush (*Baccharis halimifolia*)), and to stimulate the growth and diversity of herbaceous vegetation.

If prescribed burning is conducted, burning frequency for the conservation areas will be two to four years, which is consistent with the natural fire regime for mesic flatwoods, wet flatwoods, and wet prairies described by Florida Natural Areas Inventory (FNAI) in the *Guide to the Natural Communities of Florida* (FNAI 2010). The edges of the freshwater marshes and cypress forests will be burned when the fire moves through the adjacent pine and prairie habitats. The fire will be allowed to extinguish naturally within the wetter cypress and marsh habitats.

Prescribed burning is typically conducted during the winter or early spring when temperatures are reduced and wind direction is more constant. An initial burn would likely be conducted during the late winter. Winter burns are preferred to reduce high fuel loads. Following the initial burn, the season of the year of prescribed burn will vary from late winter burns to early wet season burns in order to increase biodiversity within the site. Changes in annual weather cycles determine when burn permits will be available and burns may be conducted only on the day(s) of Florida Forest Service permission.

Required permits from the appropriate regulatory authorities will be obtained prior to implementation of prescribed burns. Prior to the prescribed burn, the burn prescription will be forwarded to SFWMD compliance staff. Appendix E provides further information regarding prescribed burning.

8.0 PRESERVE SIGNAGE

Signage shall be placed around preserve areas to identify and protect the preserves during and after construction. Signs identifying the preserve as a "nature preserve area" will be installed along the boundary of the preserve. The signage should include language stating, "No dumping allowed." A typical preserve sign is shown in Appendix F.

9.0 AMERICAN ALLIGATOR MANAGEMENT PLAN

The following plan outlines the protection guidelines that will be implemented for the American alligator during and after construction of the Project.

9.1 Biology

The American alligator is a reptile with an elongated, armored, lizard-like body with a muscular flat tail. Adult alligators are dark with a pale underside while juveniles have bright yellow stripes and blotches. The average size for adults is 8.2 feet for females and 11.2 feet for males. The body weight can reach up to one-half ton.

American alligators inhabit all counties in the state of Florida and are most common in the major river drainage basins and large lakes in the central and southern portions of the state. They also can be found in marshes, swamps, ponds, drainage canals, phosphate-mine settling ponds, and ditches. Alligators are tolerant of poor water-quality and occasionally inhabit brackish marshes along the coast. A few even venture into salt water (Nifong *et al.* 2015). Individuals are wide ranging and some males may utilize an area of two square miles or more. Individuals of both sexes are most likely to become more active and extend their ranges during the April to May courtship and breeding season. Prey may include frogs, snakes, birds, and small mammals, although alligators are opportunistic feeders and may prey on what is readily available (Saalfeld *et al.* 2011). Larger individuals often prefer carrion to fresh meat.

9.2 Habitat Management

Signs will be posted to instruct on-site workers and residents not to feed or harass the American alligator. The signs will indicate that the offense is punishable by law. A typical sign is shown in Appendix F. Construction personnel and residents will be instructed that in the event there is a problem with a persistent nuisance alligator, they will need to contact the FWCC, as that is the only agency empowered to handle nuisance alligators.

American alligator habitat will be provided within the conservation areas for the Project. Following the completion of the mitigation program, the conservation areas will consist of 3,382.19± acres of wetlands that will serve as potential foraging and nesting habitat. Invasive exotic removal will result in wetland preserves that are more suitable as habitat, and provide suitable habitat for American alligator prey species. The conservation areas will be maintained per the SFWMD Wetland Mitigation/Monitoring/Maintenance Plan.

10.0 EASTERN INDIGO SNAKE MANAGEMENT PLAN

While the Eastern indigo snake has not been observed on-site, the following plan outlines the protection guidelines that will be implemented for the Eastern indigo snake during clearing operations for the Project. The plan provides educational material and guidelines for construction personnel to follow in the event they encounter an Eastern indigo snake. The plan has been prepared following the guidelines established by the USFWS for the protection of the Eastern indigo snake.

10.1 Biology

The Eastern indigo is a large, non-poisonous, glossy black snake with smooth iridescent scales. The chin and throat may be rusty or white-blotched. The juvenile snakes are similar to the adults, but may be lighter and exhibit a blotched dorsal pattern. Adults can grow to lengths over eight feet. The Eastern indigo might be confused with the black racer (*Coluber constrictor*), but the black racer exhibits a white or brown throat and is smaller and lighter in build (USFWS 2013).

The Eastern indigo snake inhabits a range of habitat types including pine flatwoods and wet prairies. Individuals are wide ranging and may utilize an area of 250 acres or more. Eastern indigo snakes are known to shelter in gopher tortoise burrows (Hyslop *et al.* 2012). The Eastern indigo snake is diurnal (active only during the daytime) and will actively search for prey. Prey may include frogs, snakes, birds, and small mammals (Stevenson *et al.* 2010). Very little is known of the reproduction of this species in the wild. Breeding is believed to occur during the winter and early spring months with up to 11 large white eggs being deposited in late spring and early summer (Hyslop *et al*. 2012).

10.2 Habitat Management

The USFWS' Standard Protection Measures for the Eastern Indigo Snake (2013) will be followed prior to and during construction activities. The Standard Protection Measures include the placement of posters at strategic locations on the construction site and along proposed access roads clearly visible to construction staff. The posters include a description and photograph of the Eastern indigo snake, its protection status, and instructions in the event that one is observed. In addition, informational brochures will be provided to all construction staff.

The preserve areas will be maintained per the SFWMD Wetland Mitigation/Monitoring/Maintenance Plan and will provide habitat for the Eastern indigo snake.

11.0 BALD EAGLE MANAGEMENT PLAN

The following plan outlines the protection guidelines that will be implemented for the existing bald eagle nest during and after the construction of the Project. The bald eagle is no longer listed by the FWCC or the USFWS but is protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

11.1 Biology

The following information on the biology of the bald eagle is excerpted from the South Florida Multi-Species Recovery Plan (USFWS 1999).

Bald eagles are considered a water-dependent species typically found near estuaries, large lakes, reservoirs, major rivers, and some seacoast habitats (Robards and King 1966, King *et al*. 1972, Weekes 1974, Whitfield *et al*. 1974, Gerrard *et al*. 1975, Grier 1977, Anthony and Isaacs 1989, Wood *et al*. 1989). Their distribution is influenced by the availability of suitable nest and perch sites near large, open water bodies, typically with high amounts of water-to-land edge. Bald eagles demonstrate a remarkable ability to tolerate perturbations to their habitat, throughout their range.

Their adaptability to a variety of habitat conditions makes generalizations about habitat requirements and nesting behavior difficult. Though variable, eagles have basic habitat

requirements that must be met in order to successfully reproduce and survive during the winter, or non-nesting season. Florida bald eagle nests are often located in the ecotone between forest and marsh or water, and are constructed in dominant or co-dominant living pines (*Pinus* spp.) or bald cypress (*Taxodium distichum*) (McEwan and Hirth 1979). Approximately ten percent of eagle nests are located in dead pine trees, while two to three percent occur in other species such as Australian pine (*Casuarina equisetifolia*) and live oak (*Quercus virginiana*). Nest trees in South Florida are smaller and shorter than reported elsewhere; however, comparatively they are the largest trees available (Wood *et al.* 1989, Hardesty 1991). The small size of nest trees in South Florida relative to other nest sites throughout the eagle's range is due to the naturally smaller stature of *Pinus elliottii*, *P. taeda*, *P. palustris*, and *P. clausa* in South Florida and the lack of pines in extreme Southern Florida.

Nesting activities generally begin in early September in South Florida, with egg-laying occurring as early as late October and peaking in the latter part of December. Incubation may be initiated from as early as October through as late as March, depending upon latitude. Clutches usually consist of one or two eggs, but occasionally three or four are laid. Incubation takes approximately 35 days and fledging occurs within 10 to 12 weeks of hatching. Parental care may extend 4 to 6 weeks after fledging, even though young eagles are fully developed and may not remain at the nest after fledging (USFWS 1989).

11.2 Bald Eagle Nest Management

Proposed construction activities within 660 feet of an active bald eagle nest will follow the applicable protection guidelines as described in the FWCC Bald Eagle Management Plan Handbook (FWCC 2010) and the USFWS National Bald Eagle Management Guidelines (USFWS 2007).

12.0 CRESTED CARACARA MANAGEMENT PLAN

The following plan outlines protection guidelines that will be implemented for the crested caracara nest prior to, during and after construction for the Project.

12.1 Biology

The crested caracara is a large, non-migratory raptor that feeds largely on carrion and is often found with flocks of turkey vultures (*Cathartes aura*) and black vultures (*Coragyps atratus*). The population of crested caracara found in peninsular Florida is genetically isolated from other populations of crested caracara subspecies found in the Southwestern United States and portions of Central and South America (USFWS 1999). While other subspecies of crested caracara are not listed as threatened or endangered, the crested caracara subspecies found in Florida was listed, in July 1987, as threatened under the Endangered Species Act (16 U.S.C. 1531 *et seq*).

Crested caracaras primarily use open habitats including native prairies, grasslands, and pastures with their associated freshwater marshes and small clumps of cabbage palms (*Sabal palmetto*), live oak (*Quercus* spp.) hammocks, and cypress (*Taxodium* spp.). Cabbage palms in open habitats are of high importance for nesting (Rodgers *et al.* 1996, Morrison 2001). The primary nesting season for the crested caracara is November through April. Egg laying typically occurs December through February. Clutch size is one to three eggs and incubation ranges from 28 to 32 days. Caracara young fledge at age seven to eight weeks, most in March and April (Wood 2001).

12.2 Pre-Construction Surveys

Prior to commencement of clearing activities within 1,500 meters (4,920 feet) of the identified nest, a survey will be conducted during the crested caracara nesting season (January through April) to determine if the nest is active or if other crested caracara nests are present. The survey will be conducted in potential nesting and foraging habitat within 1,500 meters of the identified caracara nest, including land adjacent to the Project that is under the applicant's ownership. The crested caracara survey will be conducted according to the methodology described in the USFWS Draft Species Conservation Guidelines for South Florida for the Audubon's Crested Caracara (USFWS 2004). The locations of crested caracara nests and the movements and activities of caracaras will be documented, if observed.

12.3 Crested Caracara Nest and Habitat Management

Proposed construction activities within 1,000 meters (3,330 feet) of an active nest will follow the applicable guidelines as described in the USFWS Habitat Management Guidelines for Audubon's Crested Caracara in Central and South Florida (USFWS 2002).

Enhancement and restoration activities will occur on existing agricultural lands within the Project conservation areas. These management activities include removal of exotic and nuisance vegetation as well as supplemental plantings. If cabbage palms are not already present in sufficient number or location to serve as nest trees, they may be planted as necessary as part of the management activities to provide adequate nesting habitat for crested caracaras.

13.0 WOOD STORK AND WADING BIRD MANAGEMENT PLAN

The following habitat management plan has been prepared for the purpose of addressing the conservation of potential wading bird habitat on the Project. Wood storks and other species of listed wading birds have been observed utilizing the Project site during protected species surveys and other fieldwork.

13.1 Habitat Management

Enhancement of the existing wetlands in the conservation areas through the removal of invasive exotic plants and the installation of supplemental plantings will result in habitats that are more suitable for wading bird foraging and roosting. The creation of lakes and lake littoral zones as part of the Project will also provide foraging habitat for wading birds. In addition, 851.11± acres of farm fields on the Project site will be restored under the Collier County RLSA Program. The grading plan for wetland restoration areas includes the establishment of wading bird foraging habitat. These areas will be graded to varying depths to allow the concentration of prey for wading birds at alternating times of the year as water levels seasonally rise and recede.

14.0 BIG CYPRESS FOX SQUIRREL MANAGEMENT PLAN

The following habitat management plan has been prepared for the purpose of addressing the conservation of Big Cypress fox squirrel habitat on the Project and outlines the protection guidelines that will be implemented for the Big Cypress fox squirrel during and after construction of the Project.

14.1 Biology

The Big Cypress fox squirrel lives and breeds in varied habitats in Southwest Florida including cypress swamps, pine flatwoods, tropical hardwood forests, live oak woods, mangrove forests, and suburban habitats, including golf courses, city parks, and residential areas in native vegetation (Humphrey 1992). Dense cypress/hardwood swamps are avoided. This may be due to the competition for food and habitat with the gray squirrel (*Sciurus carolinensis*). Little data is available on the preferred forage habitat of the Big Cypress fox squirrel. Big Cypress fox squirrels prefer to feed on the male and female cones of slash pine. Cabbage palm fruits, bromeliad buds, and acorns are also important food items. A smaller percentage of the diet may consist of seasonal fruits, berries, and seeds (Humphrey 1992).

Big Cypress fox squirrels often form platform nests in pines, hardwoods, and moss and stick nests in cypress (*Taxodium distichum*), tops of cabbage palms (*Sabal palmetto*), and large clumps of bromeliads. Cabbage palms and bromeliads are especially important because they can provide immediate shelter, which allows the squirrel to travel over large areas without requiring a daily return to a permanent nesting facility (Humphrey 1992).

Big Cypress fox squirrels are solitary animals. Interaction between animals occurs primarily during mating season. Mating chases occur frequently throughout the months of May through August. During the non-mating season, interactions are infrequent and often occur around food sources. Young remain in the nest for approximately 90 days. Home ranges are 40 hectares or approximately 100 acres for males and 20 hectares or approximately 50 acres for females (Humphrey 1992).

14.2 Pre-Construction Surveys

Prior to commencement of clearing activities, a survey will be conducted in forested areas to be cleared to identify potential Big Cypress fox squirrel nests. If potential nests are identified within the clearing limits, observations will be conducted to determine if the nests are being utilized by Big Cypress fox squirrels.

No clearing will be conducted within 125 feet of an active Big Cypress fox squirrel nest tree. After completion of nesting and observations document that juvenile squirrels have left the nest, the nest tree and buffer can then be cleared.

14.3 Habitat Management

The preserve areas will be enhanced and managed per the SFWMD Wetland Mitigation/Monitoring/Maintenance Plan and will provide foraging and nesting habitats for Big Cypress fox squirrels.

15.0 FLORIDA BLACK BEAR MANAGEMENT PLAN

The following management plan has been prepared for the purpose of addressing the Florida black bear. The Florida black bear is not listed by the FWCC or the USFWS. However, the FWCC has specific management guidelines for this species.

15.1 Biology

The Florida black bear is a solitary animal that inhabits heavily wooded terrain. They are most often found in large tracts of swamp forest and undisturbed upland forest. Some of the most important habitat types for the black bear include pine flatwoods, hardwood swamps, cypress swamps, cabbage palm forests, sand pine scrub, and mixed hardwood hammocks. Denning often occurs in remote swamps or thickets with dense vegetation. Adult females breed in alternating years during the months of June and July. In Florida, hibernation may be restricted to females producing cubs. Hibernation most often occurs during the winter months. The diet of black bears is highly variable and includes both plants and animals including saw palmetto (*Serenoa repens*), berries, honeybees, ants, armadillo (*Dasypus novemcinctus*), feral hog (*Sus scrofa*), and white-tailed deer (*Odocoileus virginianus*) (Humphrey 1992).

15.2 Habitat Management

In order to deter the potential for interactions between humans and large mammals, such as the Florida black bear, a lake buffer will be constructed between the conservation areas and development areas. Where a lake buffer is not feasible, fencing will be used between development and conservation areas. See Section 5.0 for details regarding the buffer lake and fencing.

Habitat within Shaggy Cypress Swamp and Camp Keais Strand that are part of the Project's conservation areas will be managed for the Florida black bear through the enhancement, restoration, and preservation of uplands and wetlands to provide quality habitat and wildlife corridors for the bear. Enhancement activities will provide higher quality habitat for the Florida panther than exist in the currently degraded condition. The preservation of Shaggy Cypress Swamp and the portion of Camp Keais Strand located within the Rural Lands West project boundary are part of the larger regional wildlife habitat preservation plan proposed through the establishment of SSAs 14, 15, and 17 under the Collier County RLSA program.

The FWCC will be consulted on management initiatives such as bear-resistant dumpsters and garbage receptacles for residential areas. A list of companies obtained from the FWCC that provide bear resistant garbage containers for residential use is provided as Appendix G.

In addition, these management initiatives may include the following. Residential units that have curbside garbage service will be required to place garbage containers curbside no earlier than the morning of the days of garbage pickup and garbage containers will be returned to their permitted location no later than the evening of the days of garbage pickup. For units with curbside garbage service, all garbage, trash refuse, or rubbish will be required to be placed in appropriate garbage containers and stored inside an enclosed area except for the days when there is curbside garbage pickup service. For units without curbside garbage service, all garbage, trash refuse, or rubbish will be placed in bear-resistant dumpsters with the lid closed and secured.

16.0 FLORIDA PANTHER MANAGEMENT PLAN

The following management plan has been prepared for Florida panther.

16.1 Biology

The Florida panther is a large, long-tailed cat with a great deal of color variation: pale brown or rusty upper parts; dull white or buff-colored under parts; and dark brown or blackish tail tip, back of ears, and sides of nose. Mature males have an average weight range between 100 to 150 pounds and measure nearly seven feet from nose to tip of tail. Females are considerably smaller with a weight range of 50 to 100 pounds and measuring about six feet (USFWS 1987). Panthers subsist on a variety of mammalian prey dominated by white-tailed deer, feral hog, and in some areas raccoon (Maehr 1988*a*). Existing data on Florida panther reproduction indicates that breeding occurs throughout the year with a peak in the winter/spring period, a gestation period of around 90 to 95 days, litter sizes of one to four kittens, and a breeding cycle of two years for females successfully raising young to dispersal (which occurs around 18 to 24 months) (Belden 1988, Maehr 1988*b*).

In terms of population size and occupied range, the Florida panther population is at least stable and at best expanding as evidenced by natality rates exceeding mortality rates and by recent dispersals north of the Caloosahatchee River (Land *et al.* 2000). According to Maehr *et al.* (1991), home ranges average 200 square miles for resident adult males, 75 square miles

for adult females, 241 square miles for transient males, and 69 square miles for sub-adult females. Florida panthers inhabit large remote tracts of land with adequate prey and cover and occupy a variety of habitat types including hardwood hammocks, pine flatwoods, mixed hardwood swamps, and cypress swamps. Appropriate cover is an important component of habitats used, especially during hunting, denning, and day-bedding. Recent information based on global positioning system (GPS) telemetry data collected during nocturnal and diurnal periods indicate that forests are the habitats selected by panthers (Land *et al.* 2008).

16.2 Habitat Management

In order to deter the potential for interactions between humans and large mammals, such as the Florida panther, a lake buffer will be constructed between the conservation areas and development areas. Where a lake buffer is not feasible, fencing will be used between development and conservation areas. See Section 5.0 for details regarding the buffer lake and fencing.

Habitat within Shaggy Cypress Swamp and Camp Keais Strand that are part of the Project's conservation areas will be managed for the Florida panther through the enhancement, restoration, and preservation of uplands and wetlands to provide quality habitat and wildlife corridors for the Florida panther and associated prey species. Enhancement activities will provide higher quality habitat for the Florida panther than exist in the currently degraded condition. The preservation of Shaggy Cypress Swamp and the portion of Camp Keais Strand located within the Rural Lands West project boundary are part of the larger regional wildlife habitat preservation plan proposed through the establishment of SSAs 14, 15, and 17 under the Collier County RLSA program.

17.0 HUMAN-WILDLIFE COEXISTENCE PLAN

The following Human-Wildlife Coexistence Plan will be incorporated into the Rural Lands West homeowners association (HOA) documents.

17.1 American Alligator Human-Wildlife Coexistence Plan

Signs will be posted on the subject property to instruct on-site workers and residents not to feed or harass the American alligator. The signs will indicate that the offense is punishable by law. The typical signage is provided in Appendix F.

The FWCC educational brochure entitled "A Guide to Living with Alligators" (Appendix H) will be provided to homeowners, community association managers, and maintenance staff. The brochure can be found at http://myfwc.com/media/152524/Alligator_Brochure.pdf.

Construction personnel and residents will be instructed that in the event there is a problem with a persistent nuisance alligator, they will need to contact the FWCC, as that is the only agency empowered to handle nuisance alligators.

17.2 Eastern Indigo Snake Human-Wildlife Coexistence Plan

The USFWS's Standard Protection Measures for the Eastern Indigo Snake (USFWS 2013) will be followed prior to and during construction activities. The Standard Protection Measures include the placement of posters at strategic locations on the construction site and along proposed access roads clearly visible to construction staff. The posters include a description and photograph of the Eastern indigo snake, its protection status, and instructions in the event that one is observed. In addition, informational brochures will be provided to all construction staff. The USFWS's Standard Protection Measures, including the poster and brochure can be found at http://www.fws.gov/verobeach/listedspeciesreptiles.html. A copy of the brochure is provided in Appendix I.

17.3 Bald Eagle Human-Wildlife Coexistence Plan

The bald eagle protection guidelines as described in the FWCC Bald Eagle Management Plan Handbook (FWCC 2010) and the USFWS National Bald Eagle Management Guidelines (USFWS 2007) will be implemented to avoid disturbance to the bald eagle nest.

17.4 Crested Caracara Human-Wildlife Coexistence Plan

Problematic encounters between future residents and crested caracara are not anticipated. Restricted resident access to the preserves through signage, as well as the typical nest location within the canopy of cabbage palms, will ensure against disturbance to crested caracara nests.

17.5 Wading Bird Human-Wildlife Coexistence Plan

A brochure prepared by PAI entitled "Wading Bird Informational Pamphlet" (Appendix J) will be provided to residents and maintenance staff. The brochure provides wading bird information and methods to prevent human-wading bird interactions. In addition, the brochure informs residents of the need to avoid disturbance around nesting colonies should a colony be identified on the property in the future.

17.6 Big Cypress Fox Squirrel Human-Wildlife Coexistence Plan

Problematic encounters between future residents and Big Cypress fox squirrels are not anticipated. Restricted resident access to the preserves through signage, as well as the typical nest location high within the tree canopy, will ensure against disturbance to fox squirrel nests.

17.7 Florida Black Bear Human-Wildlife Coexistence Plan

The FWCC educational brochure entitled "A guide to living in bear country" (Appendix K) will be provided to residents, community association managers, and maintenance staff. This brochure may be found at http://myfwc.com/wildlifehabitats/managed/bear/brochures/.

The FWCC will be consulted on management initiatives such as bear-resistant dumpsters and garbage receptacles for residential areas. A list of companies obtained from the FWCC that provide bear-resistant garbage containers for residential use is provided as Appendix G.

In addition, these management initiatives may include the following. Residential units that have curbside garbage service will be required to place garbage containers curbside no earlier than the morning of the days of garbage pickup and garbage containers will be returned to their permitted location no later than the evening of the days of garbage pickup. For units with curbside garbage service, all garbage, trash refuse, or rubbish will be required to be placed in appropriate garbage containers and stored inside an enclosed area except for the days when there is curbside garbage pickup service. For units without curbside garbage service, all garbage, trash refuse, or rubbish will be placed in bear-resistant dumpsters with the lid closed and secured.

17.8 Florida Panther Human-Wildlife Coexistence Plan

The educational brochure entitled "A guide to living with Florida Panthers" (Appendix L), prepared by the FWCC and the USFWS, will be provided to residents, community association managers, and maintenance staff. This brochure provides safety tips and instructions for panther encounters. The brochure may be found on the FWCC website located at http://myfwc.com/conservation/you-conserve/wildlife/panthers/.

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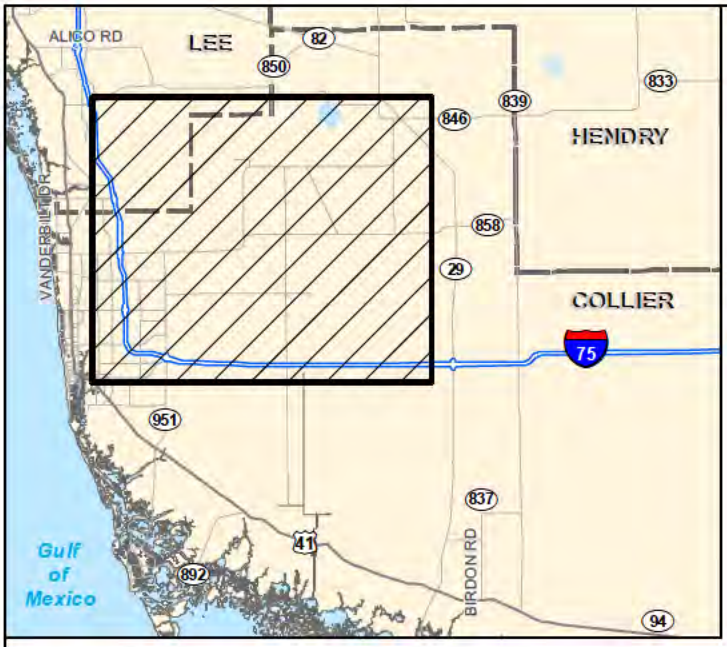
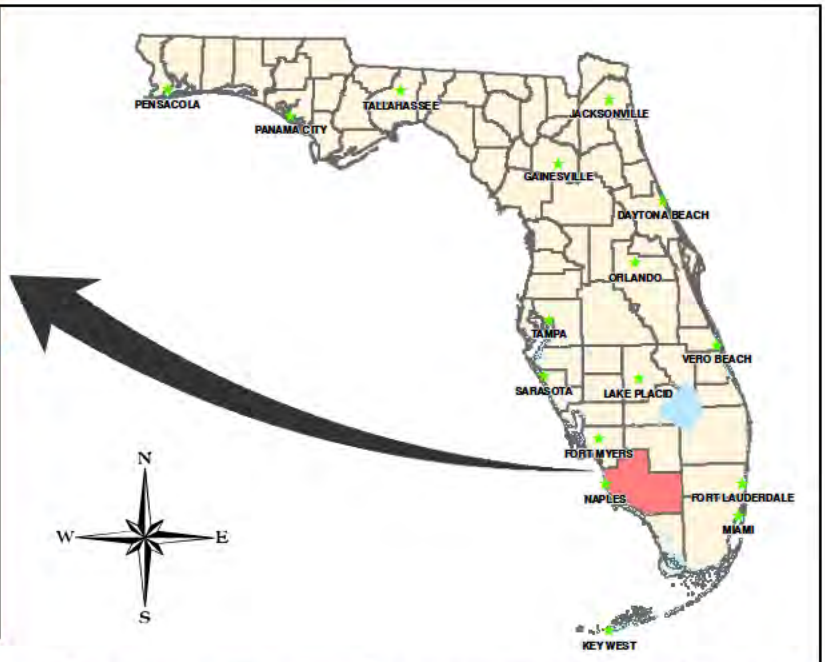
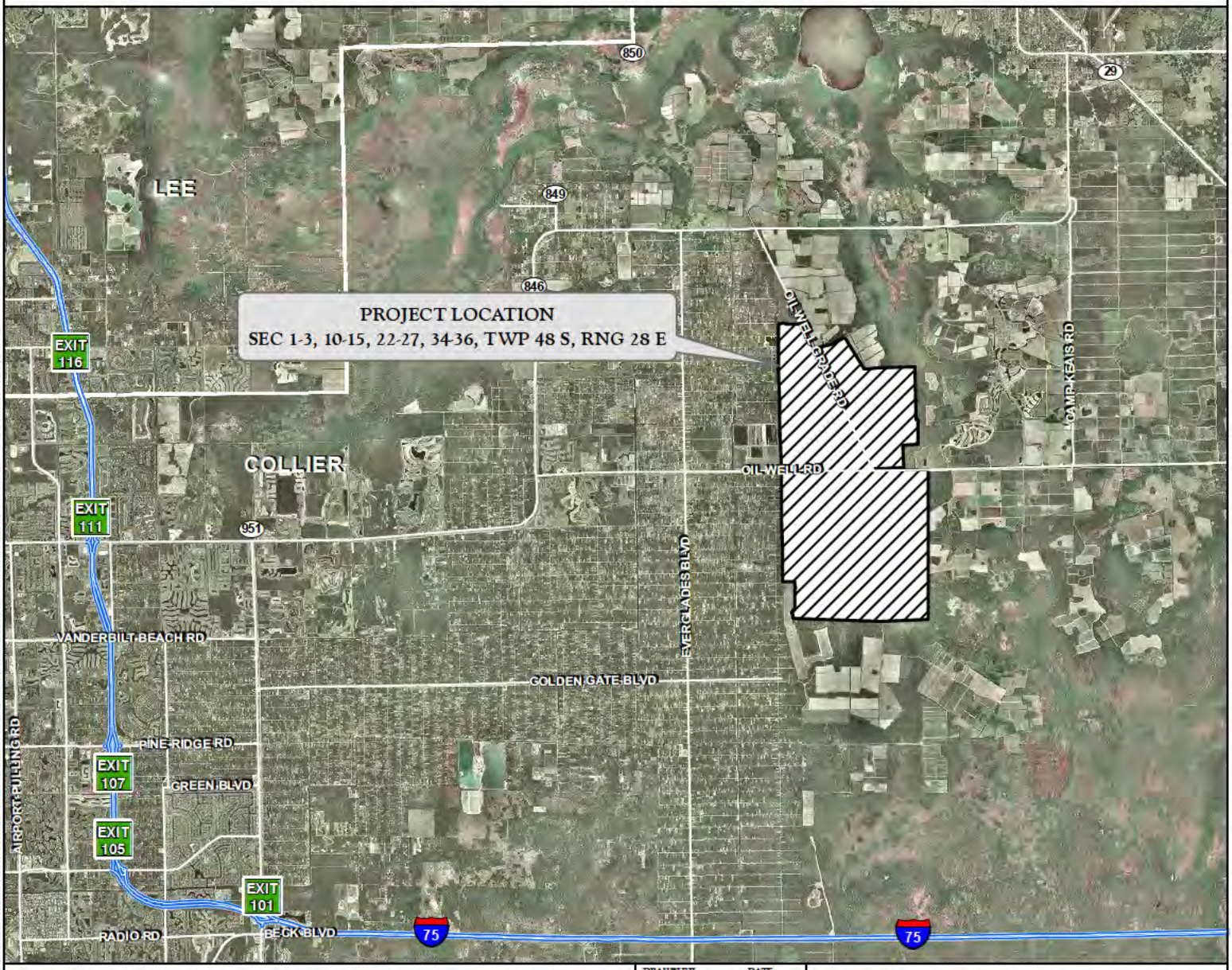
APPENDIX A

PROJECT LOCATION MAP







APPENDIX A. PROJECT LOCATION MAP
RURAL LANDS WEST

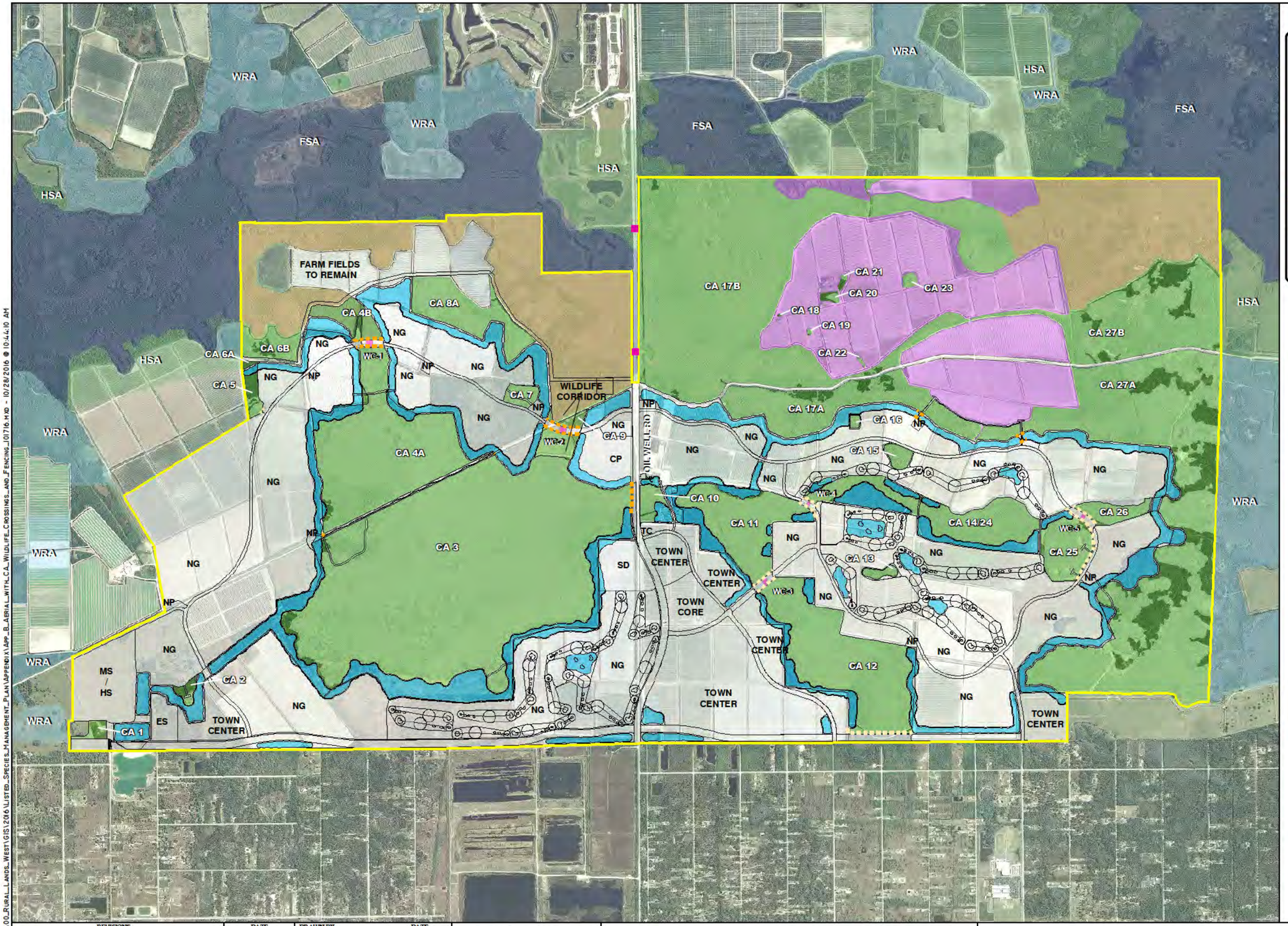
DRAWN BY	DATE
H.H.	1/25/16
REVIEWED BY	DATE
C.G.R.	1/25/16
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2015\05cem148\100_RURAL_LANDS_WEST\GIS\2016\LISTED_SPECIES_MANAGEMENT_PLAN\APPENDIX\APP A PROJECT LOCATION MAP.MXD - 10/31/2016 @ 2:21:09 PM

APPENDIX B

AERIAL WITH PROPOSED WILDLIFE CROSSINGS, LAKE BUFFERS, AND FENCING



LEGEND

- Rural Lands West
- Wetland Preserve
- Upland Preserve
- Wetland Restoration under Collier County RLSA
- Water Management / Buffer Lake
- Development
- Previously Permitted Mitigation Area
- Proposed Wildlife Crossing
- Existing Wildlife Crossing (Aprox. Location)
- Fencing (10' Chain Link)
- Fencing (4' Chain Link)

Off-Site County RLSA

- Flowway Stewardship Area
- Habitat Stewardship Area
- Water Retention Area

N E S W

0 0.5 1

Miles

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY AND SITE PLAN PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. 11283SRA25-091916.dwg DATED SEPTEMBER 19, 2016.

WILDLIFE CROSSINGS PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. RLW ERP WM BASIN BOUNDARIES-SEC MARKERS & WL CROSSINGS-061516.DWG DATED JUNE 15, 2016.

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

FSA AND HSA AREAS WERE ACQUIRED PER EMAIL FROM THE COLLIER COUNTY GRAPHICS DEPARTMENT SEPTEMBER 2005.

REVISIONS	DATE
Revised Site Plan	9/20/16

DRAWN BY	H.H.	DATE	2/17/16
DESIGNED BY	K.C.P.	DATE	2/17/16
REVIEWED BY	K.C.P.	DATE	2/17/16

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

Passarella & Associates, Inc. — Consulting Biologists

RURAL LANDS WEST

AERIAL WITH PROPOSED WILDLIFE CROSSINGS, LAKE BUFFERS, AND FENCING

DRAWING No. 05CEM1481

SHEET No. APPENDIX B

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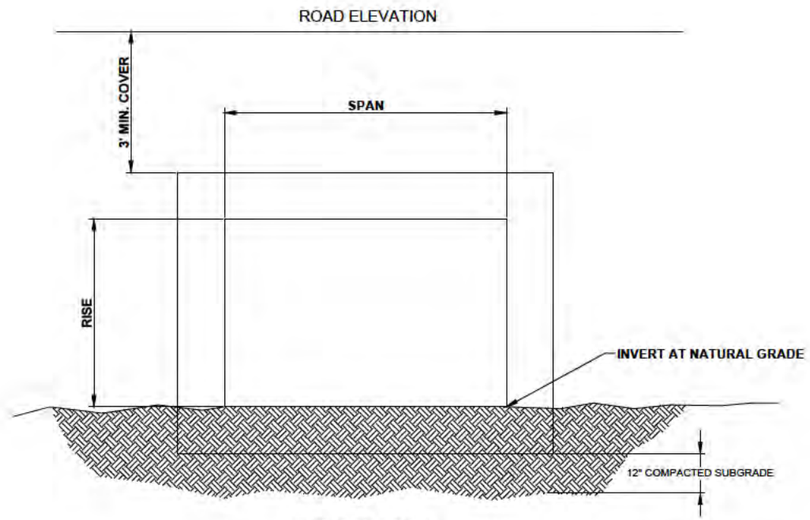
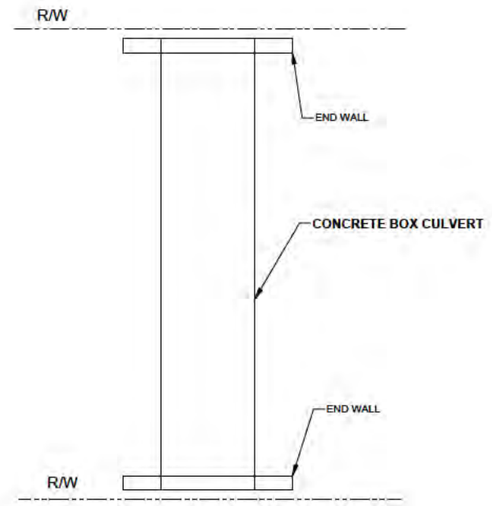
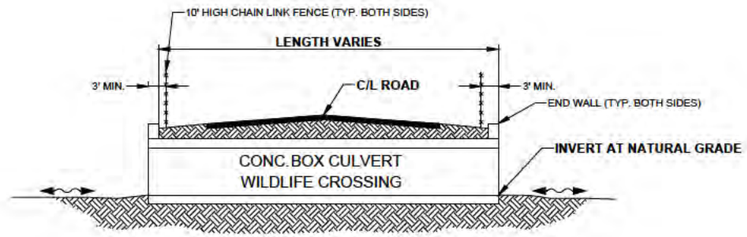
APPENDIX C

WILDLIFE CROSSING DETAIL



SECTION VIEW





PROFILE VIEW

WILDLIFE CROSSING DETAIL

NTS

NOTES:

TYPICAL SECTIONS PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. RLW ERP CAD SECTIONS TO PAI-061516.DWG AND WILDLIFE CROSSING.DWG DATED JUNE 15, 2016.

REVISIONS	DATE

DRAWN BY	H.H.	DATE	6/16/16
DESIGNED BY	K.C.P.	DATE	6/16/16
REVIEWED BY	K.C.P.	DATE	6/16/16

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PASSARELLA & ASSOCIATES INC

RURAL LANDS WEST

WILDLIFE CROSSING DETAIL

DRAWING No. 05CEM1481

SHEET No. APPENDIX C

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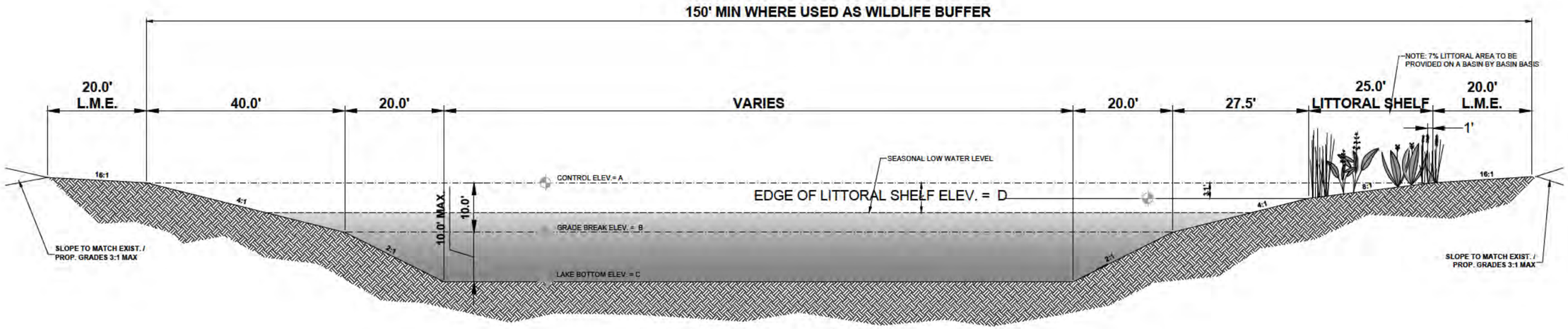
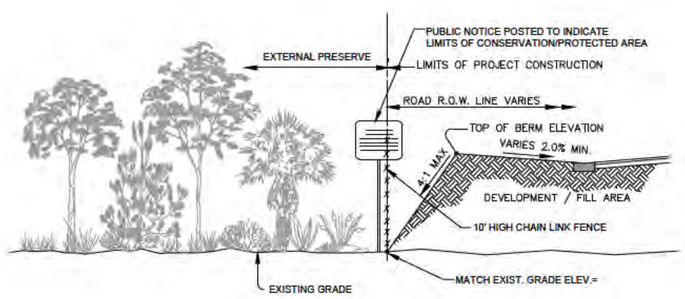
APPENDIX D

LAKE BUFFER AND STRUCTURAL BUFFER TYPICAL SECTIONS



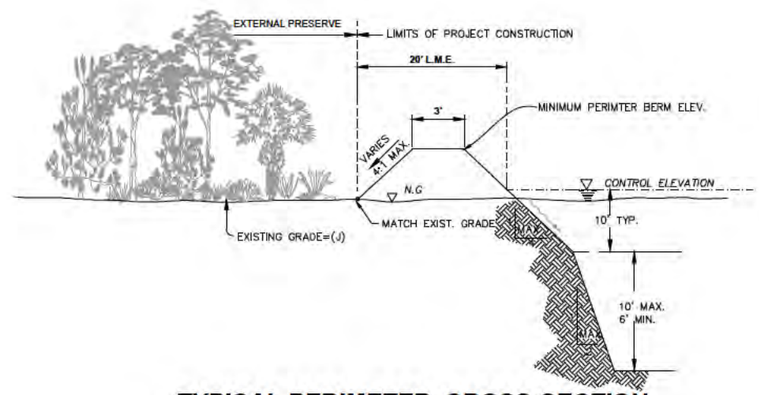
TYPICAL LAKE SECTION

NTS



TYPICAL PERIMETER CROSS-SECTION
EXTERNAL PRESERVE & ROAD R.O.W.

NTS



TYPICAL PERIMETER CROSS-SECTION
EXTERNAL PRESERVE & PERIMETER LAKE

NTS

NOTES:

TYPICAL SECTIONS PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. RLW ERP CAD SECTIONS TO PAI-061516.DWG AND WILDLIFE CROSSING.DWG DATED JUNE 15, 2016.

REVISIONS	DATE	DRAWN BY	DATE
		H.H.	6/16/16
		DESIGNED BY	DATE
		K.C.P.	6/16/16
		REVIEWED BY	DATE
		K.C.P.	6/16/16

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PASSARELLA & ASSOCIATES INC

RURAL LANDS WEST

LAKE BUFFER AND STRUCTURAL BUFFER TYPICAL SECTIONS

DRAWING No. 05CEM1481

SHEET No. APPENDIX D-1

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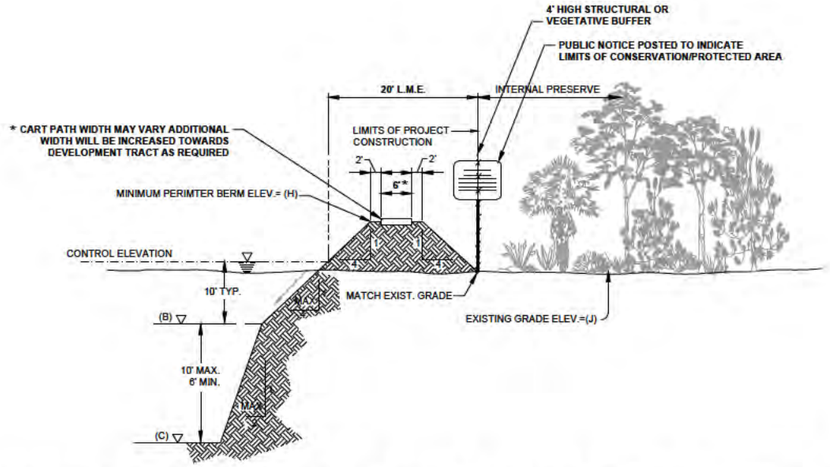
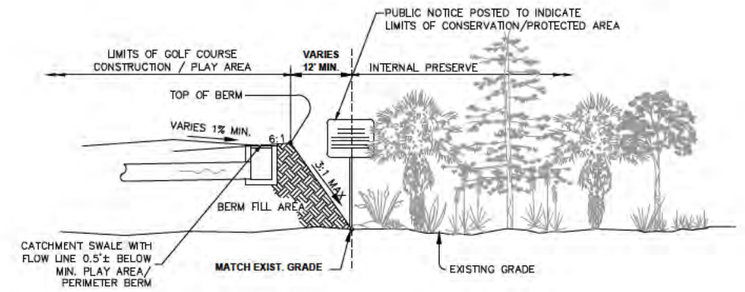


LAKE BERM & INTERNAL PRESERVE TYPICAL CROSS-SECTION w/ CART PATH

NTS



DEVELOPMENT & INTERNAL PRESERVE TYPICAL CROSS-SECTION

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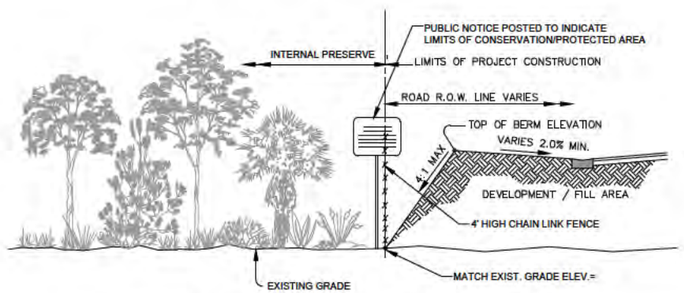
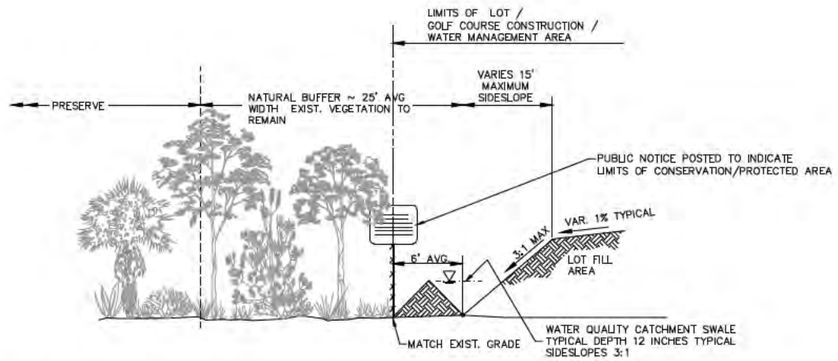


PERIMETER TYPICAL CROSS-SECTION
INTERNAL PRESERVE & ROAD R.O.W.

NTS



DEVELOPMENT & INTERNAL PRESERVE TYPICAL CROSS-SECTION

NTS

NOTES:

TYPICAL SECTIONS PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. RLW ERP CAD SECTIONS TO PAI-061516.DWG AND WILDLIFE CROSSING.DWG DATED JUNE 15, 2016.

REVISIONS	DATE	DRAWN BY	DATE
		H.H.	6/16/16
		DESIGNED BY	DATE
		K.C.P.	6/16/16
		REVIEWED BY	DATE
		K.C.P.	6/16/16

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PASSARELLA & ASSOCIATES INC

RURAL LANDS WEST

LAKE BUFFER AND STRUCTURAL BUFFER TYPICAL SECTIONS

DRAWING No. 05CEM1481

SHEET No. APPENDIX D-2

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APPENDIX E

PRESCRIBED BURNING INFORMATION

Florida Landowner Assistance Program

Practice Standard - Prescribed Burning

Definition

The controlled application of fire in accordance with a written prescription for vegetative fuels under specified environmental conditions while following appropriate precautionary measures that insure that the fire is contained to a predetermined area to improve habitat for resident and migratory wildlife species.

Purposes

This practice may be applied as part of a conservation management system to support one or more of the following purposes:

- To improve habitat for various wildlife species, including imperiled species.
- To control invasive and/or exotic vegetation.
- To control plant diseases affecting native vegatation.
- To reduce wildfire hazards.
- To enhance native ground cover plants and seed production.
- To restore and maintain fire dependent ecological sites.

Conditions Where Practice Applies

This practice may be applied on any private land, where deemed needed, to improve overall wildlife habitat conditions.

Criteria

I. General Criteria Applicable to All Purposes

The method(s) of prescribed burning to improve wildlife habitat structure and composition shall be determined by the assigned biologist conducting the Needs Assessment. Application of the prescribed treatment will be based on the GIS analysis, site examination, and local wildlife species present. The landowner shall obtain all necessary burn authorizations and/or permits before implementation of the practice. Planning and application shall compy with all Federal, State, and local laws, rules, and regulations. The procedure, equipment, and number of trained personnel shall be adequate to accomplish the intended purposes as stated in the burn plan. The expected weather conditions, human and vehicular trafifc that may be impeded by heat or smoke, liability, and safety and health precautions shall be integrated into the timing, location and expected intensity of the burn. Timing of burning will be commensurate with soil and site conditions to maintain site productivity and minimize effects on soil erosion and soil properties. Firebreak construction and maintenance are not included as a cost-shared treatment.

II. Specific Criteria to Improve Wildlife Habitat

The appropriate season of burning, burning technique, burning frequency, and size of burn shall be selected based on the wildlife habitat needs and site limitations. Where practical, prescribed burning shall be planned and applied in a manner that creates a "patchy" mosaic of burned and unburned vegetation.

III. Specific Critera to Control Undesirable Vegetation

Prescribed burns to control brush or other undesirable vegetation shall consider the anticipated seed production and re-sprouting response of the targeted species. The frequency and intensity of the planned burn shall be based on the re-growth of the target species, weighed against wildlife habitat considerations. Prescribed burns planned for areas with known infestations of invasive and/or exotic species shall address anticipated response of those species during and following the prescribed burn. Re-establishment of native vegetation shall be planned for burned areas, where needed, to prevent encroachment of undesirable plants, control soil erosion, and restore historic plant commmunities.

IV. Specific Criteria to Improve Native Plant Production Quantity and/or Quality

Prescribed burns shall be planned to provide optimum benefit to the native plant species of concern. When possible, prescribed burns shall be conducted during periods of adequate soil moisture to encourage desirable plant recovery following the burn. Appropriate protection from livestock, human, and wildlife activities shall be implemented to allow desirable vegetation to recover from the stress of the burn. Burned areas shall be protected until the vegetation has recovered sufficiently to allow use to be restored without damaging the vegetation.

Considerations

Prescribed burns should be cost-effective and efforts to protect any threatened and endangered species, cultural resources, wildlife habitat, water resources, and identified unique natural areas should be considered. Personal safety should also be considered during all prescribed burning activities. Where practical, the season, frequency, duration, and intensity of prescribed burns should mimic the natural occurrence of fire typical of the ecological communty being managed. Consider the use of existing barriers, such as lakes, streams, wetlands, roads, and existing firebreaks in the design and layout of the burn. To minimize smoke related issues, burn frequently under acceptable weather conditions and complete all burns as quickly as practical.

Operation and Maintenance

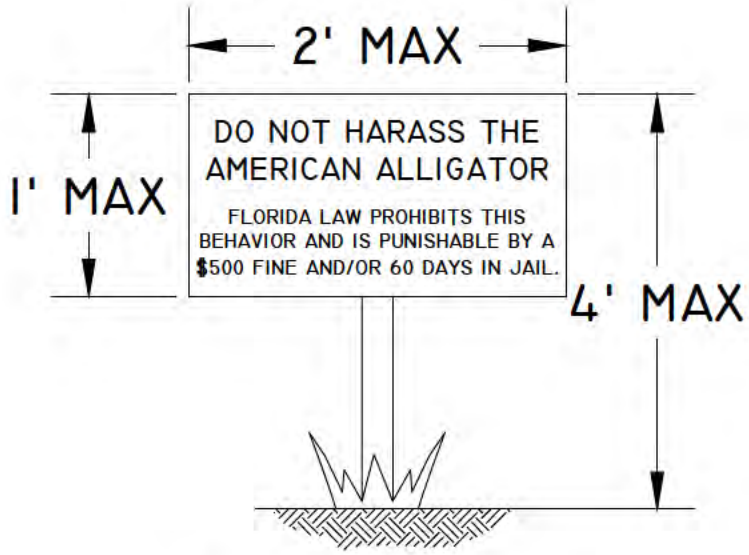
The following actions shall be carried out to insure that this practice functions as intended throughout its expected life: 1) Evaluations to determine if the stated objectives were met and to improve coordination of future burns, 2) Initial evaluations should be conducted within 2 weeks following the burn, 3) Long term evaluations should be conducted during or after the first growing season following the burn.

Items to consider in these evaluations include:

a. Were the pre-burn preparations properly completed?
b. Were the intial objectives met?
c. Was the burn prescription followed?
d. Were deviations from the burn prescription documented?
e. Was the burning technique(s) adequate to meet the planned objectives?
f. Were weather conditions, fire behavior, and smoke dispersion within the planned limits of the prescription?
g. What were the effects on the soil, vegetation, water, and wildlife resources?
h. Did the fire escape the planned area?
i. How could future burns be improved?
j. Were the post-burn activities applied correctly to meet the stated purpose or objective of the burn?

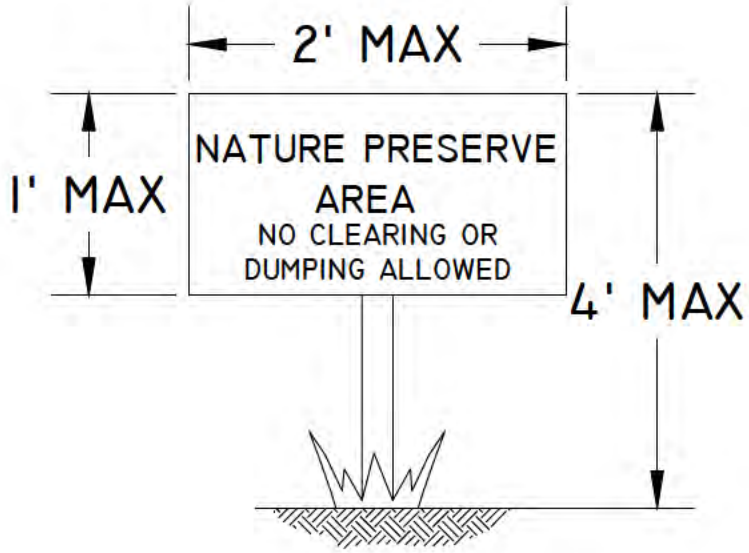
APPENDIX F

AMERICAN ALLIGATOR MANAGEMENT AND PRESERVE SIGNAGE



TYPICAL AMERICAN ALLIGATOR SIGNAGE

N.T.S.



TYPICAL PRESERVE SIGNAGE

N.T.S.

APPENDIX F. AMERICAN ALLIGATOR MANAGEMENT AND PRESERVE SIGNAGE
RURAL LANDS WEST

DRAWN BY	DATE
H.H.	1/9/16
REVIEWED BY	DATE
H.P.	1/9/16
REVISED	DATE

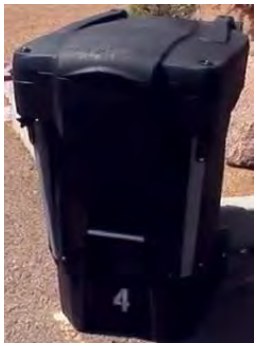
PASSARELLA & ASSOCIATES INC

APPENDIX G

FWCC LIST OF BEAR-RESISTANT GARBAGE CONTAINERS

BEAR RESISTANT TRASH CONTAINERS (prices last updated January 2015)

Residential Poly Carts *WITH* automatic locking lids *AND* designed for fully-automated waste pick-up

	Company	Contact Info/ Testing Status	Size	Minimum order	Price *per* container without shipping	Shipping *To Tallahassee, FL	Estimated Cost per Container [b]
	**Kodiak Products**	(928) 636-9298 Info@Kodiak-Products.com sjsherrill@hotmail.com http://www.kodiak-products.com/ Passed IGBT [a]	96 gallon	1	Contact Kodiak Products	Contact Kodiak Products	$270.00
			96 gallon	300	Contact Kodiak Products	Contact Kodiak Products	$237.00

Residential Poly Carts and Cans *WITH* automatic locking lids

	Company	Contact Info/ Testing Status	Size	Minimum order	Price *per* container without shipping	Shipping *To Tallahassee, FL	Estimated Cost per Container [b]
	Toter, Inc	Statesville, NC 1-800-424-0422 toter@toter.com http://www.toter.com Passed IGBT [a]	64 gallon	25	$202	$413 (for 25 cans)	$219
			96 gallon	25	$207	$482 (for 25 cans)	$226

Residential Poly Carts and Cans *WITH* automatic locking lids

	Company	Contact Info/ Testing Status	Size	Minimum order	Price *per* container without shipping	Shipping *To Tallahassee, FL	Estimated Cost per Container [b]
	BearSaver	1-800-851-3887 Fax: 909-605-7780 sales@bearsaver.com http://www.bearsaver.com Passed IGBT [a]	32 gallon	1	$161	$93	$291
			65 gallon	1	$196	$212	$408
			96 gallon	1	$207	$261	$468
	BearProof, Inc.	234 S. Golden Dr. Silt, CO 81652 970-309-2460 Fax: 970-876-0420 Info@BearProofInc.com http://www.bearproofinc.com	32 gallon	1	$682 each (for 1-4 cans) $657 each (for 5+ cans)	$290 [c]	$972 (for 1-4 cans) $947 (for 5+ cans)
			65 gallon	1	$427 each (for 1-4 cans) $402 each (for 5+ cans)	$238 [c]	$665 (for 1-4 cans) $640 (for 5+ cans)
			95 gallon	1	$446 each (for 1-4 cans) $421 each (for 5+ cans)	$266 [c]	$712 (1-4 cans) $687 (for 5+ cans)

Residential Poly Carts and Cans *WITHOUT* automatic locking lids

	Company	Contact Info/ Testing Status	Size	Minimum order	Price *per* container without shipping	Shipping *To Tallahassee, FL	Estimated Cost per Container [b]
	The Growler	Sanford, FL 407-519-0766 dennisbooth@cfl.rr.com http://www.thegrowlercan.com Passed IGBTP [a]	32 gallon	1	$179	$34	$213
			64 gallon	1	$189	$244 - $248	$433 - $437
			95 gallon	1	$229	$244 - $248	$473 - $477

Residential Poly Carts and Cans *WITHOUT* automatic locking lids

	Company	Contact Info/ Testing Status	Size	Minimum order	Price *per* container without shipping	Shipping* *To Tallahassee, FL	Estimated Cost per Container [b]
	BEARicuda Bins	1-877-232-7428 Fax: 860-540-0611 kevin@bearicuda.com http://www.bearicuda.com	32 gallon	1	$199 each (for 1-3 cans) $195 each (for 4+ cans)	$80-90 [c]	$279 (for 1-3 cans) $275 (for 4+ cans)
			64 gallon	1	$225 each (for 1-3 cans) $219 each (for 4+ cans)	$140-150 [c]	$365 (for 1-3 cans) $359 (for 4+ cans)
			95 gallon	1	$215 each (for 1-3 cans) $209 each (for 4+ cans)	$145-155 [c]	$360 (for 1-3 cans) $354 (for 4+ cans)

[a] Product has passed the Interagency Grizzly Bear Committee Testing Program (IGBTP) with captive bears at the Living with Wildlife Foundation.

[b] The " Estimated Cost per Container" column is showing = amount for shipping divided by (÷) the minimum amount that has to be purchased plus (+) the price per container. Therefore, it is showing the cost of *one* can. Each company has their own minimum order of cans that has to be purchased. Hence, the price provided in the last column is NOT the total cost of the full order.

[c] Costs depend on the amount of cans being purchased (shipping costs decreases the more cans purchased)

NOTE: all final prices depend on the amount of cans bought, price of gas at the moment of shipping, and the area where it is being shipped.

Residential Poly Carts and Cans WITH screw on lids

	Company	Contact Info	Size	Minimum order	Price *per* container without shipping	Shipping* *To Tallahassee, FL	Estimated Cost per Container [b]
	DAWG, Inc. (SETON)	25 Lassy Court Terryville, CT 06786 Phone: 800-935-3294 bgalvin@dawginc.com http://www.dawginc.com	20 gallon	1	$47.29	$18.45	$65.74
			30 gallon	1	$77.46	$18.45	$95.91
	BEARicuda Bins	Phone: 877-232-7428 Fax: 860-540-0611 kevin@bearicuda.com http://www.bearicuda.com	50 gallon	1	$299 (for 1-5 cans) $289 (for 6+ cans)	$70-75 [c]	$369 (for 1-5 cans) $359 (for 6+ cans)
			95 gallon	1	$315 (for 1-5 cans) $299 (for 6+ cans)	$70-75 [c]	$385 (for 1-5 cans) $369 (for 6+ cans)

[b] The " Estimated Cost per Container" column is showing = amount for shipping divided by (÷) the minimum amount that has to be purchased plus (+) the price per container. Therefore, it is showing the cost of *one* can.

→ Each company has their own minimum order of cans that has to be purchased. Hence, the price provided in the last column is NOT the total cost of the full order.

NOTE: all final prices depend on the amount of cans bought, price of gas at the moment of shipping, and the area where it is being shipped.

Other Recreational / Residential Trash Storage Containers

See the following companies (listed above) for more options: BearSaver, Bear Proof Inc., BEARicuda Bins

*For shipping costs contact the corresponding company

	Company	Contact Info/ Testing Status	Description	Size	Price *per* container without shipping
	BearGuard	P.O. Box 89 Tahoe City, CA 96145 Phone/Fax: 530-581-2211 sales@bearguardinfo.com http://www.bearguardinfo.com Passed IGBTP [a]	Metal trashcan enclosure – internal lock with key *closed for the winter months	**Classic (Model-330)** Holds two 32-gallon round cans OR three 30-gallon trash cans	$1,099
				Traditional (Model-230) Holds one 32-gallon plus one 30-gallon trash can	$999
				New (Model LC-232) Holds two 30-gallon trash cans	$849
	Haul-All Equipment Ltd.	1-888-428-5255 Fax: 403-328-9956 sales@haulall.com http://www.haulall.com/contain.htm Passed IGBTP [a]	Metal trashcan enclosure with automatic latching door	**Hid-A-Can Waste Enclosure** Holds two 36-gallon round trash cans	$975 Standard $1,203 Bear-tight: (includes concrete pads, pre-mounted)
	Smoky Metal Works	1014 Old Knoxville Hwy Sevierville, TN 37862 965-908-4248 sam@smokymetalworks.com www.smokymetalworks.com	Wire mesh metal - trashcan enclosure *with* clip or lock on door	Holds two 32-gallon trash cans	$375

[a] Product has passed the Interagency Grizzly Bear Committee Testing Program (IGBTP) with captive bears at the Living with Wildlife Foundation

Animal Resistant Dumpsters

There are many more companies who sell animal resistant dumpsters, this is just a sample.
All companies listed passed the Interagency Grizzly Bear Committee Testing Program with captive bears at the Living with Wildlife Foundation.
For shipping costs, please contact the corresponding company.

	Company	Contact Info/ Testing Status	Description	Design	Price *per* container without shipping
	Capital Industries, Inc.	5801 Third Avenue South Seattle, WA 98108 1-800-967-8585 / 206-762-8585 Fax: 206-762-5455 sales@capitalind.com http://www.capitalind.com/main/	Metal Containers & Lids	Various - 2, 4, and 6 cubic yard	contact company for pricing
	Haul-All Equipment Ltd.	1-888-428-5255 Fax: 403-328-9956 sales@haulall.com http://www.haulall.com/contain.htm	Metal Containers & Lids	Various - 2, 4, and 6 cubic yard	contact company for pricing

	Company	Contact Info/ Testing Status	Description	Design	Price *per* container without shipping
	Robertson Enterprises	Robertson Enterprises P.O. Box 1711 Cody, WY 82414 307-587-2925 ext:12 http://robertsonenterprises.net/	Metal Containers & Lids	Various - 2, 4, and 6 cubic yard	contact company for pricing
	Colorado Correctional Industries	2862 S. Circle Dr. Colorado Springs, CO 80906 1-800-685-7891 http://www.coloradoci.com	Metal Containers & Lids	Various - 2, 4, and 6 cubic yard	contact company for pricing
	Jamestown Advanced	Jamestown Advanced Products Co. 2855 Girts Rd. Jamestown, NY 14701 1-800-452-0639 http://www.jamestownadvanced.com/	Metal Containers & Lids	Various - 2, 4, and 6 cubic yard	contact company for pricing
	UltraTec Equipment Sales	7278 Justin Way Mentor, OH 44060 1-800-585-8723	Metal Containers & Lids	Various - 2, 4, and 6 cubic yard	contact company for pricing

APPENDIX H

AMERICAN ALLIGATOR INFORMATIONAL PAMPHLET

- Never feed alligators – it's dangerous and illegal. When fed, alligators can overcome their natural wariness and learn to associate people with food. When this happens, some of these alligators have to be removed and killed.

- Dispose of fish scraps in garbage cans at boat ramps and fish camps. Do not throw them into the water. Although you are not intentionally feeding alligators when you do this, the result can be the same.

- Seek immediate medical attention if you are bitten by an alligator. Alligator bites can result in serious infections.

- Observe and photograph alligators only from a distance. Remember, they're an important part of Florida's natural history as well as an integral component of aquatic ecosystems.

Tim Donovan, FWC

Call 866-FWC-GATOR (392-4286) to report nuisance alligators.

Janice Plain

To report nuisance alligators call **866-FWC-GATOR (866-392-4286).**

MyFWC.com/Alligator

REWARD
Report Fish & Wildlife Violations
1-888-404-3922

Printed on recycled content.

02/2012

A Guide to Living with **Alligators**

Jamie Feddersen

Florida Fish and Wildlife Conservation Commission
MyFWC.com

Lizabeth West, FWC

Do not swim outside of posted swimming areas or in waters that may be inhabited by alligators.

Living with Alligators

In Florida, the growing number of people living and recreating near water has led to a steady rise in the number of alligator-related complaints. The majority of these complaints relate to alligators being where they simply aren't wanted. Because of these complaints, the Florida Fish and Wildlife Conservation Commission's Statewide Nuisance Alligator Program permits the killing of approximately 7,000 nuisance alligators each year. Using this approach, and through increased public awareness, the rate of alligator bites on people has remained constant despite the increased potential for alligator-human interactions as Florida's human population has grown.

Alligators are an important part of Florida's landscape and play a valuable role in the ecology of our state's wetlands. Alligators are predators and help keep other aquatic animal populations in balance. A better understanding of the facts and information presented in this brochure will help ensure that people and alligators can continue to coexist.

Visit MyFWC.com/Gators for more information about alligators and the latest nuisance alligator program statistics.

Tim Donovan, FWC

Alligators and People

Alligators are a fundamental part of Florida's wetlands, swamps, rivers and lakes, and they are found in all 67 counties. Florida continues to experience human population growth. Many new residents seek waterfront homes, resulting in increased interactions between people and alligators.

Although most Floridians understand that we have alligators living in our state, the potential for conflict exists. Because of their predatory nature, alligators may target pets and livestock as prey. Unfortunately, people also are occasionally bitten. Since 1948, Florida has averaged about five unprovoked bites per year. During that period, a little more than 300 unprovoked bites to people have been documented in Florida, with 22 resulting in deaths.

In the past 10 years, the Florida Fish and Wildlife Conservation Commission has received an average of nearly 16,000 alligator-related complaints per year. Most of these complaints deal with alligators occurring in places such as backyard ponds, canals, ditches and streams, but other conflicts occur when alligators wander into garages, swimming pools and golf course ponds. Sometimes, alligators come out of the water to bask in the sun or move between wetlands. In many cases, if left alone, these alligators will eventually move on to areas away from people.

Safety Tips

- Generally, alligators less than four feet in length are not large enough to be dangerous unless handled. However, if you encounter any alligator that you believe poses a threat to people, pets or property, call the Nuisance Alligator Hotline at 866-FWC-GATOR (866-392-4286). Please be aware, nuisance alligators are killed, not relocated.

- Be aware of the possibility of alligators when you are in or near fresh or brackish water. Bites may occur when people do not pay close enough attention to their surroundings when working or recreating near water.

- Do not swim outside of posted swimming areas or in waters that might be inhabited by large alligators.

- Alligators are most active between dusk and dawn. Therefore, avoid swimming at night.

- Dogs and cats are similar in size to the natural prey of alligators. Don't allow pets to swim, exercise or drink in or near waters that may contain alligators. Dogs often attract an alligator's interest, so do not swim with your dog.

- Leave alligators alone. State law prohibits killing, harassing or possessing alligators. Handling even small alligators can result in injury.

Tim Donovan, FWC

A young alligator wanders onto a porch in a residential neighborhood.

APPENDIX I

EASTERN INDIGO SNAKE
INFORMATIONAL PAMPHLET

Killing, harming, or harassing indigo snakes is strictly prohibited and punishable under State and Federal Law.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

LEGAL STATUS: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

August 12, 2013

ATTENTION:

THREATENED EASTERN INDIGO SNAKES MAY BE PRESENT ON THIS SITE!!!

Please read the following information provided by the U.S. Fish and Wildlife Service to become familiar with standard protection measures for the eastern indigo snake.

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site without interference.
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, **and** the appropriate U.S. Fish and Wildlife Service (USFWS) office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida ES Office – (904) 731-3336
Panama City ES Office – (850) 769-0552
South Florida ES Office – (772) 562-3909

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

APPENDIX J

WADING BIRD
INFORMATIONAL PAMPHLET

Action to be taken if you observe someone harassing a wading bird:

Promptly notify the FWCC 1-888-404-FWCC

Tips for living with wading birds

- Do not feed wading birds.
- Keep out of vegetated areas surrounding lakes and marshes.
- Keep pets leashed to avoid coming into contact with wading birds.
- Properly dispose of fishing line to avoid bird entanglement.

Prepared By:

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

13620 Metropolis Avenue, Suite 200
Fort Myers, Florida 33912
(239) 274-0067

WADING BIRD INFORMATIONAL PAMPHLET

Rural Lands West

Description:

Wading birds are a diverse group of birds which utilize shallow marsh areas as foraging and breeding habitats. They are typically characterized as having long necks, legs and bills, which allows them to feed in shallow water. Wading birds can be found in Florida year round. Examples of wading birds include: great egrets, great blue herons, white ibis', little blue herons and snowy egrets.

Habitat:

Wading birds inhabit all counties in the state of Florida and are most common in the shallow marsh or wetland areas throughout the state. They can also be found in both coastal and inland areas, salt marshes, swamps, ponds, drainage canals, and ditches. Wading birds breed and nest in colonies which consist of various species of other wading birds. Breeding generally occurs just prior to or during the wet season. Stick nests are built in trees or bushes near wetland areas and above the water line.

Wading birds feed in shallow water areas where prey is most concentrated. They feed by spearing prey with their bills or by straining small species out of the water and sediment. Prey may include small fish, invertebrates or other aquatic organisms. Wading birds have also been known to consume snakes, frogs and small rodents.

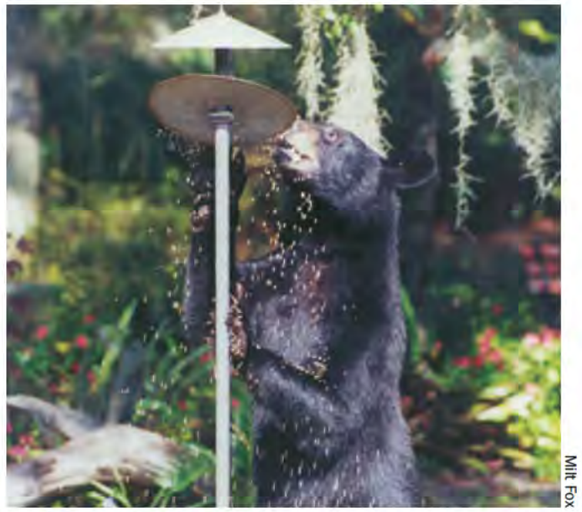
Protection:

Most wading birds are listed as species of special concern by the State of Florida. Some species such as wood storks are listed as endangered by both the State of Florida and the U.S. Fish and Wildlife Service. It is unlawful for anyone to disturb or take nests or eggs, feed, injure, harm, harass, or kill any wading birds species. Persons who knowingly violate the law may be subject to fines and/or jail time.

If wading birds form a nesting colony on the property in the future, avoid activities within 330 feet of the colony during the nesting season (March 1 to August 1).

APPENDIX K

FLORIDA BLACK BEAR INFORMATIONAL PAMPHLET



Milt Fox

Discouraging bears at home

Properly storing or securing residential garbage and other attractants is a proven method of discouraging bears and preventing bear problems around homes, farms and neighborhoods.

The following items attract bears and should be protected by an electric fence, wildlife resistant containers or stored in a secure place, such as a garage or sturdy shed:

- Trash and recycling containers
- Bird and squirrel feeders
- Game feeders
- Pet foods and bowls
- Barbeque grills and smokers
- Pets and small livestock
- Livestock feed
- Compost piles
- Beehives
- Fruit and nut-bearing trees and shrubs

Help conserve black bears by purchasing a Conserve Wildlife license plate at your local tax collector's office or online at BuyAPlate.com.

Secure common bear attractants

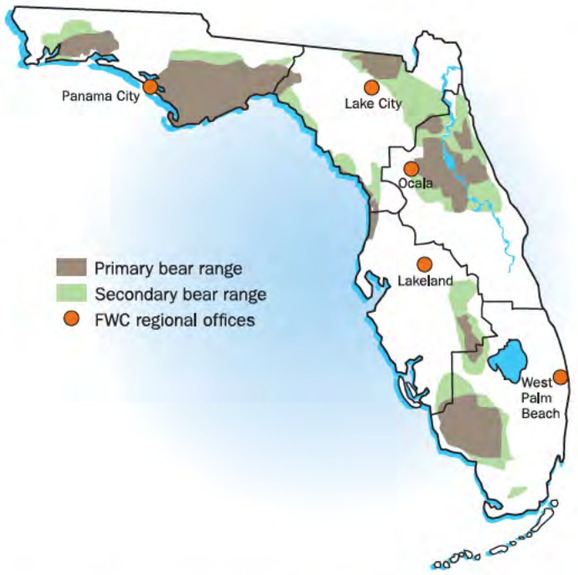
- Use electric fencing to protect gardens, compost piles, apiaries and livestock.
- Store garbage and recyclables in bear-resistant containers or in a secure area until morning of pick up.
- Feed pets indoors or bring food dishes inside before dark. Store pet and livestock feed in bear-resistant containers.
- Remove bird and wildlife feeders. Ensure the area is free of all seed, corn or other wild animal feed.
- Keep orchards and gardens tidy. Remove rotten fruit and harvest all nuts, fruits and vegetables when ripe.
- Clean meat smokers and barbeque grills with a degreasing detergent. Properly dispose of food remnants after each use.

Learn more about black bears with the Florida Black Bear Curriculum Guide. The guide is designed to educate teachers and students in grades 3-8 and offers a comprehensive series of lessons on Florida's black bear.

To learn more about black bears and for tips on how to reduce bear attractants, as well as instructions for electric fencing, suggestions for bear-resistant containers, information about the Conserve Wildlife license tag or the curriculum guide, visit MyFWC.com/bear.

Jessica Tice

Bear ranges in Florida



If you are experiencing bear problems, please contact the nearest FWC regional office.

North Central, Lake City	386-758-0525
Northeast, Ocala	352-732-1225
Northwest, Panama City	850-265-3676
South, West Palm Beach	561-625-5122
Southwest, Lakeland	863-648-3200

If you suspect illegal activity, call FWC's Wildlife Alert Hotline at 1-888-404-3922.

Cover photo by Ashley Hockenberry

Florida Fish and Wildlife Conservation Commission

MyFWC.com

printed on recycled paper

A guide to living in **bear country**

Florida Fish and Wildlife Conservation Commission

MyFWC.com

Ashley Hockenberry

If you live in Florida, you should know

Black bears are at a crossroads in the Sunshine State. Since the 1980s, Florida's bear population has been increasing in most areas of the state while the human population is rapidly expanding. As a result, bears and humans are encountering each other more than ever.

Calls to the Florida Fish and Wildlife Conservation Commission (FWC) about black bear and human encounters have increased from 1,000 in 2001 to over 2,500 in 2008. The most common calls refer to bear sightings and bears in garbage.

The mere presence of a black bear does not represent a problem. In fact, living in bear country can provide unique and rewarding experiences for residents.

However, when black bears have access to pet food, garbage, birdseed, livestock feed or other sources of food, they quickly learn to associate people with food. Bears often are fed by humans, either intentionally or unintentionally. Once they become more comfortable around people, that familiarity may become a problem for both people and bears. Those bears are often killed, either by vehicle collisions, illegal shooting or as a result of bear management actions.

People ask why problem bears can't simply be relocated to a "wilderness area where they won't bother anyone." Unfortunately, areas that are large and remote enough for bears to avoid people are rare in Florida. Relocated bears typically leave the new area, either to return to their original home or to leave an area already occupied by other bears. Some bears will wander through unfamiliar areas and cross busy roads, creating a danger to the bear and to motorists. In addition, bears that do remain in the relocation area often exhibit the same behavior, which just shifts the problem to a new location. As a result, relocation is not a desirable or effective solution to bear conflicts. Wildlife biologists can provide technical advice to residents who live in bear country to help them take actions that will discourage bears from becoming a problem. The FWC is committed to ensuring the long-term well-being of the black bear, while addressing the property damage and safety concerns of residents and visitors.

Charles Towne

Ashley Hockenberry

If a bear comes into your yard

If you encounter a bear at close range, remain standing upright, back up slowly and speak to the bear in a calm, assertive voice.

- Do not intentionally feed or attract bears. If a bear is eating something on your property, take note of what it is and secure it after the bear has left the area.
- Never approach or surprise a bear. Keep as much distance between you and the bear as possible.
- Make sure you are in a secure area, and the bear has a clear escape route to leave the area; then yell, bang pots and pans or use an air horn to scare the bear away.
- Do not turn your back, play dead, or run from the bear. Back away slowly into a house, car or building.
- Report any bear that is threatening the safety of humans, pets or livestock, or causing property damage, to the FWC (see back panel).

Climbing trees is a bear's natural escape route. If the bear climbs a tree, keep people and pets away. When things quiet down, the bear will come down the tree and leave. This usually happens after dark, when the bear feels safe.

It is illegal to intentionally place food or garbage out that attracts bears and causes conflicts. Anything that attracts dogs, cats or raccoons also will attract bears!

Did you know?

Black bears are shy animals and generally not agressive towards people. When a bear stands on its hind legs, it is merely trying to get a better view, rather than acting in a threatening way. A bear may huff, snap its jaws and swat the ground if it feels threatened.

Black bears might "bluff charge" when cornered, threatened or stealing food. Stand your ground and then slowly back away. Always respect bears – they are large and powerful wild animals.

The bear facts

Black bears are the only species of bear in Florida and they once roamed the state's entire 34.5 million acres.

- FWC biologists estimate there are 2,500-3,000 black bears in Florida.
- Florida bears are black with a brown muzzle and may have a white chest marking called a blaze.
- Adult black bears weigh 150-400 pounds; males are usually larger than females. The largest male bear on record in Florida weighed 624 pounds; the largest female weighed 342 pounds.
- Female bears have their first litter at about 3½ years of age and generally have one to three cubs every other year.
- In Florida the breeding season runs from June to August and cubs are born about seven months later, in late January or early February.
- Bears of all ages are excellent climbers and will climb trees when they are frightened.
- About 80 percent of a black bear's diet comes from plants (e.g., fruits, nuts, berries), 15 percent from insects and 5 percent from meat.

Ashley Hockenberry

APPENDIX L

FLORIDA PANTHER
INFORMATIONAL PAMPHLET

You live in Florida panther country

Florida panthers are reclusive and rarely seen by people. They normally live in remote, undeveloped areas. However, as the number of people in southern Florida grows, there is an increased chance of an encounter with a Florida panther.

This brochure contains some guidelines to help you live safely in Florida panther country.

Keep children within sight and close to you, especially outdoors between dusk and dawn.

If you feel threatened by a panther, or have lost pets or livestock to a panther, please call the Florida Fish and Wildlife Conservation Commission's Wildlife Alert Hotline at 1-888-404-FWCC (3922).

If you see a Florida panther

The Florida panther moves primarily at night. The chances of seeing a panther are slim. But if you live in Florida panther country, you need to know what to do if you see one.

- **Keep children within sight and close to you.** Pick up any small children so they don't panic and run. Try to do this without bending over or turning away from the Florida panther.
- **Give them space.** Florida panthers typically will avoid a confrontation. Give them a way to escape.
- **Do not run.** Running may stimulate a panther's instinct to chase. Stand and face the animal. Make eye contact to let the panther know you are aware of its presence.
- **Avoid crouching or bending over.** Squatting or bending makes you look smaller, resembling a prey-sized animal.
- **Appear larger.** Make gestures that indicate you are not prey and that you may be a danger to the panther. Raise your arms. Open your jacket. Throw stones, branches or whatever you can reach without crouching or turning your back. Wave your arms slowly and speak firmly in a loud voice.
- **Fight back if attacked.** There has never been a reported panther attack in Florida. In western states, where attacks by cougars have occurred very rarely, potential victims have fought back successfully with rocks, sticks, caps, jackets, garden tools and their bare hands. Since large cats usually try to bite the head or neck, try to remain standing and face the animal.

Mark Lotz

printed on recycled paper

Florida Fish and Wildlife Conservation Commission
620 S. Meridian Street
Tallahassee, FL 32399-1600
MyFWC.com/Panther

A guide to living with

Florida Panthers

© Lynn Stone

MyFWC.com/Panther

7 ways to live safely in Florida panther country

While these guidelines are meant to help you live safely in Florida panther habitat, they also apply to living with more commonly encountered wildlife, including raccoons, snakes, bears and alligators.

1. Be alert from dusk 'til dawn (and whenever deer are active)
Florida panthers primarily are active at night. Exercise more caution at dawn, dusk or dark.

2. Keep panther prey away
Deer, raccoons, rabbits, armadillos and wild hogs are prey for the Florida panther. By feeding deer or other wildlife, people inadvertently may attract panthers. Do not leave potential wildlife food outside, such as unsecured garbage or pet food. Consider fencing vegetable gardens.

3. Keep pets secure
Free-roaming pets, or pets that are tethered and unfenced, are easy prey for predators, including panthers. Bring pets inside or keep them in a secure and covered kennel at night. Feeding pets outside also may attract raccoons and other panther prey; do not leave uneaten pet food available to wildlife.

Keep your pets safe and secure. Bring pets inside or keep them in a secure and covered kennel at night.

Keep livestock safe and secure.

4. Keep domestic livestock secure
Where practical, place chickens, goats, hogs or other livestock in enclosed structures at night. Electric fencing can be an effective predator deterrent.

5. Landscape for safety
Remove dense or low-lying vegetation that would provide hiding places for panthers and other predatory animals near your house.

- Remove plants that deer like to eat.
- Choose plants that do not attract deer or other panther prey species. For information on plants that deer do not like to eat, visit edis.ifas.ufl.edu/UW137.
- Appropriate fencing will make your yard or play area uninviting to prey animals such as deer.

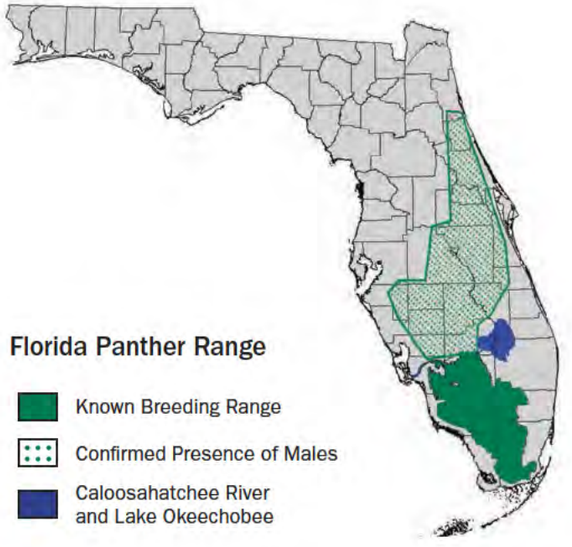
6. Consider other deterrents
Outdoor lighting, motion sensors and electric fencing also may deter prey animals and panthers from entering your yard. Outdoor lighting also will make approaching prey and panthers more visible to you.

7. Hike or bike with a friend
When recreating outdoors, it's a good practice to let friends or family know your whereabouts and when you expect to return. Better yet, take a friend with you!

Florida panther facts

- The Florida panther is a subspecies of puma, also known as a mountain lion or cougar. It is the last subspecies still surviving in the eastern United States.
- Biologists estimate roughly 100-160 adult and subadult Florida panthers remain in the wild. Most panthers live in southwest Florida, south of the Caloosahatchee River, although some panthers have been documented traveling as far north as central Georgia.
- The Florida panther's decline occurred prior to 1950, when it still was legal to hunt panthers. It was listed as endangered in 1967 and is protected under federal and state laws.
- Florida panther numbers declined to roughly 30 cats by the early 1980s. Severe inbreeding resulted in many health and physical problems. A genetic restoration project in 1995 was successful in improving the genetic health and vigor of the panther population.
- Florida panthers are found primarily in the Big Cypress/Everglades ecosystem in Collier, Lee, Hendry, Monroe and Miami-Dade counties.
- Florida panthers' home range sizes vary by sex and by individual. Female home ranges are typically 60-75 square miles whereas males' are typically 160-200 square miles.
- There is no record of a Florida panther attacking a person. Florida panthers are rarely seen.
- The biggest threat to the future of the Florida panther is habitat loss. A number of panthers also die each year due to vehicle strikes on roadways.
- The Florida panther was chosen as the State Animal of Florida in 1982 by a vote of elementary school students throughout the state.

FWC panther team



flickr

This brochure was produced through a partnership of the Audubon Society of Florida, Conservancy of Southwest Florida, Defenders of Wildlife, Florida Fish and Wildlife Conservation Commission, Florida Wildlife Federation, Friends of the Florida Panther Refuge, Mountain Lion Foundation, National Park Service, National Wildlife Federation, Seminole Tribe of Florida, University of Florida and the U.S. Fish and Wildlife Service.

Funding provided by the Florida Fish and Wildlife Conservation Commission, Friends of the Florida Panther Refuge and the National Fish and Wildlife Foundation.

EXHIBIT 5

AERIAL WITH EXISTING AND PROPOSED SSAs

N
W
E
S

82

SSA 16

LAKE TRAFFORD RD

Lake Trafford

SSA 14

846

29

SSA 15

OIL WELL GRADE RD

CAMP KEAIS RD

SSA 17

858

OIL WELL RD

RURAL LANDS WEST

LEGEND

- RURAL LANDS WEST
- RLSA
- EXISTING COLLIER COUNTY SSAs
- PROPOSED COLLIER COUNTY SSAs

0 1 2

Miles

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED FROM THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE AND WERE FLOWN DECEMBER 2015 TO FEBRUARY 2016.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

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DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST
AERIAL WITH EXISTING AND PROPOSED SSAs

DRAWING No. 05CEM1481

SHEET No. EXHIBIT 5

EXHIBIT 6

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac.±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac.±
210	CROPLAND AND PASTURELAND	758.92 Ac.±
211	IMPROVED PASTURE	7.40 Ac.±
212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
262	LOW PASTURE, HYDRIC	43.36 Ac.±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac.±
422	BRAZILIAN PEPPER	42.76 Ac.±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	93.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac.±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	56.77 Ac.±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac.±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
6299 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.69 Ac.±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac.±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac.±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	9.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac.±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac.±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac.±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac.±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05cem1481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016\Exhibits\CAD\Ex 6 Aerial with COE FLUCFCS and Wetlands Map 022217.dwg Tab: Northwest Jun 21, 2017 - 10:24am Plotted By: Feupel

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

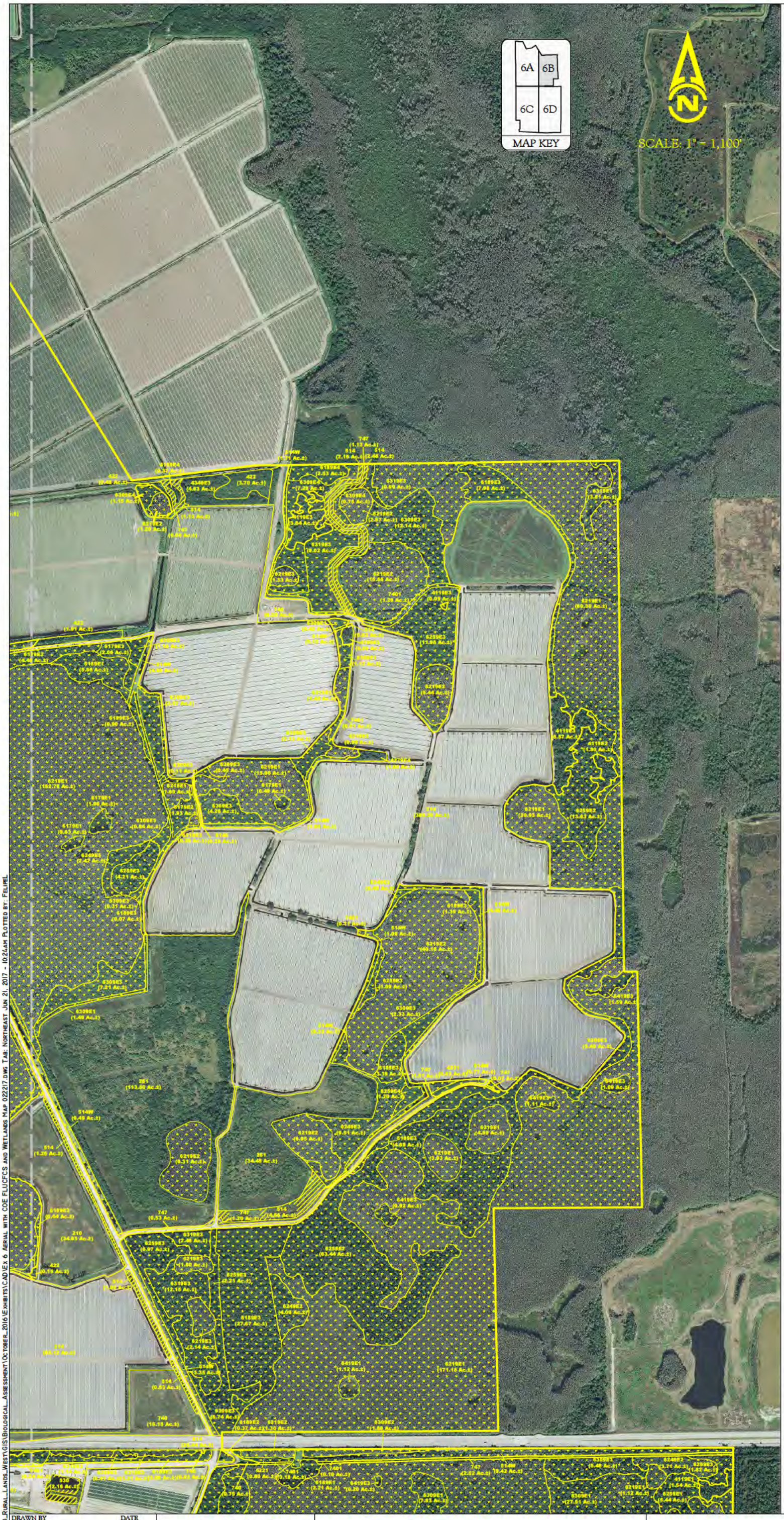
Passarella & Associates, Inc.
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. EXHIBIT 6A



LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac.±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac.±
210	CROPLAND AND PASTURELAND	758.92 Ac.±
211	IMPROVED PASTURE	7.40 Ac.±
212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
262	LOW PASTURE, HYDRIC	43.36 Ac.±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac.±
422	BRAZILIAN PEPPER	42.76 Ac.±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4299 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	93.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac.±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac.±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac.±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
6299 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.69 Ac.±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac.±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac.±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac.±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac.±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac.±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac.±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

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FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\12005\05CEM\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESMENT\OCTOBER_2016\EXHIBITS\CAD\EX 6 AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: NORTHEAST JUN 21, 2017 - 10:24AM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

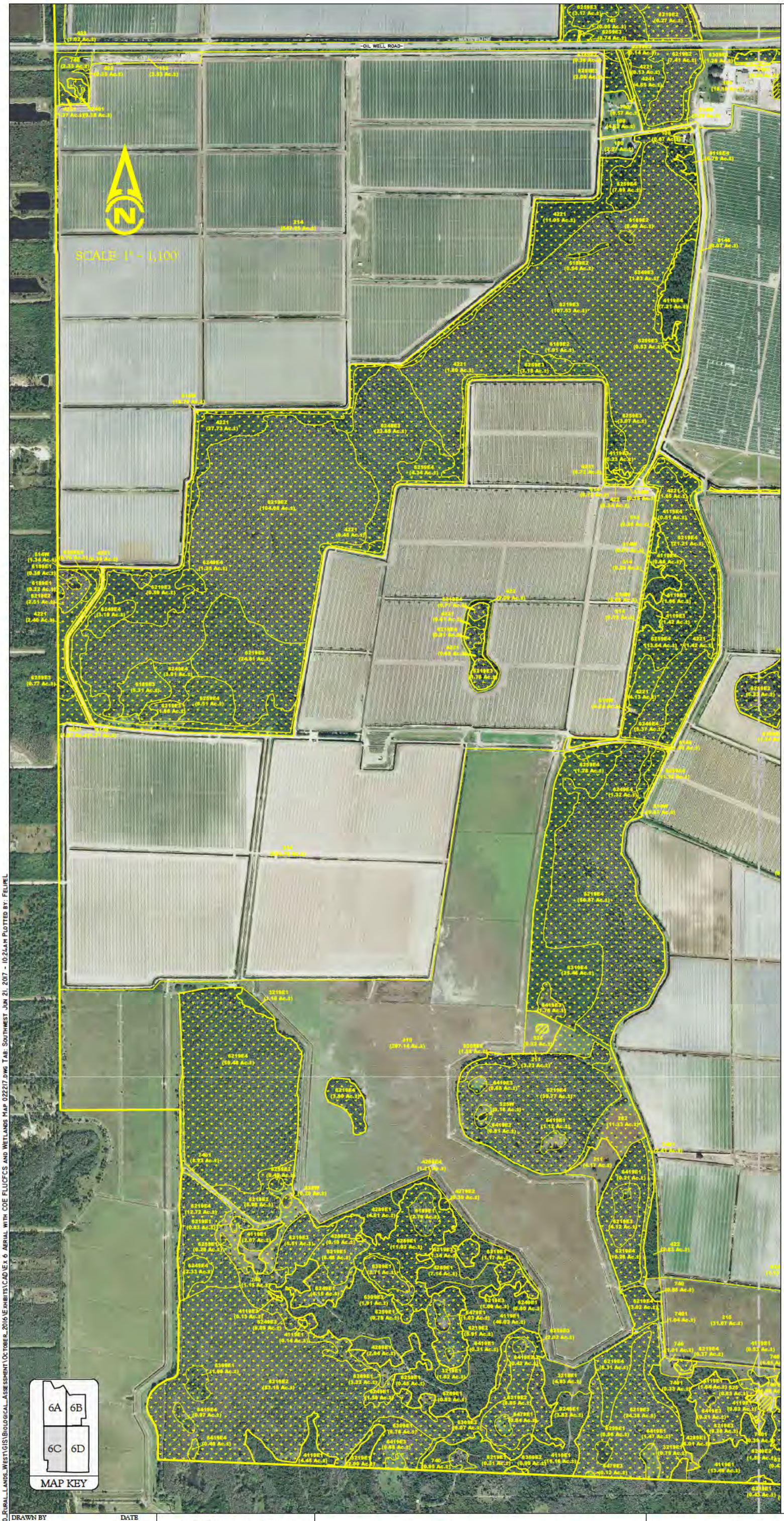
PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. EXHIBIT 6B



LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

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4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
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6299 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
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740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\12005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\CAD\EX 6 AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHWEST JUN 21, 2017 - 10:24AM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/26/16
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H.P.	7/26/16
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PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. EXHIBIT 6C

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac.±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac.±
210	CROPLAND AND PASTURELAND	758.92 Ac.±
211	IMPROVED PASTURE	7.40 Ac.±
212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
262	LOW PASTURE, HYDRIC	43.36 Ac.±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac.±
422	BRAZILIAN PEPPER	42.76 Ac.±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4299 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac.±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac.±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac.±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.69 Ac.±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac.±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac.±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac.±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac.±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac.±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac.±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

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J:\12005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\CAD\EX 6 AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHEAST JUN 21, 2017 - 10:23AM PLOTTED BY: FELIPEL

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RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. EXHIBIT 6D

EXHIBIT 7

FLUCFCS ACREAGES AND DESCRIPTIONS FOR RURAL LANDS WEST

RURAL LANDS WEST
FLUCFCS ACREAGES AND DESCRIPTIONS

Revised January 2017

Table 1 summarizes the Florida, Land Use, Cover and Forms Classification System (FLUCFCS) acreages for Rural Lands West. A brief description of each of the FLUCFCS classifications follows.

Table 1. FLUCFCS Acreages and Descriptions

FLUCFCS Code	Description	Acreage
100	Residential	7.46
155	Light Industrial (Agriculture Operations)	21.72
210	Cropland and Pastureland	758.92
211	Improved Pasture	7.40
212	Unimproved Pasture	37.35
214	Row Crops	4,174.76
260	Rural Open Land	33.27
261	Fallow Cropland	184.74
262	Low Pasture, Hydric	43.36
3219 E1	Palmetto Prairie, Disturbed (0-24% Exotics)	21.30
4119 E1	Pine Flatwoods, Disturbed (0-24% Exotics)	176.10
4119 E2	Pine Flatwoods, Disturbed (25-49% Exotics)	29.43
4119 E3	Pine Flatwoods, Disturbed (50-75% Exotics)	49.19
4119 E4	Pine Flatwoods, Disturbed (76-100% Exotics)	12.27
4199 E3	Other Pine, Disturbed (50-75% Exotics)	11.14
4199 E4	Other Pine, Disturbed (76-100% Exotics)	0.37
422	Brazilian Pepper	42.76
4221	Brazilian Pepper, Hydric	80.94
424	Melaleuca	0.83
4241	Melaleuca, Hydric	5.88
4279 E2	Live Oak, Disturbed (25-49% Exotics)	0.30
4279 E4	Live Oak, Disturbed (76-100% Exotics)	1.00
4289 E1	Cabbage Palm, Disturbed (0-24% Exotics)	21.02
4289 E2	Cabbage Palm, Disturbed (25-49% Exotics)	0.34
4289 E4	Cabbage Palm, Disturbed (76-100% Exotics)	1.21
4349 E1	Mixed Hardwood-Conifer, Disturbed (0-24% Exotics)	6.63
4349 E2	Mixed Hardwood-Conifer, Disturbed (25-49% Exotics)	2.57
4349 E3	Mixed Hardwood-Conifer, Disturbed (50-75% Exotics)	5.50
514	Ditch	30.20
514W	Ditch, Wetland	83.77
525	Cattle Pond	1.89
525W	Cattle Pond, Wetland	1.25

Table 1. (Continued)

FLUCFCS Code	Description	Acreage
530	Reservoir	2.16
6179 E1	Mixed Wetland Hardwoods, Disturbed (0-24% Exotics)	21.31
6179 E2	Mixed Wetland Hardwoods, Disturbed (25-49% Exotics)	9.27
6179 E3	Mixed Wetland Hardwoods, Disturbed (50-75% Exotics)	3.16
6189 E1	Willow, Disturbed (0-24% Exotics)	83.10
6189 E2	Willow, Disturbed (25-49% Exotics)	34.17
6189 E3	Willow, Disturbed (50-75% Exotics)	77.45
6189 E4	Willow, Disturbed (76-100% Exotics)	35.35
6219 E1	Cypress, Disturbed (0-24% Exotics)	1,834.44
6219 E2	Cypress, Disturbed (25-49% Exotics)	537.70
6219 E3	Cypress, Disturbed (50-75% Exotics)	361.11
6219 E4	Cypress, Disturbed (76-100% Exotics)	288.86
6249 E1	Cypress/Pine/Cabbage Palm, Disturbed (0-24% Exotics)	61.64
6249 E2	Cypress/Pine/Cabbage Palm, Disturbed (25-49% Exotics)	46.86
6249 E3	Cypress/Pine/Cabbage Palm, Disturbed (50-75% Exotics)	75.60
6249 E4	Cypress/Pine/Cabbage Palm, Disturbed (76-100% Exotics)	22.00
6259 E1	Hydric Pine, Disturbed (0-24% Exotics)	25.64
6259 E2	Hydric Pine, Disturbed (25-49% Exotics)	129.68
6259 E3	Hydric Pine, Disturbed (50-75% Exotics)	127.36
6259 E4	Hydric Pine, Disturbed (76-100% Exotics)	58.77
6289 E1	Hydric Cabbage Palm, Disturbed (0-24% Exotics)	15.96
6289 E2	Hydric Cabbage Palm, Disturbed (25-49% Exotics)	1.98
6289 E3	Hydric Cabbage Palm, Disturbed (50-75% Exotics)	1.23
6299 E1	Hydric Oak Hammock, Disturbed (0-24% Exotics)	0.86
6309 E1	Mixed Wetland Hardwood-Conifer, Disturbed (0-24% Exotics)	62.94
6309 E2	Mixed Wetland Hardwood-Conifer, Disturbed (25-49% Exotics)	31.89
6309 E3	Mixed Wetland Hardwood-Conifer, Disturbed (50-75% Exotics)	108.43
6309 E4	Mixed Wetland Hardwood-Conifer, Disturbed (76-100% Exotics)	21.40
6319 E1	Wetland Shrub, Disturbed (0-24% Exotics)	3.81
6319 E2	Wetland Shrub, Disturbed (25-49% Exotics)	8.63
6319 E3	Wetland Shrub, Disturbed (50-75% Exotics)	85.67
6319 E4	Wetland Shrub, Disturbed (76-100% Exotics)	29.90
6419 E1	Freshwater Marsh, Disturbed (0-24% Exotics)	16.29
6419 E2	Freshwater Marsh, Disturbed (25-49% Exotics)	5.73
6419 E3	Freshwater Marsh, Disturbed (50-75% Exotics)	12.23
6419 E4	Freshwater Marsh, Disturbed (76-100% Exotics)	3.47
6439 E2	Wet Prairie, Disturbed (25-49% Exotics)	1.71
6479 E1	Pond Apple Marsh, Disturbed (0-24% Exotics)	1.87
6479 E3	Pond Apple Marsh, Disturbed (50-75% Exotics)	0.12
740	Disturbed Land	38.81
7401	Disturbed Land, Hydric	27.87

Table 1. (Continued)

FLUCFCS Code	Description	Acreage
743	Spoil	0.48
747	Berm	16.69
814	Road	26.44
8146	Unpaved Road	49.72
TOTAL		**10,264.63**

Residential (FLUCFCS Code 100)
Areas of low density residential land use, typically mobile homes.

Light Industrial (Agriculture Operations) (FLUCFCS Code 155)
Areas occupied by offices and warehouses used for produce packaging, equipment storage, and other support for agricultural operations.

Cropland and Pastureland (FLUCFCS Code 210)
Agricultural lands used in rotation for row crops and grazing cattle. At the time of mapping, these areas were planted and maintained for cattle, but rows in the landscape were apparent and there was possibility of planting row crops in the future. The canopy vegetation, if any, may include scattered cabbage palm (*Sabal palmetto*) and occasional live oak (*Quercus virginiana*) and/or slash pine (*Pinus elliottii*). The sub-canopy may contain scattered Brazilian pepper (*Melaleuca quinquenervia*) and cabbage palm. The dominant ground cover species include bahiagrass (*Paspalum notatum*), smutgrass (*Sporobolus indicus*), wax myrtle (*Myrica cerifera*), dog fennel (*Eupatorium capilifolium*), broomgrass (*Andropogon virginicus*), crowfoot grass (*Dactyloctenium aegyptium*), frog-fruit (*Phyla nodiflora*), blackberry (*Rubus* spp.), shrubby false buttonweed (*Spermacoce verticillata*), and tropical soda apple (*Solanum viarum*).

Improved Pasture (FLUCFCS Code 211)
Upland areas used for cattle grazing. The canopy of these areas is open although some pastures may contain widely scattered slash pine, cabbage palm, and/or live oak. The sub-canopy is generally open with scattered Brazilian pepper and cabbage palm. The ground cover is dominated by bahiagrass, Bermuda grass (*Cynodon dactylon*), and carpetgrass (*Axonopus* spp.), and may include smutgrass, dog fennel, broomgrass, flat-top goldenrod (*Euthamia minor*), tropical soda apple, and occasional pawpaw (*Asimina reticulata*), and/or saw palmetto (*Serenoa repens*).

Unimproved Pasture (FLUCFCS Code 212)
Upland areas used for cattle grazing. These areas have more canopy and sub-canopy vegetation than FLUCFCS Code 211. The canopy is open with scattered slash pine, cabbage palm, and/or live oak. The sub-canopy contains scattered Brazilian pepper and cabbage palm. The ground cover consists of bahiagrass, Bermuda grass, carpetgrass, smutgrass, dog fennel, saw palmetto, broomgrass, flat-top goldenrod, and tropical soda apple.

Row Crops (FLUCFCS Code 214)
Areas used for production of crops, including tomatoes and potatoes. Included in this FLUCFCS code are the perimeter ditches and berms adjacent to the crop fields.

Rural Open Land (FLUCFCS Code 260)
Upland areas used for various, often undefined, agricultural uses that may include structures used for storage of farm equipment and supplies. The canopy and sub-canopy vegetation may include scattered slash pine, live oak, cabbage palm, and Brazilian pepper. The dominant ground cover includes bahiagrass, smutgrass, carpetgrass, dog fennel, wax myrtle, fingergrass (*Eustachys petrea*), foxtail grass (*Setaria geniculata*), white beggar-ticks (*Bidens alba*), broomgrass, caesarweed (*Urena lobata*), and scattered saw palmetto.

Fallow Cropland (FLUCFCS Code 261)
These areas have been planted with row crops in the past; however, the fields have been out of crop rotation and have become overgrown with predominantly wetland vegetative species. The canopy typically consists of cabbage palm and occasional slash pine. The sub-canopy vegetation includes Brazilian pepper and Carolina willow (*Salix caroliniana*). The dominant ground cover species are primrose willow (*Ludwigia peruviana*), paragrass (*Urochloa mutica*), rattle-bush (*Sesbania herbacea*), saltbush (*Baccharis halimifolia*), wax myrtle, red-top panicum (*Panicum rigidulum*), torpedograss (*Panicum repens*), smartweed (*Polygonum* spp.), bahiagrass, and dog fennel.

Low Pasture, Hydric (FLUCFCS Code 262)
These areas are used for cattle grazing. The canopy and sub-canopy are typically open. Ground cover vegetation includes bahiagrass, carpetgrass, smartweed, dog fennel, bushy broomgrass (*Andropogon glomeratus*), torpedograss, Nuttall's thistle (*Cirsium nuttallii*), flat-top goldenrod, and Asiatic pennywort (*Centella asiatica*).

Palmetto Prairie, Disturbed (0-24% Exotics) (FLUCFCS Code 3219 E1)
The canopy of this upland habitat is open with occasional slash pine, live oak, and/or cabbage palm. The sub-canopy is typically open with scattered slash pine, cabbage palm, and/or Brazilian pepper. The ground cover is dominated by saw palmetto and includes any combination of the following: gallbery (*Ilex glabra*), saltbush, wax myrtle, winged sumac (*Rhus copallinum*), rusty lyonia (*Lyonia ferruginea*), broomgrass, wiregrass (*Aristida stricta*), dwarf live oak (*Quercus minima*), rose natal grass (*Melinis repens*), muscadine grapevine (*Vitis rotundifolia*), pennyroyal (*Piloblephis rigida*), and/or caesarweed.

Pine Flatwoods, Disturbed (0-24% Exotics) (FLUCFCS Code 4119 E1)
The canopy vegetation consists of slash pine and scattered cabbage palm. The sub-canopy includes slash pine, scattered cabbage palm, live oak, Brazilian pepper, and/or melaleuca (*Melaleuca quinquenervia*). The ground cover is dominated by saw palmetto and includes wax myrtle, gallberry, wiregrass, broomgrass, beautyberry (*Callicarpa americana*), greenbrier (*Smilax* spp.), muscadine grapevine, dog fennel, pennyroyal, and caesarweed.

Pine Flatwoods, Disturbed (25-49% Exotics) (FLUCFCS Code 4119 E2)
The vegetation associations are similar to FLUCFCS Code 4119 E1, except with 25 to 49 percent coverage by exotic species.

Pine Flatwoods, Disturbed (50-75% Exotics) (FLUCFCS Code 4119 E3)
The vegetation associations are similar to FLUCFCS Code 4119 E2, except with 50 to 75 percent coverage by exotic species.

Pine Flatwoods, Disturbed (76-100% Exotics) (FLUCFCS Code 4119 E4)
The vegetation associations are similar to FLUCFCS Code 4119 E3, except with 76 to 100 percent coverage by exotic species.

Other Pine, Disturbed (50-75% Exotics) (FLUCFCS Code 4199 E3)
The canopy of this upland habitat is dominated by slash pine. The sub-canopy contains slash pine, cabbage palm, and scattered Brazilian pepper and/or melaleuca. The ground cover vegetation includes wax myrtle, broomgrass, flat-top goldenrod, bahiagrass, smutgrass, beautyberry, cabbage palm, and caesarweed.

Other Pine, Disturbed (76-100% Exotics) (FLUCFCS Code 4199 E4)
The vegetation associations are similar to FLUCFCS Code 4199 E3, except with 76 to 100 percent coverage by exotic species.

Brazilian Pepper (FLUCFCS Code 422)
The canopy and sub-canopy vegetation is dominated by Brazilian pepper. The sub-canopy may also contain guava (*Psidium* spp.). Ground cover vegetation is mostly absent, but may include sparse and scattered caeasarweed, dog fennel, and/or smutgrass.

Brazilian Pepper, Hydric (FLUCFCS Code 4221)
The canopy and sub-canopy is dominated by Brazilian pepper. The sub-canopy may also contain guava and/or primrose willow. Ground cover vegetation is mostly absent, but may include scattered paragrass, dog fennel, and/or Asiatic pennywort.

Melaleuca (FLUCFCS Code 424)
The canopy and sub-canopy vegetation is dominated by melaleuca. The sub-canopy may also contain Brazilian pepper. The ground cover consists of beaksedge (*Rhynchospora* spp.), torpedograss, dog fennel, caesarweed, and bushy broomgrass.

Melaleuca, Hydric (FLUCFCS Code 4241)
The canopy and sub-canopy vegetation is dominated by melaleuca. The sub-canopy may also contain Brazilian pepper. The ground cover consists of various wetland and transitional ground cover species including beaksedge, torpedograss, sawgrass (*Cladium jamaicense*), dog fennel, bushy broomgrass, and cattail (*Typha* spp.).

Live Oak, Disturbed (25-49% Exotics) (FLUCFCS Code 4279 E2)
The canopy is dominated by live oak and also typically includes laurel oak (*Quercus laurifolia*) and cabbage palm. The sub-canopy may contain live oak, laurel oak, myrsine (*Myrica cerifera*),

and Brazilian pepper. Typical ground cover species are saw palmetto, wax myrtle, beautyberry, wild coffee (*Psychotria nervosa*), caesarweed, greenbrier, and muscadine grapevine.

Live Oak, Disturbed (76-100% Exotics) (FLUCFCS Code 4279 E4)
The vegetation associations are similar to FLUCFCS Code 4279 E2, except with 76 to 100 percent coverage by exotic species.

Cabbage Palm, Disturbed (0-24% Exotics) (FLUCFCS Code 4289 E1)
The canopy is dominated by cabbage palm and may include occasional slash pine and strangler fig (*Ficus aurea*). The sub-canopy contains cabbage palm, myrsine, and Brazilian pepper. The ground cover vegetation typically consists of cabbage palm, saw palmetto, dog fennel, wild coffee, wiregrass, broomgrass, saltbush, and wax myrtle.

Cabbage Palm, Disturbed (25-49% Exotics) (FLUCFCS Code 4289 E2)
The vegetation associations are similar to FLUCFCS Code 4289 E1, except with 25 to 49 percent coverage by exotic species.

Cabbage Palm, Disturbed (76-100% Exotics) (FLUCFCS Code 4289 E4)
The vegetation associations are similar to FLUCFCS Code 4289 E2, except with 76 to 100 percent coverage by exotic species.

Mixed Hardwood-Conifer, Disturbed (0-24% Exotics) (FLUCFCS Code 4349 E1)
The canopy of this upland habitat consists of a combination of species including slash pine, laurel oak, live oak, cabbage palm, and occasional strangler fig. The sub-canopy contains live oak, laurel oak, myrsine, guava, and Brazilian pepper. The ground cover typically includes saw palmetto, wax myrtle, beautyberry, caesarweed, dog fennel, wild coffee, greenbrier, and muscadine grapevine.

Mixed Hardwood-Conifer, Disturbed (25-49% Exotics) (FLUCFCS Code 4349 E2)
The vegetation associations are similar to FLUCFCS Code 4349 E1, except with 25 to 49 percent coverage by exotic species.

Mixed Hardwood-Conifer, Disturbed (50-75% Exotics) (FLUCFCS Code 4349 E3)
The vegetation associations are similar to FLUCFCS Code 4349 E1, except with 50 to 75 percent coverage by exotic species.

Ditch (FLUCFCS Code 514)
The vegetation of ditches throughout the property varies. Typically, the canopy is open. The sub-canopy may contain Carolina willow and/or Brazilian pepper. The ground cover vegetation includes smartweed, pickerelweed (*Pontederia cordata*), paragrass, primrose willow, torpedograss, West Indian marsh grass (*Hymenachne amplexicaulis*), and red ludwigia (*Ludwigia repens*). The ditches often contain thick mats of floating aquatic vegetation including water hyancinths (*Eichhornia crassipes*) and water lettuce (*Pistia stratiotes*).

Ditch, Wetland (FLUCFCS Code 514W)
The vegetation composition of these areas is similar to FLUCFCS Code 514. These ditches are adjacent to wetlands and inside the jurisdictional wetland lines. The acreages are included in the total wetland acreages and not the "other surface water" (OSW) acreage.

Cattle Pond (FLUCFCS Code 525)
There is no canopy vegetation in these open water features. The sub-canopy may contain scattered Carolina willow and/or Brazilian pepper. Ground cover is typically absent around the edges of the ponds. If present, the ground cover may contain smartweed, West Indian marsh grass, torpedograss, and/or cattail.

Cattle Pond, Wetland (FLUCFCS Code 525W)
The vegetation composition of these areas is similar to FLUCFCS Code 525. These excavated ponds are adjacent to wetlands and inside the jurisdictional wetland lines. The acreages are included in the total wetland acreages and not the OSW acreage.

Reservoir (FLUCFCS Code 530)
There is no canopy vegetation in these open water features. The sub-canopy may contain scattered Carolina willow and/or Brazilian pepper. The ground cover around the edges of the reservoir typically consists of cattail and primrose willow.

Mixed Wetland Hardwoods, Disturbed (0-24% Exotics) (FLUCFCS Code 6179 E1)
The canopy consists of any combination of the following wetland hardwood species: red maple (*Acer rubrum*), pop ash (*Fraxinus caroliniana*), laurel oak, cabbage palm, swamp bay (*Persea palustris*), dahoon holly (*Ilex cassine*), and strangler fig. The canopy may also include scattered cypress (*Taxodium distichum*); however, hardwood species dominate the canopy stratum. The sub-canopy vegetation includes Carolina willow, pop ash, swamp bay, myrsine, and Brazilian pepper. The ground cover species typically include maidencane (*Panicum hemitomon*), sawgrass, arrowhead (*Saggitaria lancifolia*), wax myrtle, saltbush, buttonbush (*Cephalanthus occidentalis*), bog hemp (*Boehmeria cylindrica*), swamp fern (*Blechnum serrulatum*), Virginia chain fern (*Woodwardia virginica*), and/or primrose willow.

Mixed Wetland Hardwoods, Disturbed (25-49% Exotics) (FLUCFCS Code 6179 E2)
The vegetation associations are similar to FLUCFCS Code 6179 E1, except with 25 to 49 percent coverage by exotic species.

Mixed Wetland Hardwoods, Disturbed (50-75% Exotics) (FLUCFCS Code 6179 E3)
The vegetation associations are similar to FLUCFCS Code 6179 E2, except with 50 to 75 percent coverage by exotic species.

Willow, Disturbed (0-24% Exotics) (FLUCFCS Code 6189 E1)
The canopy and sub-canopy vegetation is dominated by Carolina willow with Brazilian pepper. Typical ground cover vegetation includes one, or a combination of, the following: wax myrtle, saltbush, primrose willow, sawgrass, cattail, bushy broomgrass, smartweed, maidencane, alligator flag (*Thalia geniculata*), pickerelweed, arrowhead, climbing hempvine (*Mikania scadens*), torpedograss, and/or paragrass.

Willow, Disturbed (25-49% Exotics) (FLUCFCS Code 6189 E2)
The vegetation associations are similar to FLUCFCS Code 6189 E1, except with 25 to 49 percent coverage by exotic species.

Willow, Disturbed (50-75% Exotics) (FLUCFCS Code 6189 E3)
The vegetation associations are similar to FLUCFCS Code 6189 E1, except with 50 to 75 percent coverage by exotic species.

Willow, Disturbed (76-100% Exotics) (FLUCFCS Code 6189 E4)
The vegetation associations are similar to FLUCFCS Code 6189 E1, except with 76 to 100 percent coverage by exotic species.

Cypress, Disturbed (0-24% Exotics) (FLUCFCS Code 6219 E1)
The canopy is dominated by cypress and may also include scattered red maple, pop ash, cabbage palm, and/or dahoon holly. The typical sub-canopy species are Carolina willow, pond apple (*Annona glabra*), pop ash, myrsine, swamp bay, and/or Brazilian pepper. Ground cover varies by location but usually includes a combination of the following species: maidencane, swamp fern, arrowhead, spikerush (*Eleocharis interstincta*), alligator flag, bog-hemp, buttonbush, royal fern (*Osmunda regalis*), leather fern (*Acrostichum danaeifolium*), horned beakrush (*Rhynchospora inundata*), corkwood (*Stillingia aquatica*), climbing hempvine, and/or primrose willow. In some locations, Japanese and Old World climbing fern (*Lygodium* spp.) are present.

Cypress, Disturbed (25-49% Exotics) (FLUCFCS Code 6219 E2)
The vegetation associations are similar to FLUCFCS Code 6219 E1, except with 25 to 49 percent coverage by exotic species.

Cypress, Disturbed (50-75% Exotics) (FLUCFCS Code 6219 E3)
The vegetation associations are similar to FLUCFCS Code 6219 E1, except with 50 to 75 percent coverage by exotic species.

Cypress, Disturbed (76-100% Exotics) (FLUCFCS Code 6219 E4)
The vegetation associations are similar to FLUCFCS Code 6219 E1, except with 76 to 100 percent coverage by exotic species.

Cypress/Pine/Cabbage Palm, Disturbed (0-24% Exotics) (FLUCFCS Code 6249 E1)
The canopy vegetation includes a combination of cypress, slash pine, and cabbage palm of which no one of these species is dominant. The canopy also may include occasional strangler fig and dahoon holly. The sub-canopy typically consists of cabbage palm, slash pine, cypress, myrsine, dahoon holly, strangler fig, and Brazilian pepper. Dominant ground cover species include swamp fern, wax myrtle, maidencane, sawgrass, corkwood, bog hemp, saltbush, and/or beakrush (*Rhynchospora* spp.).

Cypress/Pine/Cabbage Palm, Disturbed (25-49% Exotics) (FLUCFCS Code 6249 E2)
The vegetation associations are similar to FLUCFCS Code 6249 E1, except with 25 to 49 percent coverage by exotic species.

Cypress/Pine/Cabbage Palm, Disturbed (50-75% Exotics) (FLUCFCS Code 6249 E3)
The vegetation associations are similar to FLUCFCS Code 6249 E2, except with 50 to 75 percent coverage by exotic species.

Cypress/Pine/Cabbage Palm, Disturbed (76-100% Exotics) (FLUCFCS Code 6249 E4)
The vegetation associations are similar to FLUCFCS Code 6249 E3, except with 76 to 100 percent coverage by exotic species.

Hydric Pine, Disturbed (0-24% Exotics) (FLUCFCS Code 6259 E1)
The dominant canopy vegetation is slash pine with scattered cabbage palm. The sub-canopy may contain slash pine, cabbage palm, myrsine, and Brazilian pepper. The ground cover typically includes wax myrtle, swamp fern, sawgrass, saltbush, blue maidencane (*Amphicarpum muhlenbergianum*), torpedograss, cordgrass (*Spartina bakeri*), beakrush, musky mint (*Hyptis alata*), bog button (*Lachnocaulon* spp.), Asiatic pennywort, and occasional saw palmetto.

Hydric Pine, Disturbed (25-49% Exotics) (FLUCFCS Code 6259 E2)
The vegetation associations are similar to FLUCFCS Code 6259 E1, except with 25 to 49 percent coverage by exotic species.

Hydric Pine, Disturbed (50-75% Exotics) (FLUCFCS Code 6259 E3)
The vegetation associations are similar to FLUCFCS Code 6259 E2, except with 50 to 75 percent coverage by exotic species.

Hydric Pine, Disturbed (76-100% Exotics) (FLUCFCS Code 6259 E4)
The vegetation associations are similar to FLUCFCS Code 6259 E3, except with 76 to 100 percent coverage by exotic species.

Hydric Cabbage Palm, Disturbed (0-24% Exotics) (FLUCFCS Code 6289 E1)
The canopy consists predominantly of cabbage palm and may include occasional slash pine and laurel oak. The sub-canopy contains cabbage palm and Brazilian pepper. The ground cover vegetation includes wax myrtle, myrsine, saltbush, swamp fern, torpedograss, blue maidencane, cordgrass, sawgrass, frog-fruit, bushy broomgrass, and Asiatic pennywort.

Hydric Cabbage Palm, Disturbed (25-49% Exotics) (FLUCFCS Code 6289 E2)
The vegetation associations are similar to FLUCFCS Code 6289 E1, except with 25 to 49 percent coverage by exotic species.

Hydric Cabbage Palm, Disturbed (50-75% Exotics) (FLUCFCS Code 6289 E3)
The vegetation associations are similar to FLUCFCS Code 6289 E2, except with 50 to 75 percent coverage by exotic species.

Hydric Oak Hammock, Disturbed (0-24% Exotics) (FLUCFCS Code 6299 E1)
The canopy is dominated by laurel oak and also typically includes live oak and cabbage palm. The sub-canopy may contain laurel oak, live oak, myrsine, cabbage palm, and Brazilian pepper. Typical ground cover species are swamp fern, myrsine, wax myrtle, wild coffee, elderberry (*Sambucus canadensis*), greenbrier, and muscadine grapevine.

Wetland Mixed Hardwood-Conifer, Disturbed (0-24% Exotics) (FLUCFCS Code 6309 E1)
The canopy vegetation consists of wetland hardwood and conifer species, with neither dominating the stratum. The combination of species varies by location but typically includes Cypress or slash pine and one or more of the following hardwood species: laurel oak, red maple, dahoon holly, and/or cabbage palm. The sub-canopy species include cabbage palm, pond apple, myrsine, and Brazilian pepper. Ground cover vegetation varies by location and typically includes swamp fern, bog hemp, wax myrtle, maidencane, sawgrass, beakrush, and/or saltbush.

Wetland Mixed Hardwood Conifer, Disturbed (25-49% Exotics) (FLUCFCS Code 6309 E2)
The vegetation associations are similar to FLUCFCS Code 6309 E1, except with 25 to 49 percent coverage by exotic species.

Wetland Mixed Hardwood Conifer, Disturbed (50-75% Exotics) (FLUCFCS Code 6309 E3)
The vegetation associations are similar to FLUCFCS Code 6309 E1, except with 50 to 75 percent coverage by exotic species.

Wetland Mixed Hardwood Conifer, Disturbed (76-100% Exotics) (FLUCFCS Code 6309 E4)
The vegetation associations are similar to FLUCFCS Code 6309 E1, except with 76 to 100 percent coverage by exotic species.

Wetland Shrub, Disturbed (0-24% Exotics) (FLUCFCS Code 6319 E1)
The canopy vegetation, if present, consists of Carolina willow and/or cabbage palm. The sub-canopy typically consists of Carolina willow and Brazilian pepper. Typical ground cover vegetation includes wax myrtle, saltbush, primrose willow, sawgrass, cattail, bushy broomgrass, smartweed, maidencane, alligator flag, pickerelweed, arrowhead, torpedograss, climbing hempvine, and/or paragrass.

Wetland Shrub, Disturbed (25-49% Exotics) (FLUCFCS Code 6319 E2)
The vegetation associations are similar to FLUCFCS Code 6319 E1, except with 25 to 49 percent coverage by exotic species.

Wetland Shrub, Disturbed (50-75% Exotics) (FLUCFCS Code 6319 E3)
The vegetation associations are similar to FLUCFCS Code 6319 E2, except with 50 to 75 percent coverage by exotic species.

Wetland Shrub, Disturbed (76-100% Exotics) (FLUCFCS Code 6319 E4)
The vegetation associations are similar to FLUCFCS Code 6319 E3, except with 76 to 100 percent coverage by exotic species.

Freshwater Marsh, Disturbed (0-24% Exotics) (FLUCFCS Code 6419 E1)
The canopy stratum is open. The sub-canopy may contain Carolina willow and/or Brazilian pepper. The ground cover vegetation varies by individual marsh. The ground cover may include any combination of pickerelweed, arrowhead, alligator flag, smartweed, spikerush, maidencane, horned beakrush, red-top panicum, swamp sunflower (*Helianthus angustifolius*), water pennywort (*Hydrocotyle* spp.), primrose willow, cattail, paragrass, and torpedograss.

Freshwater Marsh, Disturbed (25-49% Exotics) (FLUCFCS Code 6419 E2)
The vegetation associations are similar to FLUCFCS Code 6419 E1, except with 25 to 49 percent coverage by exotic vegetation.

Freshwater Marsh, Disturbed (50-75% Exotics) (FLUCFCS Code 6419 E3)
The vegetation associations are similar to FLUCFCS Code 6419 E2, except with 50 to 75 percent coverage by exotic vegetation.

Freshwater Marsh, Disturbed (76-100% Exotics) (FLUCFCS Code 6419 E4)
The vegetation associations are similar to FLUCFCS Code 6419 E3, except with 76 to 100 percent coverage by exotic vegetation.

Wet Prairie, Disturbed (25-49% Exotics) (FLUCFCS Code 6439 E2)
The canopy of this wetland habitat is typically open, but may contain scattered slash pine and/or cabbage palm. The sub-canopy may contain scattered Carolina willow and/or Brazilian pepper. The ground cover vegetation varies by location. The ground cover may include any combination of wax myrtle, sawgrass, southern beakrush (*Rhynchospora microscarpa*), flatsedge (*Cyperus* spp.), blue maidencane, white-top sedge (*Rhynchospora colorata*), camphorweed (*Pluchea rosea*), swamp sunflower, water pennywort, bushy broomgrass, Florida tickseed (*Coreopsis floridana*), flat-top goldenrod, foxtail grass, frog-fruit, corkwood, mock bishop's weed (*Ptilimnium capillaceum*), St. John's wort (*Hypericum* spp.), dog fennel, primrose willow, and/or torpedograss.

Pond Apple Marsh, Disturbed (0-24% Exotics) (FLUCFCS Code 6479 E1)
The canopy vegetation consists predominantly of pond apple and may contain cypress, red maple, and/or pop ash. The sub-canopy contains pond apple and Brazilian pepper. Ground cover vegetation includes maidencane, arrowhead, water pennywort, mermaid-weed (*Proserpinaca* spp.), buttonweed (*Diodia virginiana*), and torpedograss.

Pond Apple Marsh, Disturbed (50-75% Exotics) (FLUCFCS Code 6479 E3)
The vegetation associations are similar to FLUCFCS Code 6479 E1, except with 50 to 75 percent coverage by exotic vegetation.

Disturbed Land (FLUCFCS Code 740)
The canopy is open with occasional slash pine and/or cabbage palm. The sub-canopy may contain scattered Brazilian pepper. Ground cover species present may include dog fennel, ragweed (*Ambrosia artemisiifolia*), Bermuda grass, bahiagrass, white beggar-ticks, smutgrass, and/or caesarweed.

Disturbed Land, Hydric (FLUCFCS Code 7401)
The canopy is open. The sub-canopy may consist of Brazilian pepper and/or Carolina willow. Typical ground cover vegetation includes paragrass, torpedograss, primrose willow, dog fennel, smartweed, and Asiatic pennywort.

Spoil (FLUCFCS Code 743)
The canopy of these disturbed areas is open. The sub-canopy typically contains Brazilian pepper. Dominant ground cover vegetation includes ragweed, smutgrass, rattle-bush (*Sesbania herbacea*), dog fennel, castorbean (*Ricinus communis*), foxtail grass, and white beggar-ticks.

Berm (FLUCFCS Code 747)
The canopy and sub-canopy of berms are typically open, but may include scattered slash pine, cabbage palm, and Brazilian pepper. The ground cover commonly contains ragweed, caesarweed, bahiagrass, smutgrass, Bermuda grass, paragrass, castorbean, fingergrass, foxtail grass, crowfoot grass, rattle-bush, and white beggar-ticks.

Road (FLUCFCS Code 814)
This land use category designates paved roads and associated right-of-ways that may bisect the property.

Unpaved Road (FLUCFCS Code 8146)
This land use category is used for well-traveled dirt and gravel roads on the property.

EXHIBIT 8

BIG CYPRESS STEWARDSHIP DISTRICT
LISTED WILDLIFE AND PLANT SPECIES SURVEY REPORT

BIG CYPRESS STEWARDSHIP DISTRICT
LISTED WILDLIFE AND PLANT SPECIES SURVEY

July 2008

Introduction and Methodology

Passarella & Associates, Inc. conducted listed wildlife and plant species surveys on the Big Cypress Stewardship District (Project) from March to November 2007. The listed species surveys were performed in accordance with Florida Fish and Wildlife Conservation Commission (FWCC) guidelines.

Sampling dates and qualitative descriptions of weather conditions experienced during the listed species survey periods are included as Appendix A.

Surveys were conducted for wildlife species listed by the FWCC and the U.S. Fish and Wildlife Service (USFWS) as endangered, threatened, or a species of special concern; and for plant species listed by the Florida Department of Agriculture and Consumer Services (FDACS) and the USFWS as endangered, threatened, or commercially exploited. The FWCC publication, "Florida's Endangered Species, Threatened Species and Species of Special Concern; Official Lists" dated June 2006 was used as a reference to identify the status of listed species in Florida. The USFWS Threatened and Endangered Species Database System (TESS) was referenced online for the federal status of listed species.

Literature referenced prior to conducting the protected species surveys included the Florida Atlas of Breeding Sites for Herons and Their Allies (Runde *et al.* 1991), FWCC Bald Eagle location maps (2007), and USFWS and FWCC documented listed species locations.

The listed species surveys were conducted by qualified ecologists walking parallel belt transects and meandering pedestrian transects through suitable habitats to ensure that sufficient visual coverage of ground and flora was obtained. Transect spacings varied from 50 to 100 feet in forested habitats and from 50 to 150 feet in grassy open fields depending on vegetative cover and visibility. The perimeters of active row crop fields were walked and observations of listed species sign were recorded. At regular intervals, the ecologists stopped, remained quiet, and listened for wildlife vocalizations. Surveys were conducted during daylight hours and were conducted with the aid of 8x or 10x power binoculars.

The survey methods were consistent with FWCC guidelines for completing Section 18.D of the Application for Development Approval (Florida Game and Freshwater Fish Commission (FGFWFC) 1988). Consistency with the 1988 FGFWFC guidelines for specific sampling methodologies are summarized below.

Wetland Surveys
Wetland surveys for listed species were conducted over a period of ten days. Wetland surveys included additional species not addressed by the 1988 FGFWFC guidelines.

Upland Surveys
Upland surveys for listed species were conducted over a period of ten days. Survey transects exceeded the recommended 1,500 feet of transect per 100 acres. Upland surveys included additional species not addressed by the 1988 FGFWFC guidelines.

Small Mammal Sampling
Based on the habitat types present on the Project site, the occurrence of small mammal species listed in the 1988 FGFWFC guidelines is not expected and, therefore, small mammal trapping was not conducted on the Project site.

Herpetofaunal Surveys
Herpetofaunal surveys were conducted by pedestrian transect. No funnel trapping was conducted on the Project site. Based on known species distributions and habitat preferences, the Eastern indigo snake is the only species that might be expected to occur on the Project site.

Gopher Tortoise Burrow Surveys
Surveys for gopher tortoise burrows were conducted in the potentially suitable habitat types identified on the Project site, as well as habitats on the Project identified in the 1988 FGFWFC guidelines. The percent area of appropriate habitats covered by the survey exceeded the recommended guidelines.

Listed Wildlife Species Documented

In addition to the listed species survey, Passarella & Associates, Inc. conducted nesting season and non-nesting season foraging surveys for the red-cockaded woodpecker (*Picoides borealis*) and a crested caracara (*Caracara cheriway*) nesting territory survey. Listed wildlife species and/or their sign (i.e., burrows, scat, tracks) observed during these surveys, as well as during other field work on-site (i.e., FLUCFCS mapping, wetland flagging, agency site visits, etc.), were documented and are listed in Table 1. Approximate locations of observed listed wildlife species are shown on an aerial provided as Appendix B.

Table 1. Listed Wildlife Species Documented on the Big Cypress Stewardship District

Common Name	Scientific Name	Status	
		FWCC	USFWS
Reptiles			
American Alligator	*Alligator mississippiensis*	SSC	T(S/A)
Eastern Indigo Snake	*Drymarchon corais couperi*	T	T
Birds			
Snowy Egret	*Egretta thula*	SSC	--

Table 1. (Continued)

Common Name	Scientific Name	Status	
		FWCC	USFWS
Birds (Continued)			
Little Blue Heron	*Egretta caerula*	SSC	--
Tri-Colored Heron	*Egretta tricolor*	SSC	--
Roseate Spoonbill	*Ajaia ajaja*	SSC	--
Limpkin	*Aramus guarauna*	SSC	--
White Ibis	*Eudocimus albus*	SSC	--
Wood Stork	*Mycteria americana*	E	E
Peregrine Falcon	*Falco peregrinus*	E	--
Crested Caracara	*Caracara cheriway*	T	T
Florida Sandhill Crane	*Grus canadensis pratensis*	T	--
Mammals			
Big Cypress Fox Squirrel	*Sciurus niger avicennia*	T	--
Florida Panther (including sign)	*Puma concolor coryi*	E	E
Florida Black Bear (including sign)	*Ursus americanus floridanus*	T	--

FWCC – Florida Fish and Wildlife Conservation Commission
USFWS – U.S. Fish and Wildlife Service
E – Endangered
SSC – Species of Special Concern
T – Threatened
T(S/A) – Threatened due to similarity of appearance

American Alligator (*Alligator mississippiensis*)
Adult and juvenile American alligators and alligator nests were observed on the Project site in association with the perimeter and internal ditches and berms within areas designated as Row Crops (FLUCFCS Code 214). American alligators were also observed within other open water features and wetland habitats on-site.

Eastern Indigo Snake (*Drymarchon corais couperi*)
One Eastern indigo snake was observed on the southern portion of the Project site in association with Cypress, Disturbed (FLUCFCS Code 6219) habitat. The Eastern indigo snake is far ranging and may utilize activity areas of 125 to 250 acres or more (Moler 1992). The applicant will comply with the FWCC habitat management plan for the Eastern indigo snake.

Snowy Egret (*Egretta thula*)
Snowy egrets have been observed on the Project site foraging in habitats classified as Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); Wetland Mixed Hardwood/Conifer, Disturbed (FLUCFCS Code 6309); Freshwater Marsh, Disturbed (FLUCFCS Code 6419); and Pond Apple Marsh, Disturbed (FLUCFCS Code 6479). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210), Improved Pasture (FLUCFCS Code211), and Row Crops (FLUCFCS Code 214). No nesting sites for this species were observed.

Little Blue Heron (*Egretta caerula*)
Little blue herons were observed on the Project site foraging in habitats classified as Low Pasture, Hydric (FLUCFCS Code 262); Ditch (FLUCFCS Code 514); Cattle Pond (FLUCFCS Code 525); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); Hydric Pine, Disturbed (FLUCFCS Code 6259); Wetland Mixed Hardwood/Conifer, Disturbed (FLUCFCS Code 6309); Wetland Shrub, Disturbed (FLUCFCS Code 6319); Freshwater Marsh, Disturbed (FLUCFCS Code 6419); and Wet Prairie, Disturbed (FLUCFCS Code 6439). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were observed.

Tri-Colored Heron (*Egretta tricolor*)
Tri-colored herons were observed on the Project site foraging in areas designated as Cropland and Pastureland, Hydric (FLUCFCS Code 2101); Low Pasture, Hydric (FLUCFCS Code 262); Ditch (FLUCFCS Code 514); Cattle Pond (FLUCFCS Code 525); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); Hydric Pine, Disturbed (FLUCFCS Code 6259); Wetland Mixed Hardwood/Conifer, Disturbed (FLUCFCS Code 6309); Wetland Shrub, Disturbed (FLUCFCS Code 6319); and Freshwater Marsh, Disturbed (FLUCFCS Code 6419). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were observed.

Roseate Spoonbill (*Ajaia ajaja*)
Roseate spoonbills have been observed on the Project site foraging in Ditches (FLUCFCS Code 514); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); and Freshwater Marsh, Disturbed (FLUCFCS Code 6419). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were observed.

Limpkin (*Aramus guarauna*)
Limpkins have been observed on the Project site foraging in Ditches (FLUCFCS Code 514); Cypress, Disturbed (FLUCFCS Code 6219); and Wetland Mixed Hardwood/Conifer, Disturbed (FLUCFCS Code 6309). No nesting sites for this species were observed.

White Ibis (*Eudocimus albus*)
White ibis have been observed on the Project site in association with Low Pasture, Hydric (FLUCFCS Code 262); Pine Flatwoods, Disturbed (FLUCFCS Code 4119); Ditch (FLUCFCS Code 514); Cattle Pond (FLUCFCS Code 525); Wetland Mixed Hardwoods, Disturbed (FLUCFCS Code 6179); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); Cypress/Pine/Cabbage Palm, Disturbed (FLUCFCS Code 6249); Hydric Pine, Disturbed (FLUCFCS Code 6259); Wetland Mixed Hardwood/Conifer, Disturbed (FLUCFCS Code 6309); Wetland Shrub, Disturbed (FLUCFCS Code 6319); Freshwater Marsh, Disturbed (FLUCFCS Code 6419); and Pond Apple Marsh, Disturbed (FLUCFCS Code 6479). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were observed.

Wood Stork (*Mycteria americana*)
Wood storks were observed on the Project site in habitats classified as Low Pasture, Hydric (FLUCFCS Code 262); Dry Prairie, Disturbed (FLUCFCS Code 3109); Ditch (FLUCFCS Code 514); Cattle Pond (FLUCFCS Code 525); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); Cypress/Pine/Cabbage Palm, Disturbed (FLUCFCS Code 6249); Hydric Pine, Disturbed (FLUCFCS Code 6259); Wetland Mixed Hardwood/Conifer, Disturbed (FLUCFCS Code 6309); Wetland Shrub, Disturbed (FLUCFCS Code 6319); Freshwater Marsh, Disturbed (FLUCFCS Code 6419); Wet Prairie, Disturbed (FLUCFCS Code 6439); and Pond Apple Marsh, Disturbed (FLUCFCS Code 6479). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were observed. The Florida Atlas of Breeding Sites for Herons and Their Allies (Runde *et al.* 1991) and FWCC data list no wood stork rookeries on the Project site. The nearest recorded wood stork rookeries are Nos. 619161 and 619160, located approximately 2.8 and 3.2 miles southwest of the Project site, respectively. The Corkscrew Swamp Sanctuary wood stork rookeries (Nos. 619018 and 619310) are located approximately 7.5 to 8.2 miles northwest of the Project site.

Peregrine Falcon (*Falco peregrinus*)
Peregrine falcons migrate and winter throughout Florida in areas with open terrain which allows the pursuit of avian prey. Peregrine falcons do not nest in Florida (Rodgers *et al.* 1996). An adult peregrine falcon was observed on the Project site in an open area designated as Cropland and Pastureland (FLUCFCS Code 210) in January 2006.

Crested Caracara (*Caracara cheriway*)
A nesting territory survey for crested caracara and their nests was conducted in February and March 2007. No crested caracara or crested caracara nests were observed during the survey. During other fieldwork on-site, crested caracara have been observed in areas designated as Cropland and Pastureland (FLUCFCS Code 210); perched on a pine snag located within Hydric Brazilian Pepper (FLUCFCS Code 4221); and perched on cypress tree within Cypress, Disturbed (FLUCFCS Code 6219). No crested caracara nests have been observed on-site.

Florida Sandhill Crane (*Grus canadensis pratensis*)
Adult Florida sandhill cranes have been observed on the Project site foraging in fields classified as Cropland and Pastureland (FLUCFCS Code 210); Cropland and Pastureland, Hydric (FLUCFCS Code 2101); and Row Crops (FLUCFCS Code 214). Adult Florida sandhill cranes have also been observed foraging in habitats designated as Freshwater Marsh, Disturbed (FLUCFCS Code 6419) and Wet Prairie, Disturbed (FLUCFCS Code 6439). No Florida sandhill crane nests have been observed on-site.

Big Cypress Fox Squirrel (*Sciurus niger avicennia*)
Big Cypress fox squirrels have been observed on the Project site in association with Cypress, Disturbed (FLUCFCS Code 6219).

Florida Panther (*Puma concolor coryi*)
The Project is located within the Primary and Secondary Zones of the USFWS Panther Focus Area (Kautz *et al.* 2006). Telemetry points from radio-collared panthers have been recorded by the FWCC on the Project site. Florida panthers have been observed on the Project site in habitats classified as Pasture (FLUCFCS Code 210); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); and Hydric Pine, Disturbed (FLUCFCS Code 6259). Florida panther sign (i.e., tracks, scat, etc.) has been observed in native upland and wetland habitats during listed species surveys and other fieldwork on the Project site. Florida panther tracks and scat have also been observed on the perimeter berms of the agriculture fields adjacent to native forested habitat.

Florida Black Bear (*Ursus americanus floridanus*)
FWCC Florida black bear telemetry points have been recorded on the Project site. Florida black bears have been sighted on the Project site in habitats classified as Cropland and Pastureland (FLUCFCS Code 210); Pine Flatwoods, Disturbed (FLUCFCS Code 4119); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); Cypress/Pine/Cabbage Palm, Disturbed (FLUCFCS Code 6249); Hydric Pine, Disturbed (FLUCFCS Code 6259); and Wetland Mixed Hardwood/Conifer, Disturbed (FLUCFCS Code 6309). Florida black bear sign (i.e., tracks, scat, etc.) has been observed in upland and wetland habitats during listed species surveys and other fieldwork on the Project site. Florida black bear tracks and scat have also been observed on the perimeter berms of the agriculture fields.

Listed Plant Species Documented

Listed plant species identified on the Project site and the habitat types (i.e. FLUCFCS Codes) in which they were observed are listed in Table 2. Seven listed plant species have been observed on the Project site.

Table 2. Listed Plant Species Documented on the Big Cypress Stewardship District

Common Name	Scientific Name	Designated Status		Observed Locations (FLUCFCS Code)
		FDACS	USFWS	
Common Wild Pine	*Tillandsia fasciculata*	E	-	4119, 4279, 4349, 6219, 6249, 6259
Giant Wild Pine	*Tillandsia utriculata*	E	-	6219, 6249, 6309
Fuzzy-Wuzzy Air Plant	*Tillandsia pruinosa*	E	-	6219, 6249, 6309
Soft-Leaved Wild Pine	*Tillandsia variabilis*	T	-	6219, 6249, 6309
Butterfly Orchid	*Encyclia tampensis*	C	-	6219, 6249, 6309
Royal Fern	*Osmunda regalis*	C	-	6219
Cinnamon Fern	*Osmunda cinnamomea*	C	-	6219, 6249

FDACS – Florida Department of Agriculture and Consumer Services
USFWS – U.S. Fish and Wildlife Service
C – Commercially Exploited
E – Endangered

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APPENDIX A

LISTED SPECIES SURVEY DATES AND WEATHER CONDITIONS

Appendix A. Listed Species Survey Dates and Weather Conditions for the Big Cypress Stewardship District

Date	Weather Conditions
March 13, 2007	Temperature 65-80, wind 5-10 mph from N/NE, partly cloudy
March 14, 2007	Temperature 65-80, wind 0-8 mph, partly to mostly cloudy
March 15, 2007	Temperature 65-80, partly cloudy wind 0-10 mph
March 16, 2007	Temperature 65-80, partly cloudy, wind 0-10 mph, humid
March 21, 2007	Temperature 65-80, wind SE at 0-5 mph early and 15 mph in afternoon, clear to partly cloudy, humid
March 22, 2007	Temperature 65-77, mostly cloudy, wind 0-8 mph, humid, light rain in afternoon.
March 23, 2007	Temperature 65-80, partly cloudy, NE wind at 0 to 15 mph, humid
March 28, 2007	Temperature 65-85, variable wind at 0-15 mph, partly cloudy, humid
April 3, 2007	Temperature 65-85, wind 0-7 mph, partly cloudy, humid
April 10, 2007	Temperature 65-80, foggy morning, mostly cloudy rest of day, humid, wind 0-7 mph
April 11, 2007	Temperature 70-85, partly cloudy, humid, wind 0-7 mph
April 13, 2007	Temperature 70-85, clear to partly cloudy, humid, wind 0-8 mph
April 18, 2007	Temperature 60-85, mostly sunny, wind 0-10 mph
April 19, 2007	Temperature 60-85, partly cloudy, wind 0-10 mph
April 20, 2007	Temperature 65-88, partly cloudy, 5-10 mph
April 25, 2007	Temperature 63-85, partly cloudy, 0-10 mph
May 1, 2007	Temperature 65-85, partly cloudy, 0-10 mph, very humid
May 3, 2007	Temperature 67-88, mostly cloudy, very humid, light rain in the afternoon, winds 0-8 mph
May 9, 2007	Temperature 68-82, mostly cloudy, humid, winds 0-6 mph, smoke in the air from wildfires.
May 11, 2007	Temperature 70-85, partly cloudy, humid, wind 0-10 mph
May 17, 2007	Temperature 70-86, partly sunny and hazy, with 0-5 mph winds
May 22, 2007	Temperature 75-90, partly cloudy, winds 5-10 mph
May 24, 2007	Temperature mid 80s, partly cloudy, humid, 10-12 mph winds
May 25, 2007	Temperature mid 80s, mostly cloudy, 10 mph winds
May 29, 2007	Temperature 75-85, partly cloudy, wind 0-5 mph
May 30, 2007	Temperature low to mid 80s, partly cloudy to sunny, wind 5-15 mph
May 31, 2007	Temperature 78-85, mostly cloudy, wind 10-15 mph
June 1, 2007	Temperature 78-82, overcast, some light rain, wind 0-5 mph
June 4, 2007	Temperature 82-88, clear to partly cloudy, wind 0-10 mph
June 5, 2007	Temperature 80-87, mostly cloudy, wind 0-10 mph
June 6, 2007	Temperature 83-90, calm, overcast with occasional thunder, very humid
June 7, 2007	Temperature 85-90, partly cloudy, wind 0-10 mph
June 8, 2007	Temperature upper 80s, mostly cloudy, wind 0-10 mph, very humid, overcast with thunder at 1300.

Appendix A. (Continued)

Date	Weather Conditions
June 11, 2007	Temperature 82-92, partly cloudy, wind 0-10 mph, very humid
June 12, 2007	Temperature 85-90, mostly cloudy to overcast with occasional rain, wind 0-10 mph,
June 13, 2007	Temperature mid 80s, mostly cloudy to overcast, wind 0-5 mph
June 14, 2007	Temperature mid 80s, partly cloudy, wind 0-5 mph, humid
June 18, 2007	Temperature 75-92, partly cloudy, very humid, calm
June 19, 2007	Temperature 75-92, partly to mostly cloudy, humid, 0-5 mph wind
June 20, 2007	Temperature 75-92, clear to partly cloudy, humid, wind 0-5 mph
July 3, 2007	Temperature 75-88, partly cloudy, 0-5 mph winds, thunderstorm approaching from west at 1400, light rain.
July 5, 2007	Temperature 80-90, mostly cloudy, humid, calm, intermittent rain
July 6, 2007	Temperature 80-92, mostly sunny, calm
July 11, 2007	Temperature 77-95, partly cloudy, humid, 0-10 mph wind
July 12, 2007	Temperature 75 - 97, partly cloudy, humid, 0-5 mph wind, intermittent light rain in afternoon.
July 13, 2007	Temperature 78-92, partly to mostly cloudy, 0-10 mph, intermittent rain showers
July 16, 2007	Temperature 78-85, mostly cloudy, wind 0-10 mph, very humid
July 17, 2007	Temperature 78-95, mostly cloudy, very humid, wind 0-5 mph
July 18, 2007	Temperature 77-95, partly cloudy, calm, very humid
August 2, 2007	Temperature 80-93, partly cloudy, wind 0-5 mph
August 3, 2007	Temperature 80-93, partly cloudy, calm and humid
August 7, 2007	Temperature 80-95, partly cloudy, wind 0-5 mph
August 9, 2007	Temperature 80-95, partly cloudy, wind 0-5 mph, very humid
September 12, 2007	Temperature 73-93, ESE wind 3-20 mph, humid, partly cloudy, scattered rain
September 27, 2007	Temperature 75-90, partly cloudy, calm
October 3, 2007	Temperature 75-90, partly to mostly cloudy, wind 0-5 mph
October 10, 2007	Temperature 80-90, partly cloudy, light wind 0-5 mph
October 23, 2007	Temperature 82-90, partly cloudy, wind 5-10 mph
October 24, 2007	Temperature 83-87, partly to mostly cloudy, wind 0-10 mph
October 25, 2007	Temperature mid 80s, partly cloudy, wind 5-10 mph
October 30, 2007	Temperature low 80s, mostly cloudy, wind 10-15 mph
October 31, 2007	Temperature low 80s, mostly cloudy, wind 10-15 mph
November 1, 2007	Temperature mid 80s, sunny to partly cloudy, wind 10-15 mph

APPENDIX B

AERIAL WITH APPROXIMATE LOCATIONS OF LISTED WILDLIFE SPECIES

Legend:

- BIG CYPRESS STEWARDSHIP DISTRICT

LISTED SPECIES

- AA, AMERICAN ALLIGATOR
- AAN, AMERICAN ALLIGATOR (NEST)
- AAS, AMERICAN ALLIGATOR (SIGN)
- BB, FLORIDA BLACK BEAR
- BBS, FLORIDA BLACK BEAR (SIGN)
- BCFS, BIG CYPRESS FOX SQUIRREL
- BCFSN, BIG CYPRESS FOX SQUIRREL (NEST)
- CRCA, CRESTED CARACARA
- EISN, EASTERN INDIGO SNAKE
- FP, FLORIDA PANTHER
- FPS, FLORIDA PANTHER (SIGN)
- LBH, LITTLE BLUE HERON
- LI, LIMPKIN
- PF, PEREGRINE FALCON
- RSP, ROSEATE SPOONBILL
- SE, SNOWY EGRET
- SHC, FLORIDA SANDHILL CRANE
- TCH, TRI-COLORED HERON
- WI, WHITE IBIS
- WS, WOOD STORK

FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
100	RESIDENTIAL	12.51 Ac.±	0.1%
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	26.24 Ac.±	0.1%
210	CROPLAND AND PASTURELAND	1858.12 Ac.±	8.4%
2101	CROPLAND AND PASTURELAND, HYDRIC	360.75 Ac.±	1.6%
211	IMPROVED PASTURE	16.50 Ac.±	0.1%
214	ROW CROPS	7374.01 Ac.±	33.2%
260	RURAL OPEN LAND	53.53 Ac.±	0.2%
2611	FALLOW CROP LAND, HYDRIC	153.07 Ac.±	0.7%
262	LOW PASTURE, HYDRIC	30.18 Ac.±	0.1%
3109 E1	DRY PRAIRIE, DISTURBED (0-24% EXOTICS)	63.41 Ac.±	0.3%
3109 E3	DRY PRAIRIE, DISTURBED (50-75% EXOTICS)	5.32 Ac.±	0.0%
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	99.30 Ac.±	0.4%
3219 E2	PALMETTO PRAIRIE, DISTURBED (25-49% EXOTICS)	23.68 Ac.±	0.1%
3219 E3	PALMETTO PRAIRIE, DISTURBED (50-75% EXOTICS)	0.25 Ac.±	0.0%
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	779.95 Ac.±	3.5%
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	149.29 Ac.±	0.7%
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	140.50 Ac.±	0.6%
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	30.61 Ac.±	0.1%
4199 E1	OTHER PINE, DISTURBED (0-24% EXOTICS)	0.47 Ac.±	0.0%
4199 E2	OTHER PINE, DISTURBED (25-49% EXOTICS)	1.87 Ac.±	0.0%
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	8.99 Ac.±	0.0%
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.58 Ac.±	0.0%
422	BRAZILIAN PEPPER	49.87 Ac.±	0.2%
4221	BRAZILIAN PEPPER, HYDRIC	124.67 Ac.±	0.6%
424	MELALEUCA	0.10 Ac.±	0.0%
4241	MELALEUCA, HYDRIC	7.10 Ac.±	0.0%
4279 E1	LIVE OAK, DISTURBED (0-24% EXOTICS)	1.94 Ac.±	0.0%
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.13 Ac.±	0.0%
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	55.85 Ac.±	0.3%
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±	0.0%
4289 E3	CABBAGE PALM, DISTURBED (50-75% EXOTICS)	7.14 Ac.±	0.0%
4299 E2	WAX MYRTLE, DISTURBED (25-49% EXOTICS)	2.73 Ac.±	0.0%
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	99.91 Ac.±	0.4%
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	57.24 Ac.±	0.3%
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	17.99 Ac.±	0.1%
4349 E4	MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	1.29 Ac.±	0.0%
514	DITCH	96.10 Ac.±	0.4%
525	CATTLE POND	3.07 Ac.±	0.0%
530	RESERVOIR	1.47 Ac.±	0.0%
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	78.67 Ac.±	0.4%
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	12.04 Ac.±	0.1%
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	8.23 Ac.±	0.0%
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	1100.97 Ac.±	5.0%
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	69.27 Ac.±	0.3%
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	302.61 Ac.±	1.4%
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	262.42 Ac.±	1.2%
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	3279.79 Ac.±	14.8%
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	1053.87 Ac.±	4.7%
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	482.26 Ac.±	2.2%
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	145.83 Ac.±	0.7%
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	163.76 Ac.±	0.7%
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	174.55 Ac.±	0.8%
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	224.89 Ac.±	1.0%
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	55.23 Ac.±	0.2%
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	161.98 Ac.±	0.7%
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	297.65 Ac.±	1.3%
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	217.66 Ac.±	1.0%
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	77.34 Ac.±	0.3%
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	20.07 Ac.±	0.1%
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.90 Ac.±	0.0%
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	6.89 Ac.±	0.0%
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±	0.0%
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	323.92 Ac.±	1.5%
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	402.25 Ac.±	1.8%
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	271.93 Ac.±	1.2%
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	19.59 Ac.±	0.1%
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	112.95 Ac.±	0.5%
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	33.41 Ac.±	0.2%
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	98.44 Ac.±	0.4%
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	630.19 Ac.±	2.8%
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	22.00 Ac.±	0.1%
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	34.49 Ac.±	0.2%
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	15.63 Ac.±	0.1%
6439 E1	WET PRAIRIE, DISTURBED (0-24% EXOTICS)	60.16 Ac.±	0.3%
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	24.94 Ac.±	0.1%
6439 E3	WET PRAIRIE, DISTURBED (50-75% EXOTICS)	17.38 Ac.±	0.1%
6439 E4	WET PRAIRIE, DISTURBED (76-100% EXOTICS)	5.22 Ac.±	0.0%
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	3.44 Ac.±	0.0%
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.65 Ac.±	0.0%
740	DISTURBED LAND	66.15 Ac.±	0.3%
7401	DISTURBED LAND, HYDRIC	13.70 Ac.±	0.1%
742	BORROW AREA	1.62 Ac.±	0.0%
743	SPOIL	1.12 Ac.±	0.0%
747	BERM	23.33 Ac.±	0.1%
8146	UNPAVED ROAD	106.99 Ac.±	0.5%
832	ELECTRICAL POWER TRANSMISSION LINE	4.35 Ac.±	0.0%
	TOTAL	22209.76 Ac.±	100.0%

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NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\GIS\2008\BIOLOGICAL ASSESSMENT\CAMP KEAIS\EXHIBITS\APPENDIX B-1 AERIAL WITH LSS LOCATIONS 1-16-08.MXD - 7/7/2008 @ 11:05:48 AM

DRAWN BY	DATE
W.C.	1/15/08
REVIEWED BY	DATE
C.G.R.	1/15/08
REVISED	DATE

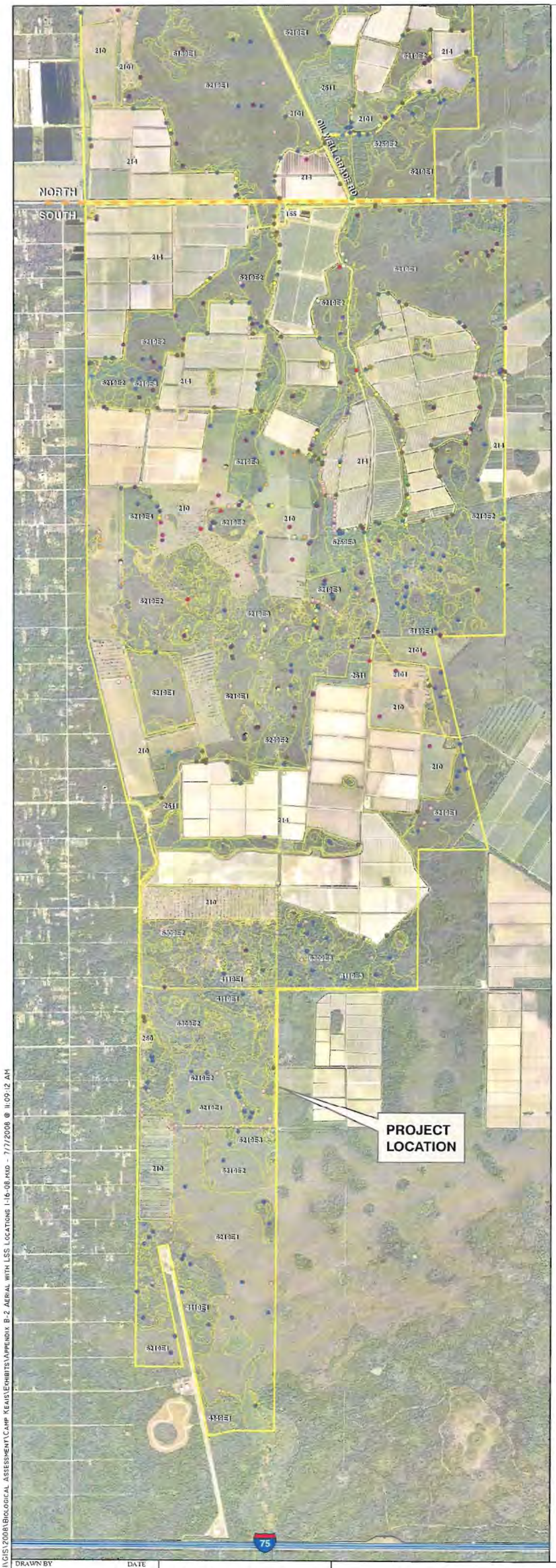
9110 College Pointe Court
Fort Myers, Florida 33919
Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

BIG CYPRESS STEWARDSHIP DISTRICT
NORTH OF OIL WELL ROAD
AERIAL WITH FLUCFCS AND LISTED SPECIES LOCATIONS

DRAWING No. 05CEM1481

SHEET No. APPENDIX B-1



Legend:

Big Cypress Stewardship District

Listed Species

- AA, American Alligator
- AAN, American Alligator (Nest)
- AAS, American Alligator (Sign)
- BB, Florida Black Bear
- BBS, Florida Black Bear (Sign)
- BCFS, Big Cypress Fox Squirrel
- BCFSN, Big Cypress Fox Squirrel (Nest)
- CRCA, Crested Caracara
- EISN, Eastern Indigo Snake
- FP, Florida Panther
- FPS, Florida Panther (Sign)
- LBH, Little Blue Heron
- LI, Limpkin
- PF, Peregrine Falcon
- RSP, Roseate Spoonbill
- SE, Snowy Egret
- SHC, Florida Sandhill Crane
- TCH, Tri-colored Heron
- WI, White Ibis
- WS, Wood Stork

FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
100	RESIDENTIAL	12.51 Ac.±	0.1%
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	26.24 Ac.±	0.1%
210	CROPLAND AND PASTURELAND	1858.12 Ac.±	8.4%
2101	CROPLAND AND PASTURELAND, HYDRIC	360.75 Ac.±	1.6%
211	IMPROVED PASTURE	16.50 Ac.±	0.1%
214	ROW CROPS	7374.01 Ac.±	33.2%
260	RURAL OPEN LAND	53.53 Ac.±	0.2%
2611	FALLOW CROP LAND, HYDRIC	153.07 Ac.±	0.7%
262	LOW PASTURE, HYDRIC	30.18 Ac.±	0.1%
3109 E1	DRY PRAIRIE, DISTURBED (0-24% EXOTICS)	63.41 Ac.±	0.3%
3109 E3	DRY PRAIRIE, DISTURBED (50-75% EXOTICS)	5.32 Ac.±	0.0%
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	99.30 Ac.±	0.4%
3219 E2	PALMETTO PRAIRIE, DISTURBED (25-49% EXOTICS)	23.68 Ac.±	0.1%
3219 E3	PALMETTO PRAIRIE, DISTURBED (50-75% EXOTICS)	0.25 Ac.±	0.0%
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	779.95 Ac.±	3.5%
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	149.29 Ac.±	0.7%
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	140.60 Ac.±	0.6%
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	30.61 Ac.±	0.1%
4199 E1	OTHER PINE, DISTURBED (0-24% EXOTICS)	0.47 Ac.±	0.0%
4199 E2	OTHER PINE, DISTURBED (25-49% EXOTICS)	1.87 Ac.±	0.0%
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	8.99 Ac.±	0.0%
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.58 Ac.±	0.0%
422	BRAZILIAN PEPPER	49.87 Ac.±	0.2%
4221	BRAZILIAN PEPPER, HYDRIC	124.67 Ac.±	0.6%
424	MELALEUCA	0.10 Ac.±	0.0%
4241	MELALEUCA, HYDRIC	7.10 Ac.±	0.0%
4279 E1	LIVE OAK, DISTURBED (0-24% EXOTICS)	1.94 Ac.±	0.0%
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.13 Ac.±	0.0%
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	55.85 Ac.±	0.3%
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±	0.0%
4289 E3	CABBAGE PALM, DISTURBED (50-75% EXOTICS)	7.14 Ac.±	0.0%
4299 E2	WAX MYRTLE, DISTURBED (25-49% EXOTICS)	2.73 Ac.±	0.0%
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	99.91 Ac.±	0.4%
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	57.24 Ac.±	0.3%
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	17.99 Ac.±	0.1%
4349 E4	MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	1.29 Ac.±	0.0%
514	DITCH	96.10 Ac.±	0.4%
525	CATTLE POND	3.07 Ac.±	0.0%
530	RESERVOIR	1.47 Ac.±	0.0%
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	78.67 Ac.±	0.4%
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	12.04 Ac.±	0.1%
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	8.23 Ac.±	0.0%
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	1100.97 Ac.±	5.0%
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	69.27 Ac.±	0.3%
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	302.61 Ac.±	1.4%
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	262.42 Ac.±	1.2%
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	3279.79 Ac.±	14.8%
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	1053.87 Ac.±	4.7%
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	482.26 Ac.±	2.2%
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	145.83 Ac.±	0.7%
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	163.76 Ac.±	0.7%
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	174.55 Ac.±	0.8%
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	224.89 Ac.±	1.0%
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	55.23 Ac.±	0.2%
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	161.98 Ac.±	0.7%
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	297.65 Ac.±	1.3%
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	217.66 Ac.±	1.0%
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	77.34 Ac.±	0.3%
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	20.07 Ac.±	0.1%
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.90 Ac.±	0.0%
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	6.89 Ac.±	0.0%
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±	0.0%
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	323.92 Ac.±	1.5%
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	402.25 Ac.±	1.8%
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	271.93 Ac.±	1.2%
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	19.59 Ac.±	0.1%
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	112.95 Ac.±	0.5%
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	33.41 Ac.±	0.2%
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	98.44 Ac.±	0.4%
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	630.19 Ac.±	2.8%
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	22.00 Ac.±	0.1%
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	34.49 Ac.±	0.2%
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	15.63 Ac.±	0.1%
6439 E1	WET PRAIRIE, DISTURBED (0-24% EXOTICS)	60.16 Ac.±	0.3%
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	24.94 Ac.±	0.1%
6439 E3	WET PRAIRIE, DISTURBED (50-75% EXOTICS)	17.38 Ac.±	0.1%
6439 E4	WET PRAIRIE, DISTURBED (76-100% EXOTICS)	5.22 Ac.±	0.0%
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	3.44 Ac.±	0.0%
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.65 Ac.±	0.0%
740	DISTURBED LAND	66.15 Ac.±	0.3%
7401	DISTURBED LAND, HYDRIC	13.70 Ac.±	0.1%
742	BORROW AREA	1.62 Ac.±	0.0%
743	SPOIL	1.12 Ac.±	0.0%
747	BERM	23.33 Ac.±	0.1%
8146	UNPAVED ROAD	106.99 Ac.±	0.5%
832	ELECTRICAL POWER TRANSMISSION LINE	4.35 Ac.±	0.0%
	TOTAL	22209.76 Ac.±	100.0%

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NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM148\GIS\2008\BIOLOGICAL ASSESSMENT\CAMP KEAIS\EXHIBITS\APPENDIX B-2 AERIAL WITH LSS LOCATIONS 1-16-08.MXD - 7/7/2008 @ 11:09:12 AM

DRAWN BY	DATE
W.C.	1/15/08
REVIEWED BY	DATE
C.G.R.	1/15/08
REVISED	DATE

9110 College Pointe Court
Fort Myers, Florida 33919
Phone (239) 274-0067
Fax (239) 274-0069

Passarella & Associates, Inc. — Consulting Ecologists

BIG CYPRESS STEWARDSHIP DISTRICT
SOUTH OF OIL WELL ROAD
AERIAL WITH FLUCFCS AND LISTED SPECIES LOCATIONS

DRAWING No. 05CEM1481

SHEET No. APPENDIX B-2

EXHIBIT 9

TOWN OF BIG CYPRESS
LISTED WILDLIFE AND PLANT SPECIES SURVEY REPORT

TOWN OF BIG CYPRESS
LISTED WILDLIFE AND PLANT SPECIES SURVEY

June 2009

Introduction and Methodology

Passarella & Associates, Inc. (PAI) conducted listed wildlife and plant species surveys on the Town of Big Cypress (Project) from March to November 2007. The listed species surveys were performed in accordance with Florida Fish and Wildlife Conservation Commission (FWCC) guidelines.

Sampling dates and qualitative descriptions of weather conditions experienced during the listed species survey periods are included as Appendix A.

Surveys were conducted for wildlife species listed by the FWCC and U.S. Fish and Wildlife Service (USFWS) as endangered, threatened, or species of special concern; and for plant species listed by the Florida Department of Agriculture and Consumer Services (FDACS) and USFWS as endangered, threatened, or commercially exploited. The FWCC publication, "Florida's Endangered Species, Threatened Species and Species of Special Concern; Official Lists" dated June 2006 was used as a reference to identify the status of listed species in Florida. The USFWS Threatened and Endangered Species Database System (TESS) was referenced online for the federal status of listed species.

Literature referenced prior to conducting the protected species surveys included the Florida Atlas of Breeding Sites for Herons and Their Allies (Runde *et al*. 1991), FWCC Bald Eagle location maps (2007), and USFWS and FWCC documented listed species locations.

The listed species surveys were conducted by qualified ecologists walking parallel belt transects and meandering pedestrian transects through suitable habitats to ensure that sufficient visual coverage of ground and flora was obtained. Transect spacings varied from 50 to 100 feet in forested habitats and from 50 to 150 feet in grassy open fields depending on vegetative cover and visibility. The perimeters of active row crop fields were walked and observations of listed species sign were recorded. At regular intervals, the ecologists stopped, remained quiet, and listened for wildlife vocalizations. Surveys were conducted during daylight hours and were conducted with the aid of 8x or 10x power binoculars.

The survey methods were consistent with FWCC guidelines for completing Section 18.D of the Application for Development Approval (Florida Game and Freshwater Fish Commission (FGFWFC) 1988). Consistency with the 1988 FGFWFC guidelines for specific sampling methodologies are summarized below.

<u>Wetland Surveys</u>
Wetland surveys for listed species were conducted over a period of ten days. Wetland surveys included additional species not addressed by the 1988 FGFWFC guidelines.

Upland Surveys

Upland surveys for listed species were conducted over a period of ten days. Survey transects exceeded the recommended 1,500 feet of transect per 100 acres. Upland surveys included additional species not addressed by the 1988 FGFWFC guidelines.

Small Mammal Sampling

Based on the habitat types present on the project site, the occurrence of small mammal species listed in the 1988 FGFWFC guidelines is not expected and, therefore, small mammal trapping was not conducted on the project site.

Herpetofaunal Surveys

Herpetofaunal surveys were conducted by pedestrian transect. No funnel trapping was conducted on the project site. Based on known species distributions and habitat preferences, the Eastern indigo snake is the only species that might be expected to occur on the project site.

Gopher Tortoise Burrow Surveys

Surveys for gopher tortoise burrows were conducted in the potentially suitable habitat types identified on the project site, as well as habitats on the project identified in the 1988 FGFWFC guidelines. The percent area of appropriate habitats covered by the survey exceeded the recommended guidelines.

Listed Wildlife Species Documented

In addition to the listed species survey, PAI conducted non-nesting season foraging surveys for the red-cockaded woodpecker (*Picoides borealis*) in October and November 2007. A crested caracara (*Caracara cheriway*) nesting territory survey for the Big Cypress Stewardship District, which encompasses the Project site, was conducted in February and March 2007. An additional crested caracara nesting season survey for the Project was conducted at the request of the USFWS in January through April of 2009. Listed wildlife species and/or their sign (i.e., burrows, scat, tracks) documented during these surveys, as well as during other fieldwork conducted by PAI on-site (i.e., FLUCFCS mapping, wetland flagging, agency site visits, etc.), were documented and are listed in Table 1. Approximate locations of documented listed wildlife species are shown on an aerial provided as Appendix B.

Table 1. Summary of Listed Wildlife Species Documented on the Town of Big Cypress

Common Name	Scientific Name	Status	
		FWCC	USFWS
Reptiles			
American Alligator	*Alligator mississippiensis*	SSC	T(S/A)
Birds			
Snowy Egret	*Egretta thula*	SSC	--
Little Blue Heron	*Egretta caerula*	SSC	--
Tri-Colored Heron	*Egretta tricolor*	SSC	--

Table 1. (Continued)

Common Name	Scientific Name	Status	
		FWCC	USFWS
Birds (Continued)			
Roseate Spoonbill	*Ajaia ajaja*	SSC	--
Limpkin	*Aramus guarauna*	SSC	--
White Ibis	*Eudocimus albus*	SSC	--
Wood Stork	*Mycteria americana*	E	E
Peregrine Falcon	*Falco peregrinus*	E	--
Crested Caracara	*Caracara cheriway*	T	T
Florida Sandhill Crane	*Grus canadensis pratensis*	T	--
Mammals			
Big Cypress Fox Squirrel	*Sciurus niger avicennia*	T	--
Florida Panther	*Puma concolor coryi*	E	E
Florida Black Bear	*Ursus americanus floridanus*	T	--

FWCC – Florida Fish and Wildlife Conservation Commission
USFWS – U.S. Fish and Wildlife Service
E – Endangered
SSC – Species of Special Concern
T – Threatened
T(S/A) – Threatened due to similarity of appearance

American Alligator (*Alligator mississippiensis*)
Adult and juvenile American alligators and alligator nests have been documented on the Project site in association with the perimeter and internal ditches and berms within areas designated as Row Crops (FLUCFCS Code 214). American alligators were also documented within other open water features and wetland habitats on-site.

Snowy Egret (*Egretta thula*)
Snowy egrets have been documented on the Project site foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210), Improved Pasture (FLUCFCS Code211), and Row Crops (FLUCFCS Code 214). They have also been observed foraging in habitats classified as Cypress, Disturbed (FLUCFCS Code 6219); and Freshwater Marsh, Disturbed (FLUCFCS Code 6419). No nesting sites for this species were documented.

Little Blue Heron (*Egretta caerula*)
Little blue herons were documented on the Project site foraging in habitats classified as Low Pasture, Hydric (FLUCFCS Code 262); Ditch (FLUCFCS Code 514); Cattle Pond (FLUCFCS Code 525); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); Hydric Pine, Disturbed (FLUCFCS Code 6259); and Freshwater Marsh, Disturbed (FLUCFCS Code 6419). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were documented.

Tri-Colored Heron (*Egretta tricolor*)
Tri-colored herons were documented on the Project site foraging in areas designated as Low Pasture, Hydric (FLUCFCS Code 262); Ditch (FLUCFCS Code 514); Cattle Pond (FLUCFCS Code 525); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); and Hydric Pine, Disturbed (FLUCFCS Code 6259). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were documented.

Roseate Spoonbill (*Ajaia ajaja*)
Roseate spoonbills have been documented on the Project site foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were documented.

Limpkin (*Aramus guarauna)*
Limpkins have been documented on the Project site foraging in Ditches (FLUCFCS Code 514). No nesting sites for this species were documented.

White Ibis (*Eudocimus albus*)
White ibis have been documented on the Project site in association with Low Pasture, Hydric (FLUCFCS Code 262); Ditch (FLUCFCS Code 514); Cattle Pond (FLUCFCS Code 525); Willow, Disturbed (FLUCFCS Code 6189); Cypress, Disturbed (FLUCFCS Code 6219); Cypress/Pine/Cabbage Palm, Disturbed (FLUCFCS Code 6249); and Hydric Pine, Disturbed (FLUCFCS Code 6259). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were documented.

Wood Stork (*Mycteria americana*)
Wood storks were documented on the Project site in habitats classified as Low Pasture, Hydric (FLUCFCS Code 262); Ditch (FLUCFCS Code 514); Cattle Pond (FLUCFCS Code 525); and Cypress, Disturbed (FLUCFCS Code 6219). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214). No nesting sites for this species have been documented on-site. The Florida Atlas of Breeding Sites for Herons and Their Allies (Runde *et al.* 1991) and FWCC data list no wood stork rookeries on the Project site. The Project site is located within the core foraging areas for four wood stork rookeries as depicted in Exhibit 8. The rookeries with their distance to the property include: No. 619161 located 3.5± miles east; No. 619018 located 7.5± miles northwest; No. 619310 located 8.0± miles northwest; and No. 619141 located approximately 13.5± miles northeast of the Project site.

Peregrine Falcon (*Falco peregrinus)*
Peregrine falcons migrate and winter throughout Florida in areas with open terrain which allows the pursuit of avian prey. Peregrine falcons do not nest in Florida (Rodgers *et al.* 1996). An adult peregrine falcon was documented on the Project site in an open area designated as Cropland and Pastureland (FLUCFCS Code 210) in January 2006.

Crested Caracara (*Caracara cheriway*)

A nesting territory survey for crested caracara and their nests was conducted in February and March 2007 for the Big Cypress Stewardship District. No crested caracara or crested caracara nests were documented during the 2007 survey. However, during other fieldwork on-site, crested caracara have been documented in areas designated as Cropland and Pastureland (FLUCFCS Code 210); perched on a pine snag located within Hydric Brazilian Pepper (FLUCFCS Code 4221); and perched on cypress tree within Cypress, Disturbed (FLUCFCS Code 6219). An additional crested caracara nesting season survey for the Project was conducted in January through April 2009. One active crested caracara nest was documented on the Project site during the 2009 survey. However, based on the behaviors of the caracara pair and the condition of the nest during the last days of the survey, the nest was determined to be lost.

Florida Sandhill Crane (*Grus canadensis pratensis*)

Adult Florida sandhill cranes have been documented on the Project site foraging in fields classified as Cropland and Pastureland (FLUCFCS Code 210); and Row Crops (FLUCFCS Code 214). No Florida sandhill crane nests have been documented on-site.

Big Cypress Fox Squirrel (*Sciurus niger avicennia*)

A Big Cypress fox squirrel survey was conducted by PAI on the Project site in December 2007 and January 2008. One Big Cypress fox squirrel was documented on the Project site in association with Cypress, Disturbed (FLUCFCS Code 6219). No Big Cypress fox squirrel nests have been documented on the Project site during the Big Cypress fox squirrel survey or during any other fieldwork conducted by PAI.

Florida Panther (*Puma concolor coryi*)

The Project is located within the Primary and Secondary Zones of the USFWS Panther Focus Area (Kautz *et al.* 2006). Telemetry points from radio-collared panthers have been recorded by FWCC on the Project site. Florida panthers have been documented on the Project site in habitats classified as Pasture (FLUCFCS Code 210), and Cypress, Disturbed (FLUCFCS Code 6219). Florida panther sign (i.e., tracks, scat) has been observed in native upland and wetland habitats during listed species surveys and other fieldwork on the Project site. Florida panther tracks and scat have also been observed on the perimeter berms of the agriculture fields adjacent to native forested habitat.

Florida Black Bear (*Ursus americanus floridanus*)

FWCC Florida black bear telemetry points have been recorded on the Project site. A Florida black bear was documented by PAI during fieldwork conducted on the Project site in an area classified as Unpaved Road (FLUCFCS Code 8146). Florida black bear signs (i.e., tracks, scat) have been documented in upland and wetland habitats during listed species surveys and other fieldwork conducted on the Project site. Florida black bear tracks and scat have also been documented on the perimeter berms of the agriculture fields adjacent to native forested habitat.

Listed Plant Species Documented

Listed plant species identified on the Project site and the habitat types (i.e. FLUCFCS Codes) in which they were documented are listed in Table 2. Seven listed plant species have been documented on the Project site.

Table 2. Summary of Listed Plant Species Documented on the Town of Big Cypress

Common Name	Scientific Name	Designated Status		Observed Locations (FLUCFCS Code)
		FDACS	USFWS	
Common Wild Pine	*Tillandsia fasciculata*	E	-	4119, 4349, 6219, 6249, 6259
Giant Wild Pine	*Tillandsia utriculata*	E	-	6219, 6249, 6309
Fuzzy-Wuzzy Air Plant	*Tillandsia pruinosa*	E	-	6219, 6249, 6309
Soft-Leaved Wild Pine	*Tillandsia variabilis*	T	-	6219, 6249, 6309
Butterfly Orchid	*Encyclia tampensis*	C	-	6219, 6249, 6309
Royal Fern	*Osmunda regalis*	C	-	6219
Cinnamon Fern	*Osmunda cinnamomea*	C	-	6219, 6249

FDACS – Florida Department of Agriculture and Consumer Services
USFWS – U.S. Fish and Wildlife Service
C – Commercially Exploited
E – Endangered
T – Threatened

REFERENCES

Florida Fish and Wildlife Conservation Commission. 2006. Florida's Endangered Species, Threatened Species and Species of Special Concern. Official Lists. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida.

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APPENDIX A

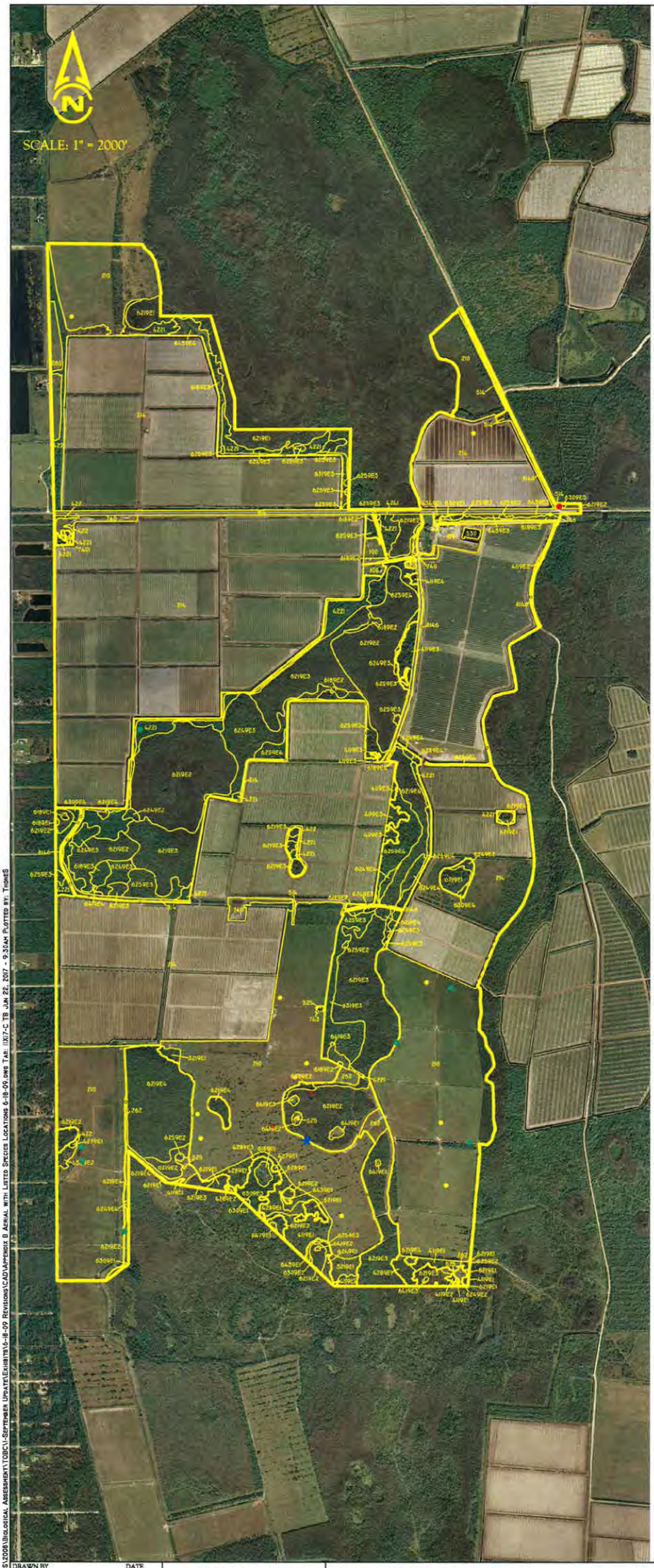
TOWN OF BIG CYPRESS
LISTED SPECIES SURVEY DATES AND WEATHER CONDITIONS

Appendix A. Listed Species Survey Dates and Weather Conditions for the Town of Big Cypress

Date	Weather Conditions
March 13, 2007	Temperature 65-80, wind 5-10 mph from N/NE, partly cloudy
March 14, 2007	Temperature 65-80, wind 0-8 mph, partly to mostly cloudy
April 11, 2007	Temperature 70-85, partly cloudy, humid, wind 0-7 mph
April 13, 2007	Temperature 70-85, clear to partly cloudy, humid, wind 0-8 mph
April 18, 2007	Temperature 60-85, mostly sunny, wind 0-10 mph
April 19, 2007	Temperature 60-85, partly cloudy, wind 0-10 mph
April 20, 2007	Temperature 65-88, partly cloudy, 5-10 mph
April 25, 2007	Temperature 63-85, partly cloudy, 0-10 mph
May 1, 2007	Temperature 65-85, partly cloudy, 0-10 mph, very humid
May 3, 20007	Temperature 67-88, mostly cloudy, very humid, light rain in the afternoon, winds 0-8 mph
May 25, 2007	Temperature mid 80s, mostly cloudy, 10 mph winds
May 29, 2007	Temperature 75-85, partly cloudy, wind 0-5 mph
May 30, 2007	Temperature low to mid 80s, partly cloudy to sunny, wind 5-15 mph
May 31, 2007	Temperature 78-85, mostly cloudy, wind 10-15 mph
June 7, 2007	Temperature 85-90, partly cloudy, wind 0-10 mph
June 8, 2007	Temperature upper 80s, mostly cloudy, wind 0-10 mph, very humid, overcast with thunder at 1300.
June 11, 2007	Temperature 82-92, partly cloudy, wind 0-10 mph, very humid
June 13, 2007	Temperature mid 80s, mostly cloudy to overcast, wind 0-5 mph
July 5, 2007	Temperature 80-90, mostly cloudy, humid, calm, intermittent rain
July 18, 2007	Temperature 77-95, partly cloudy, calm, very humid
August 2, 2007	Temperature 80-93, partly cloudy, wind 0-5 mph
October 23, 2007	Temperature 82-90, partly cloudy, wind 5-10 mph
October 24, 2007	Temperature 83-87, partly to mostly cloudy, wind 0-10 mph
October 25, 2007	Temperature mid 80s, partly cloudy, wind 5-10 mph
October 30, 2007	Temperature low 80s, mostly cloudy, wind 10-15 mph
October 31, 2007	Temperature low 80s, mostly cloudy, wind 10-15 mph
November 1, 2007	Temperature mid 80s, sunny to partly cloudy, wind 10-15 mph

APPENDIX B

AERIAL WITH LISTED SPECIES LOCATIONS



LEGEND:

- AMERICAN ALLIGATOR
- AMERICAN ALLIGATOR NEST
- BIG CYPRESS FOX SQUIRREL
- CRESTED CARACARA
- CRESTED CARACARA NEST
- FLORIDA BLACK BEAR
- FLORIDA BLACK BEAR (SIGN)
- FLORIDA PANTHER
- FLORIDA PANTHER (SIGN)
- FLORIDA SANDHILL CRANE
- LIMPKIN
- LITTLE BLUE HERON
- PEREGRINE FALCON
- ROSEATE SPOONBILL
- SNOWY EGRET
- TRI-COLORED HERON
- WHITE IBIS
- WOOD STORK

FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
100	RESIDENTIAL	7.17 Ac.±	0.2%
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	15.16 Ac.±	0.4%
210	CROPLAND AND PASTURELAND	757.76 Ac.±	20.5%
214	ROW CROPS	1903.53 Ac.±	51.5%
260	RURAL OPEN LAND	12.00 Ac.±	0.3%
262	LOW PASTURE, HYDRIC	14.65 Ac.±	0.4%
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	7.47 Ac.±	0.2%
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	23.62 Ac.±	0.6%
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	0.67 Ac.±	0.0%
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	12.99 Ac.±	0.4%
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	0.76 Ac.±	0.0%
422	BRAZILIAN PEPPER	22.38 Ac.±	0.6%
4221	BRAZILIAN PEPPER, HYDRIC	60.88 Ac.±	1.6%
4241	MELALEUCA, HYDRIC	4.94 Ac.±	0.1%
4279 E1	LIVE OAK, DISTURBED (0-24% EXOTICS)	0.64 Ac.±	0.0%
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	17.12 Ac.±	0.5%
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.10 Ac.±	0.0%
4289 E3	CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.38 Ac.±	0.0%
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	0.57 Ac.±	0.0%
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.51 Ac.±	0.1%
514	DITCH	21.40 Ac.±	0.6%
525	CATTLE POND	0.55 Ac.±	0.0%
530	RESERVOIR	1.47 Ac.±	0.0%
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	3.37 Ac.±	0.1%
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	5.53 Ac.±	0.1%
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	15.01 Ac.±	0.4%
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	0.87 Ac.±	0.0%
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	50.10 Ac.±	1.4%
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	230.93 Ac.±	6.2%
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	180.22 Ac.±	4.9%
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	89.94 Ac.±	2.4%
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	1.77 Ac.±	0.0%
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	3.00 Ac.±	0.1%
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	43.46 Ac.±	1.2%
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	6.51 Ac.±	0.2%
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	1.77 Ac.±	0.0%
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	27.97 Ac.±	0.8%
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	32.55 Ac.±	0.9%
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	10.27 Ac.±	0.3%
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	0.35 Ac.±	0.0%
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	1.75 Ac.±	0.0%
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	0.51 Ac.±	0.0%
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	1.58 Ac.±	0.0%
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	27.17 Ac.±	0.7%
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	1.33 Ac.±	0.0%
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	0.99 Ac.±	0.0%
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	3.32 Ac.±	0.1%
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	0.12 Ac.±	0.0%
6439 E1	WET PRAIRIE, DISTURBED (0-24% EXOTICS)	1.20 Ac.±	0.0%
6439 E3	WET PRAIRIE, DISTURBED (50-75% EXOTICS)	2.35 Ac.±	0.1%
6439 E4	WET PRAIRIE, DISTURBED (76-100% EXOTICS)	5.22 Ac.±	0.1%
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	0.40 Ac.±	0.0%
740	DISTURBED LAND	12.32 Ac.±	0.3%
7401	DISTURBED LAND, HYDRIC	0.52 Ac.±	0.0%
743	SPOIL	0.28 Ac.±	0.0%
814	ROAD	24.30 Ac.±	0.7%
8146	UNPAVED ROAD	22.40 Ac.±	0.6%
	TOTAL	3699.10 Ac.±	100.0%

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

PROPERTY BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

WETLAND LINES PER ABB, INC. DRAWING No. JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

LISTED SPECIES LOCATIONS ARE APPROXIMATE.

J:\2005\05CEM1481\GIS\2008\BIOLOGICAL ASSESSMENT\TOBC\1-SEPTEMBER UPDATE\EXHIBITS\6-18-09 REVISIONS\CAD\APPENDIX B AERIAL WITH LISTED SPECIES LOCATIONS 6-18-09.DWG TAB: IIXI7-C TB JUN 22, 2017 - 9:30AM PLOTTED BY: THOMES

DRAWN BY	DATE
P.F.	7/2/08
REVIEWED BY	DATE
C.G.R.	7/2/08
REVISED	DATE
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PASSARELLA & ASSOCIATES INC
Consulting Ecologists

TOWN OF BIG CYPRESS

AERIAL WITH LISTED SPECIES LOCATIONS

DRAWING No.	SHEET No.
05CEM1481	APPENDIX B

EXHIBIT 10

RURAL LANDS WEST
LISTED SPECIES SURVEY REPORT

RURAL LANDS WEST
LISTED SPECIES SURVEY REPORT

Revised June 2017

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Project No. 05CEM1481

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1.0 INTRODUCTION

This report documents the listed species surveys conducted by Passarella & Associates, Inc. (PAI) for Rural Lands West (Project). Surveys were conducted for wildlife species listed by the Florida Fish and Wildlife Conservation Commission (FWCC) and the U.S. Fish and Wildlife Service (USFWS) as endangered, threatened, or species of special concern; and for plant species listed by the Florida Department of Agriculture and Consumer Services (FDACS) and the USFWS as endangered, threatened, or commercially exploited.

For purposes of this report, the survey area is comprised of the Environmental Resource Permit (ERP) Project boundary which totals 10,264.63± acres located in Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East, Collier County (Appendix A). The Project is located along the eastern boundary of Golden Gate Estates. Oil Well Road (County Road 858) bisects the Project site and Immokalee Road is located approximately two miles to the north. The Camp Keais Strand occupies the eastern portion of the ERP Project boundary. Shaggy Cypress Swamp is located north of Oil Well Road within the ERP Project boundary.

A total of 79 vegetative associations and land uses (i.e., Florida Land Use, Cover and Forms Classification System (FLUCFCS) codes) occur on the property. The dominant land use on the property is agriculture. The land use types Cropland and Pastureland (FLUCFCS Codes 210, 211, 212, and 261) and Row Crops (FLUCFCS Code 214) comprise 50.4 percent of the site. The native areas on-site are dominated by Cypress, Disturbed (FLUCFCS Code 6219) which comprises 29.4 percent of the Project site. Native upland habitats are dominated by Pine Flatwoods, Disturbed (FLUCFCS Code 4119). A FLUCFCS map is provided as Sheets 15 through 25 of the COE Permit Drawings provided under separate cover.

2.0 PREVIOUS LISTED SPECIES SURVEYS (2007-2009)

Listed species surveys were previously conducted by PAI for the Big Cypress Stewardship District and the Town of Big Cypress. The Big Cypress Stewardship District encompasses the Rural Lands West ERP Project boundary and the former Town of Big Cypress site is included within the Rural Lands West ERP Project boundary. The previous listed species surveys were conducted in March through July 2007, October 2007, and November 2007. In addition to the listed species surveys, species-specific surveys were conducted for the Town of Big Cypress between 2007 and 2009. The results of the previous listed species surveys are summarized below.

2.1 Listed Species Survey Results (2007-2009)

Thirteen listed wildlife species and/or their sign (i.e., tracks, scat) were documented on the Project site during the surveys and other field work conducted between 2007 and 2009. The listed species documented on the property were the American alligator (*Alligator mississippiensis*), little blue heron (*Egretta caerulea*), tri-colored heron (*Egretta tricolor*), snowy egret (*Egretta thula*), white ibis (*Eudocimus albus*), roseate

spoonbill (*Ajaia ajaja*), limpkin (*Aramus guarauna*), wood stork (*Mycteria americana*), crested caracara (*Caracara cheriway*), Florida sandhill crane (*Grus canadensis pratensis*), Big Cypress fox squirrel (*Sciurus niger avicennia*), Florida black bear (*Ursus americanus floridanus*), and Florida panther (*Puma concolor coryi*). Appendix B depicts the locations of listed species, and/or their sign, documented within the boundaries of the Rural Lands West site during surveys conducted for the Big Cypress Stewardship District and the Town of Big Cypress between 2007 and 2009.

Seven listed plant species were documented on the Project site during the surveys conducted between 2007 and 2009. The listed plants identified were the common wild pine (*Tillandsia fasciculata*), giant wild pine (*T. utriculata*), fuzzy-wuzzy air plant (*T. pruinosa*), soft-leaved wild pine (*T. variabilis*), butterfly orchid (*Encyclia tampensis*), royal fern (*Osmunda regalis*), and cinnamon fern (*O. cinnamomea*).

2.2 Crested Caracara Surveys (2007 and 2009)

A nesting territory survey for the crested caracara was conducted in February and March 2007 for the Big Cypress Stewardship District, which encompasses the Project site. In addition, at the request of the USFWS, a nesting season caracara survey was conducted on the Project site from January through April 2009. No crested caracara or their nests were observed during the 2007 nesting season survey for the Big Cypress Stewardship District. However, during other fieldwork on the Project site, caracaras have been observed on-site perched in a dead pine tree and in open areas designated as cropland and pastureland. During the 2009 caracara survey, a crested caracara nest was identified in the southern portion of the Project site within a proposed conservation area. The nest was observed in a cabbage palm (*Sabal palmetto*) tree on the edge of a cypress dome surrounded by agricultural fields. In February and March 2009, the caracara pair exhibited nesting behavior. In early April 2009, no caracaras were observed in the vicinity of the nest. The condition of the nest was inspected and the nest appeared to be destroyed. Raccoon (*Procyon lotor*) scratch marks were observed on the cabbage palm tree and fragments of egg shells were found on the ground under the nest tree. No further nesting activity was documented during the remainder of the 2009 survey.

2.3 Red-Cockaded Woodpecker Surveys (2007)

Even though the Project site has limited habitat for red-cockaded woodpeckers (*Picoides borealis*) (RCW), nesting and non-nesting season foraging surveys were conducted on the Big Cypress Stewardship District site since the property is located within the known geographical range of RCWs. The nesting season foraging survey was conducted in May and June 2007 and the non-nesting season foraging survey was conducted in October and November 2007. No RCWs or RCW cavities were observed during the surveys.

2.4 Burrowing Owl Survey (2008)

A survey for the burrowing owl (*Athene cunicularia*) was conducted for the Town of Big Cypress in potentially suitable habitat in March 2008. No burrowing owls or their burrows were observed during the survey or during any other field work on-site.

2.5 Big Cypress Fox Squirrel Survey (2007-2008)

A survey to document the presence or absence of utilization of the Town of Big Cypress site by the Big Cypress fox squirrel was conducted in December 2007 and January 2008. One Big Cypress fox squirrel was observed in cypress habitat at the south end of the Project site during the fox squirrel survey. No sign of nesting by fox squirrels was detected during the survey.

2.6 Florida Bonneted Bat Survey (2007)

For the Town of Big Cypress, PAI conducted a survey for the Florida bonneted bat (*Eumops floridanus*) in November and December 2007 using an AnaBat acoustic bat detector. No Florida bonneted bats were detected by the AnaBat system during the survey.

3.0 METHODOLOGY FOR UPDATED SURVEY

3.1 Literature and Database Review

Prior to conducting the updated listed species surveys for Rural Lands West, existing literature and agency databases were reviewed to determine the potential for listed species to occur on the Project site. The literature search involved an examination of available information on protected species in the Project's geographical region. The literature sources reviewed included the FWCC's Florida's Endangered and Threatened Species (2013 and 2015); Florida Atlas of Breeding Sites for Herons and Their Allies (Runde *et al*. 1991); USFWS Habitat Management Guidelines for the Bald Eagle (*Haliaeetus leucocephalus*) in the Southeast Region (1987); the Florida Panther Habitat Preservation Plan (Logan *et al*. 1993); the Landscape Conservation Strategy Map (Kautz *et al*. 2006); and the USFWS and/or the FWCC databases for telemetry locations of the Florida panther, bald eagle, RCW, Florida black bear, Florida scrub jay (*Aphelocoma coerulescens*), crested caracara, and wading bird rookeries, such as the wood stork, in Collier County.

The wildlife agencies' database information is updated on a periodic basis and it is current through different dates, depending on the species. The FWCC information reviewed for this report is current through the noted dates for the four following species: Florida panther telemetry – June 2015; bald eagle nest locations – August 2015; Florida black bear telemetry – December 2007; crested caracara – August 2014; and wading bird locations – 1999.

3.2 Updated Field Surveys (2014-2016)

Updated surveys for listed wildlife and plant species were conducted by PAI for Rural Lands West in May and June 2014 and June through October 2015. The updated surveys were conducted within and adjacent to the proposed development areas (Survey Area) within the ERP Project boundary. The eastern portion of the ERP Project boundary which is comprised of Stewardship Sending Area (SSA) 15 (where no development is proposed) was not resurveyed. In October 2016, the boundary of the Project was expanded by 116.61± acres of Row Crops (FLUCFCS Code 214) on the northeast portion of the site. This additional area was surveyed for listed wildlife and plant species on November 4, 2016. An aerial with the Project boundary and the Survey Area is provided as Appendix C.

Surveys were conducted within the Survey Area for wildlife species listed by the FWCC and USFWS as endangered, threatened, or species of special concern; and for plant species listed by the FDACS and USFWS as endangered, threatened, or commercially exploited. The FWCC publication, "Florida's Endangered Species, Threatened Species and Species of Special Concern," updated January 2013 and September 2015, was used as a reference to identify the status of listed species. The USFWS Threatened and Endangered Species Database System was referenced online for the updated federal status of listed species. In addition, the property was surveyed for the bald eagle and/or their nests since they are protected under Florida Administrative Code 68A-16.002 and the Bald and Golden Eagle Protection Act (BGEPA).

The listed species surveys were conducted by qualified ecologists walking parallel belt transects and meandering pedestrian transects through suitable habitats to ensure that sufficient visual coverage of ground and flora was obtained. Transect spacing varied from 50 to 100 feet in forested habitats and from 50 to 150 feet in grassy open fields depending on vegetative cover and visibility. The perimeters of active row crop fields were walked and observations of listed species sign were recorded. Approximate survey transects are shown on Appendix D. At regular intervals, the ecologists stopped, remained quiet, and listened for wildlife vocalizations. Surveys were conducted during daylight hours and were conducted with the aid of 8x or 10x power binoculars. Sampling dates and qualitative descriptions of weather conditions experienced during the listed species survey periods are included as Appendix E.

In addition to the updated listed species surveys, a nesting season survey for the RCW was conducted in May and June 2014 and a non-nesting season foraging survey for the RCW was conducted in December 2014 by PAI for Rural Lands West. No RCW or RCW cavities were documented during the 2014 surveys. A report summarizing the survey methodology and results of the 2014 RCW surveys has been prepared under separate cover.

In spring 2016, an updated crested caracara survey was conducted by PAI for Rural Lands West. Adult crested caracaras were recorded foraging on the Project site during the survey and a crested caracara nest was documented approximately 3,920 feet north of the

Project site. A report summarizing the survey methodology and results of the 2016 crested caracara survey has been prepared under separate cover.

An updated Florida bonneted bat acoustic survey was conducted by PAI for Rural Lands West in 2016. The acoustic survey documented Florida bonneted bat calls on the property. A report summarizing the survey methodology and results of the 2016 Florida bonneted bat acoustic survey has been prepared under separate cover.

4.0 LITERATURE AND DATABASE REVIEW RESULTS

The results of the literature search found documented occurrences for three listed wildlife species on the Project site. These include the crested caracara, Florida black bear, and Florida panther (Appendix F). The FWCC records show a crested caracara occurrence in the southwest portion of the site (Appendix F). Two other occurrences are documented off-site approximately 2 miles northwest of the Project at the intersection of Immokalee Road and Oil Well Grade Road and 3.8 miles northeast of the site on the north end of Camp Keais Road.

Telemetry data obtained from the FWCC demonstrates that Florida panther activity occurs within the Project site, particularly within the forested systems between the agricultural fields (Appendix F). The FWCC database also contains documented Florida black bear radio-telemetry locations on the Project site (Appendix F). Although no longer a listed species, the black bear remains subject to the FWCC management plan.

There are five plant species listed on the "Less Rare Plant" list per Collier County's Land Development Code (LDC) Section 3.04.03 (Requirements for Protected Plants) that could occur within habitats on the Project site. They include the butterfly orchid, giant wild-pine, inflated wild-pine (*T. balbisiana*), stiff-leaved wild-pine (*T. fasciculata*), and twisted air plant (*T. flexuosa*). Five plant species are listed on the "Rare Plant" list per Collier County's LDC Section 3.04.03 (Requirements for Protected Plants). They include Cowhorn orchid (*Cyrtopodium punctatum*), Curtiss's milkweed (*Asclepias curtissii*), Florida clamshell orchid (*Encyclia cochleata*), Ghost orchid (*Polyrrhiza lindenii*), and West coast prickly apple (*Harrisia gracilis*).

5.0 FIELD SURVEY RESULTS (2014-2016)

A total of nine listed wildlife species were documented on the property during the 2014-2016 listed species surveys (Table 1). Although no longer a listed species, the Florida black bear is included in Table 1, as the black bear remains subject to the FWCC management plan. Approximate locations of listed wildlife species observed during the 2014-2016 listed species surveys are shown on an aerial photograph provided as Appendix G.

Table 1. Documented Listed Wildlife Species (2014-2016 Surveys)

Common Name	Scientific Name	Listing Status	
		USFWS	FWCC
Reptiles			
American alligator	*Alligator mississippiensis*	FT(S/A)	FT(S/A)
Birds			
Little blue heron	*Egretta caerulea*	--	ST
Tri-colored heron	*Egretta tricolor*	--	ST
Roseate spoonbill	*Ajaia ajaja*	--	ST
Florida sandhill crane	*Grus canadensis pratensis*	--	ST
Crested caracara	*Caracara cheriway*	FT	FT
Bald eagle	*Haliaeetus leucocephalus*	*	*
Mammals			
Big Cypress fox squirrel	*Sciurus niger avicennia*	--	ST
Florida bonneted bat	*Eumops floridanus*	FE	FE
Florida panther	*Puma concolor coryi*	FE	FE
Florida black bear	*Ursus americanus floridanus*	--	**

FWCC – Florida Fish and Wildlife Conservation Commission
USFWS – U.S. Fish and Wildlife Service
FE – Federally Endangered
FT – Federally Threatened
FT(S/A) – Federally Threatened Due to Similarity of Appearance
ST – State Threatened
*Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act
**FWCC Management Plan

5.1 American Alligator

Adult and juvenile American alligators have been documented on the Project site in association with the perimeter and internal ditches and berms within areas designated as Row Crops (FLUCFCS Code 214). American alligators were also documented within other open water features and wetland habitats on-site.

5.2 Little Blue Heron

Little blue herons were documented on the Project site foraging in habitats classified as Ditch (FLUCFCS Code 514); Cypress, Disturbed (FLUCFCS Code 6219); and Freshwater Marsh, Disturbed (FLUCFCS Code 6419). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Codes 210 and 2101) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were documented.

5.3 Tri-Colored Heron

Tri-colored herons were documented on the Project site foraging in areas designated as Low Pasture, Hydric (FLUCFCS Code 262) and Ditch (FLUCFCS Code 514). They have also been observed foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Codes 210 and 2101) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were documented.

5.4 Roseate Spoonbill

Roseate spoonbills have been documented on the Project site foraging in the perimeter and internal ditches within areas designated as Cropland and Pastureland (FLUCFCS Codes 210 and 2101) and Row Crops (FLUCFCS Code 214). No nesting sites for this species were documented.

5.5 Florida Sandhill Crane

Adult Florida sandhill cranes have been documented on the Project site foraging in fields classified as Cropland and Pastureland (FLUCFCS Codes 210 and 2101) and unplanted Row Crop (FLUCFCS Code 214) fields. Sandhill cranes have also been documented foraging in Cypress, Disturbed (FLUCFCS Code 6219). No Florida sandhill crane nests have been documented on-site.

5.6 Crested Caracara

Adult crested caracara have been documented on the Project site foraging in the fields classified as Cropland and Pastureland (FLUCFCS Codes 210 and 2101) and unplanted Row Crop (FLUCFCS Code 214) fields. Crested caracara have also been documented foraging on the perimeter of forested habitats designated as Cypress, Disturbed (FLUCFCS Code 6219) or Pine Flatwood, Disturbed (FLUCFCS Code 4119). During the 2016 crested caracara survey, two adult crested caracara were observed carrying nesting material to a nest located in a cabbage palm approximately 3,920 feet from the Project boundary. The location of this nest is depicted in Appendix H.

5.7 Bald Eagle

During field work for the Project in March 2016, a bald eagle nest that had not been previously identified was located on the Project site. The nest is located in a slash pine (*Pinus elliottii*) adjacent to Oil Well Grade and an unplanted row crop field. The nest is located approximately 1/3 mile north of Oil Well Road. The location of this nest is depicted in Appendix H.

5.8 Big Cypress Fox Squirrel

During the 2014-2016 listed species surveys, one Big Cypress fox squirrel was observed in Cypress, Disturbed (FLUCFCS Code 6219) habitat in the southern portion of the

Project site. Although stick nests were observed during the listed species surveys, the nests were not confirmed to be utilized by fox squirrels.

5.9 Florida Bonneted Bat

During the 2016 Rural Lands West Florida bonneted bat acoustic survey, 38 Florida bonneted bat calls were documented at 12 different survey stations. No Florida bonneted bat roosts have been identified on the Project site.

5.10 Florida Panther

During the 2014-2016 surveys, one Florida panther was observed on the edge of Cropland and Pastureland (FLUCFCS Codes 210 and 2101). Panther sign (i.e., tracks, scat) was observed in native upland and wetland habitats on the Project site as well as on the perimeter berms of the agriculture fields adjacent to native forested habitat.

5.11 Florida Black Bear

Florida black bears were documented during the 2014-2016 surveys in forested uplands and wetlands and on an elevated dirt road. Black bear sign (i.e., tracks, scat) has also been documented in upland and wetland habitats on the Project site as well as on the perimeter berms of the agriculture fields adjacent to native forested habitat.

5.12 Listed Plant Species

Nine listed plant species were documented on the Project site during the 2014-2016 surveys (Table 2). The listed plant species were documented in native upland and wetland habitats (FLUCFCS Codes 4119, 4349, 6179, 6219, 6249, 6259, and 6309).

Table 2. Documented Listed Plant Species (2014-2016 Surveys)

Common Name	Scientific Name	Designated Status		Observed Locations (FLUCFCS Code)
		FDACS	USFWS	
Common wild pine	*Tillandsia fasciculata*	E	-	4119, 4349, 6219, 6249, 6259
Giant wild pine	*Tillandsia utriculata*	E	-	6219, 6249, 6309
Fuzzy-wuzzy air plant	*Tillandsia pruinosa*	E	-	6219, 6249, 6309
Soft-leaved wild pine	*Tillandsia valenzuelana*	T	-	6219, 6249, 6309
Butterfly orchid	*Encyclia tampensis*	C	-	6219, 6249, 6309
Royal fern	*Osmunda regalis*	C	-	6219
Cinnamon fern	*Osmunda cinnamomea*	C	-	6219, 6249

Table 2. (Continued)

Common Name	Scientific Name	Designated Status		Observed Locations (FLUCFCS Code)
		FDACS	USFWS	
Bird's nest fern	*Asplenium serratum*	E	-	6179, 6219
Stiff-flower star orchid	*Epidendrum rigidum*	E	-	6219

FDACS – Florida Department of Agriculture and Consumer Services
USFWS – U.S. Fish and Wildlife Service
C – Commercially Exploited
E – Endangered
T – Threatened

6.0 SUMMARY

Listed species surveys were previously conducted for the Big Cypress Stewardship District and the Town of Big Cypress in March through July 2007, October 2007, and November 2007. In addition to the listed species surveys, species-specific surveys were conducted for the Town of Big Cypress between 2007 and 2009, including surveys for RCW, crested caracara, burrowing owl, Big Cypress fox squirrel, and Florida bonneted bat. The Big Cypress Stewardship District encompasses the Rural Lands West ERP Project boundary and the former Town of Big Cypress site is included within the Rural Lands West ERP Project boundary.
Updated listed species surveys were conducted by PAI in May through July 2014, June through August 2015, and November 2016 for Rural Lands West. The updated surveys included the development areas and the conservation areas internal to the proposed development. However, the conservation areas outside of the proposed development area to the east (SSA 15) were not re-surveyed for listed species since no development is proposed in these areas.

In addition to the updated listed species surveys, an updated nesting season survey for the RCW was conducted in May and June 2014 and an updated non-nesting season foraging survey was conducted in December 2014 by PAI for Rural Lands West. No RCWs or RCW cavities were documented.

An updated crested caracara survey also was conducted in January through April 2016 by PAI for Rural Lands West. Adult crested caracara were observed foraging on the Project site and one crested caracara nest was found in a cabbage palm approximately 3,920 feet north of the Rural Lands West boundary. This is a previously undocumented crested caracara nest.

An updated Florida bonneted bat acoustic survey was conducted by PAI for Rural Lands West in 2016. The acoustic survey documented Florida bonneted bat calls on the property. A report summarizing the survey methodology and results of the 2016 Florida bonneted bat acoustic survey has been prepared under separate cover.

During field work for the Project, a bald eagle nest was found on the Rural Lands West property along Oil Well Grade Road approximately 1/3 mile north of Oil Well Road. This is a previously undocumented nest location.

Tables 3 and 4 summarize the listed wildlife and plant species documented within the ERP Project boundary during the 2007-2009 surveys, 2014-2016 surveys, and other fieldwork conducted on the Project site. Twelve listed wildlife species and nine listed plant species have been documented within the ERP Project boundary. In addition to listed species, the Florida black bear and bald eagle were also observed. Although no longer listed species, the black bear remains subject to the FWCC management plan and the bald eagle is subject to the Migratory Bird Treaty Act and the BGEPA.

Table 3. Summary of Documented Listed Wildlife Species

Common Name	Scientific Name	Listing Status	
		USFWS	FWCC
Reptiles			
American alligator	*Alligator mississippiensis*	FT(S/A)	FT(S/A)
Birds			
Little blue heron	*Egretta caerulea*	--	ST
Tri-colored heron	*Egretta tricolor*	--	ST
Roseate spoonbill	*Ajaia ajaja*	--	ST
Wood stork	*Mycteria americana*	FT	FT
Florida sandhill crane	*Grus canadensis pratensis*	--	ST
Crested caracara	*Caracara cheriway*	FT	FT
Bald eagle	*Haliaeetus leucocephalus*	*	*
Mammals			
Big Cypress fox squirrel	*Sciurus niger avicennia*	--	ST
Florida bonneted bat	*Eumops floridanus*	FE	FE
Florida panther	*Puma concolor coryi*	FE	FE
Florida black bear	*Ursus americanus floridanus*	--	**

FWCC – Florida Fish and Wildlife Conservation Commission
USFWS – U.S. Fish and Wildlife Service
FE – Federally Endangered
FT – Federally Threatened
FT (S/A) – Federally Threatened due to similarity of appearance
ST – State Threatened
*Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act
**FWCC Management Plan

Table 4. Summary of Documented Listed Plant Species

Common Name	Scientific Name	Designated Status	
		FDACS	USFWS
Common wild pine	*Tillandsia fasciculata*	E	-
Giant wild pine	*Tillandsia utriculata*	E	-
Fuzzy-wuzzy air plant	*Tillandsia pruinosa*	E	-
Soft-leaved wild pine	*Tillandsia valenzuelana*	T	-
Butterfly orchid	*Encyclia tampensis*	C	-
Royal fern	*Osmunda regalis*	C	-

Table 4. (Continued)

Common Name	Scientific Name	Designated Status	
Cinnamon fern	*Osmunda cinnamomea*	C	-
Bird's nest fern	*Asplenium serratum*	E	-
Stiff-flower star orchid	*Epidendrum rigidum*	E	-

FDACS – Florida Department of Agriculture and Consumer Services
USFWS – U.S. Fish and Wildlife Service
C – Commercially Exploited
E – Endangered
T – Threatened

7.0 REFERENCES

Florida Fish and Wildlife Conservation Commission. 2013. Florida's Endangered and Threatened Species. Official Lists, Bureau of Non-Game Wildlife, Division of Wildlife. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida.

Florida Fish and Wildlife Conservation Commission. 2015. Florida's Endangered and Threatened Species. Official Lists, Bureau of Non-Game Wildlife, Division of Wildlife. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida.

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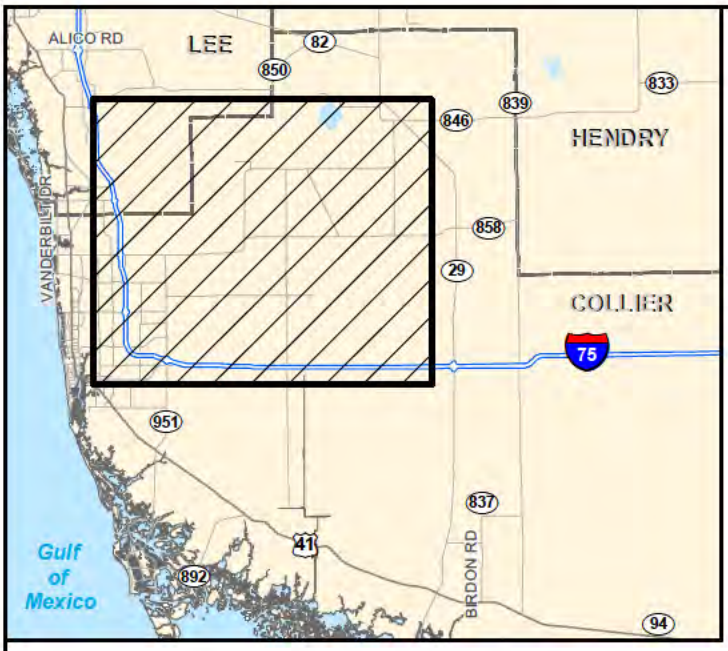
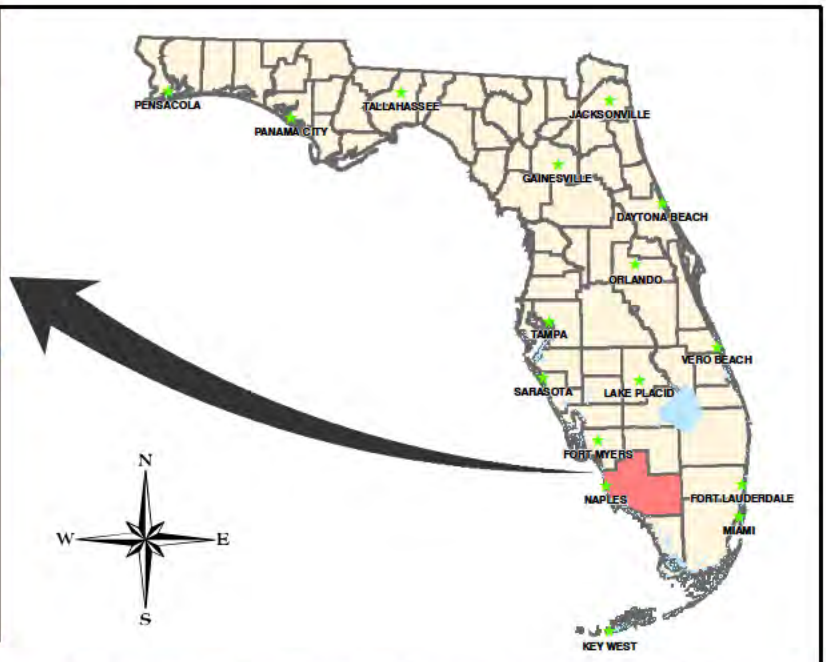
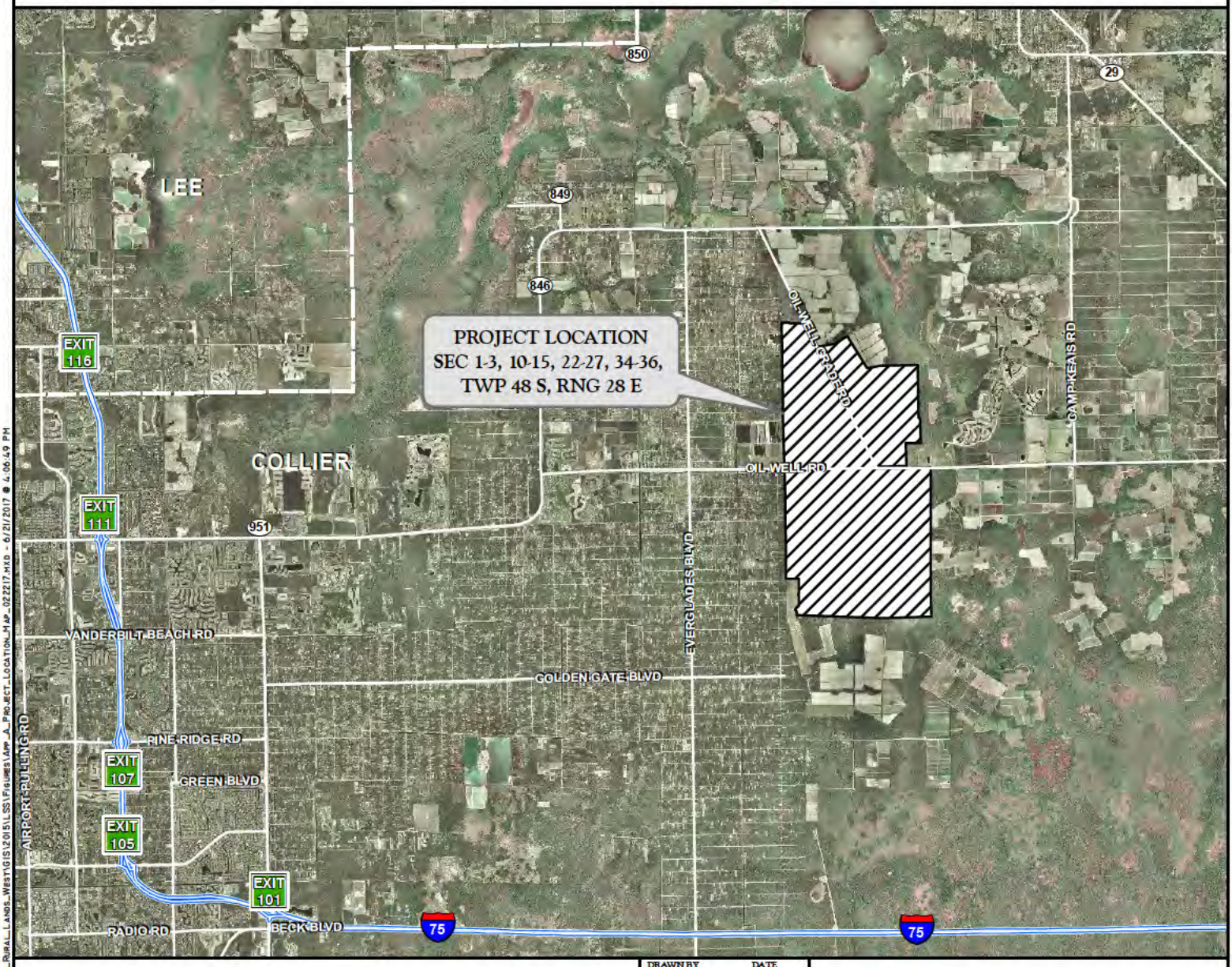
APPENDIX A

PROJECT LOCATION MAP







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APPENDIX A. PROJECT LOCATION MAP
RURAL LANDS WEST

DRAWN BY: H.H.	DATE: 6/18/15
REVIEWED BY: C.G.R.	DATE: 6/18/15
REVISED: H.H.	DATE: 1/4/17

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APPENDIX B

DOCUMENTED LISTED SPECIES LOCATIONS (2007-2009 SURVEYS)

PROJECT LOCATION

54TH AVE NE
47TH AVE NE
45TH AVE NE
43RD AVE NE
33RD AVE NE
31ST AVE NE
29TH AVE NE
27TH AVE NE
RANDALL BLVD
20TH AVE NE
18TH AVE NE
16TH AVE NE
14TH AVE NE
12TH AVE NE
10TH AVE NE
8TH AVE NE

OIL WELL GRADE RD
OIL WELL RD
ANTHEM PKWY
DESOTO BLVD N

CACA Nest

LEGEND

- RURAL LANDS WEST ERP BOUNDARY
- AA, AMERICAN ALLIGATOR
- BB, FLORIDA BLACK BEAR
- BBS, FLORIDA BLACK BEAR SIGN
- BCFS, BIG CYPRESS FOX SQUIRREL
- BE, BALD EAGLE
- CACA, CRESTED CARACARA
- CACA NEST
- FP, FLORIDA PANTHER
- FPS, FLORIDA PANTHER SIGN
- LBHE, LITTLE BLUE HERON
- ROSP, ROSEATE SPOONBILL
- SHCR, FLORIDA SANDHILL CRANE
- TCHE, TRI-COLORED HERON
- WOST, WOOD STORK

N
W E
S

0 1,100 2,200
Feet

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

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DRAWN BY	F.L.
DATE	9/3/15
REVIEWED BY	C.G.R.
DATE	9/3/15
REVISED	H.H.
DATE	1/4/17

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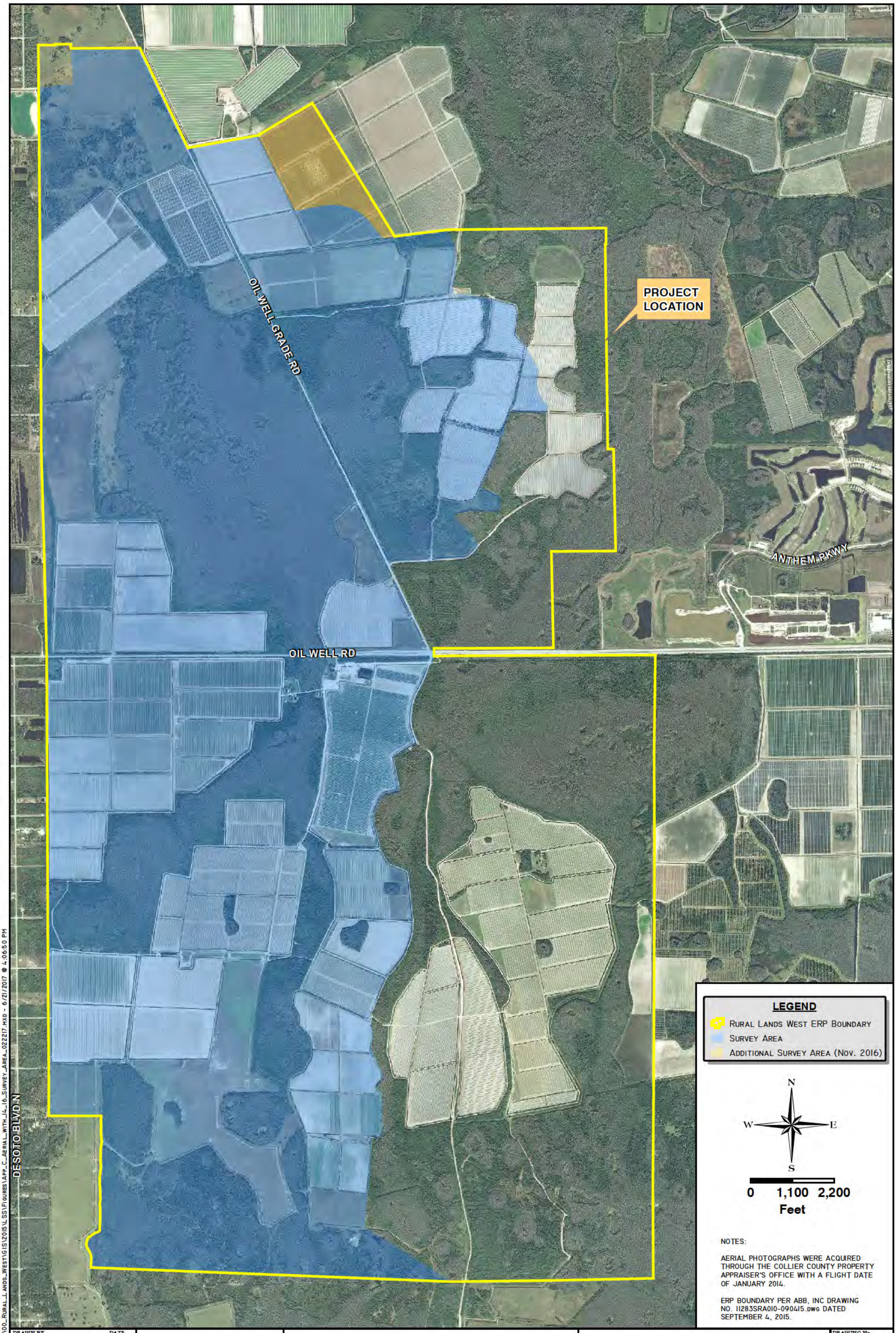
RURAL LANDS WEST
DOCUMENTED LISTED SPECIES LOCATIONS
(2007 - 2009 SURVEYS)

DRAWING No. 05CEM1481
SHEET No. APPENDIX B

APPENDIX C

AERIAL WITH 2014-2016 SURVEY AREA



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RURAL LANDS WEST
AERIAL WITH 2014 - 2016 SURVEY AREA

DRAWING No. 05CEM1481

SHEET No. APPENDIX C

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APPENDIX D

AERIAL WITH SURVEY TRANSECT LOCATIONS (2014-2016 SURVEYS)

SCALE: 1" = 2,100'

LEGEND:

- RURAL LANDS WEST ERP BOUNDARY
- SURVEY TRANSECT LOCATIONS
- SURVEY AREA
- ADDITIONAL SURVEY AREA (NOV. 2016)

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2015.

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RURAL LANDS WEST

AERIAL WITH SURVEY TRANSECT LOCATIONS (2014 - 2016 SURVEYS)

DRAWING No. 05CEM1481

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APPENDIX E

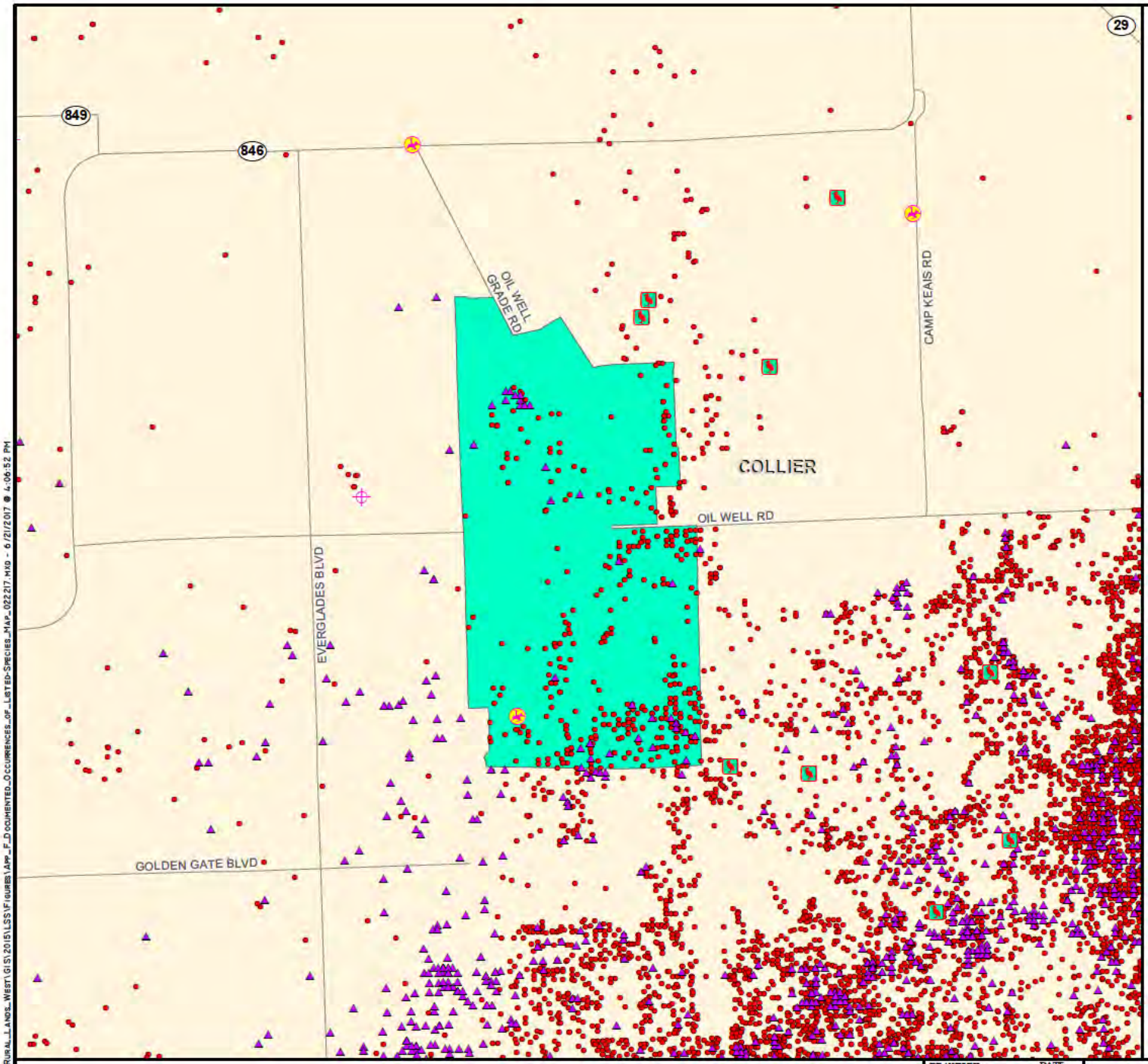
SURVEY DATES AND WEATHER CONDITIONS (2014-2016 SURVEYS)

Appendix E. Survey Dates and Weather Conditions (2014-2016 Surveys)

Date	Weather Conditions
May 21, 2014	Temperature low to high 80s, wind 5-10 mph from SSE, 25-80% cloud cover.
May 22, 2014	Temperature mid-80s to low 90s, wind NNE 5-10 mph to ENE 5-10 mph, 0-25% cloud cover.
May 30, 2014	Temperature low 80s, wind ESE 5-10 mph to S 10-15 mph.
June 11, 2014	Temperature mid to high 80s, wind ESE 0-5 mph to S 15-20 mph, 75-100% cloud cover.
June 18, 2014	Temperature low 80s, wind NNE 0-5 mph to S 25-40 mph, 50-100% cloud cover. Thunderstorms.
June 23, 2014	Temperature low 80s to low 90s, wind WSW 0-10 mph, 40-60% cloud cover.
June 24, 2014	Temperature mid-80s to mid-90s, wind ENE 0-5 mph, 20-50% cloud cover.
June 25, 2014	Temperature mid-80s to mid-90s, wind E 0-5 mph, 10 to 40% cloud cover.
July 14, 2014	Temperature low to high 80s, wind SSE 0-10 mph, 25 to 80% cloud cover. Thunderstorms.
July 15, 2014	Temperature mid-70s to low 80s, wind SE 0-10 mph, 90% cloud cover.
July 16, 2014	Temperature low 70s to mid-80s, wind WSW 0-5 mph, 75-80% cloud cover.
July 17, 2014	Temperature low 80s to mid-90s, wind SW 0-10 mph, 30-75% cloud cover.
June 9, 2015	Temperature low to high 80's wind SE 0-10 mph, 10-90% cloud cover.
June 11, 2015	Temperature mid-70s to high 80s, wind SSE 0-10 mph, 30-100% cloud cover.
June 23, 2015	Temperature mid-80s to low 90s, wind NW 0-5 mph, 20-80% cloud cover.
June 24, 2015	Temperature low 80s to low 90s, wind calm, 20-75% cloud cover.
June 30, 2015	Temperature mid-80s to mid-90s, wind calm, 40-100% cloud cover.
July 1, 2015	Temperature high 80s to high 90s, wind E 0-5 mph, 15-30% cloud cover.
July 7, 2015	Temperature low 80s, wind S 5-10 mph, 40-100% cloud cover. Thunderstorms.
July 8, 2015	Temperature low 80s to mid-80s, wind N 1-5 mph, 30-60% cloud cover.
July 9, 2015	Temperature low 80s to low 90s, wind NNE 5-10 mph, 10-60% cloud cover.
August 18, 2015	Temperature mid 80s to mid-90s, wind calm to E 1-5 mph, 20-60% cloud cover.
August 19, 2015	Temperature mid 80s to low 90s, wind calm to E 5-10 mph, 10-100% cloud cover.
November 4, 2016	Temperature low 70s to low 80s, wind N 0-10 mph, 10-40% cloud cover.

APPENDIX F

AGENCY DOCUMENTED OCCURRENCES OF LISTED SPECIES



LEGEND

- RURAL LANDS WEST
- BALD EAGLE NEST
- CRESTED CARACARA LOCATIONS
- FLORIDA PANTHER TELEMETRY
- FWCC BLACK BEAR LOCATIONS
- FWCC WADING BIRD LOCATIONS

N
W E
S

0 1 2
Miles

NOTES:

EAGLE NEST LOCATIONS WERE ACQUIRED FROM THE FWCC AUGUST 2015.

BLACK BEAR LOCATIONS WERE ACQUIRED FROM THE FWCC AUGUST 2015 AND IS CURRENT TO 2007.

CRESTED CARACARA LOCATIONS WERE ACQUIRED FROM THE USFWS AUGUST 2014.

PANTHER TELEMETRY WAS ACQUIRED FROM THE FWCC SEPTEMBER 2015 AND IS CURRENT TO JUNE 2015.

WADING BIRD ROOKERIES WERE ACQUIRED FROM THE FWCC AUGUST 2015 AND ARE CURRENT TO 1999.

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APPENDIX F. AGENCY DOCUMENTED OCCURRENCES OF LISTED SPECIES
RURAL LANDS WEST

DRAWN BY	DATE
H.H.	10/27/15
REVIEWED BY	DATE
C.G.R.	10/27/15
REVISED	DATE
H.H.	1/4/17

Consulting Ecologists
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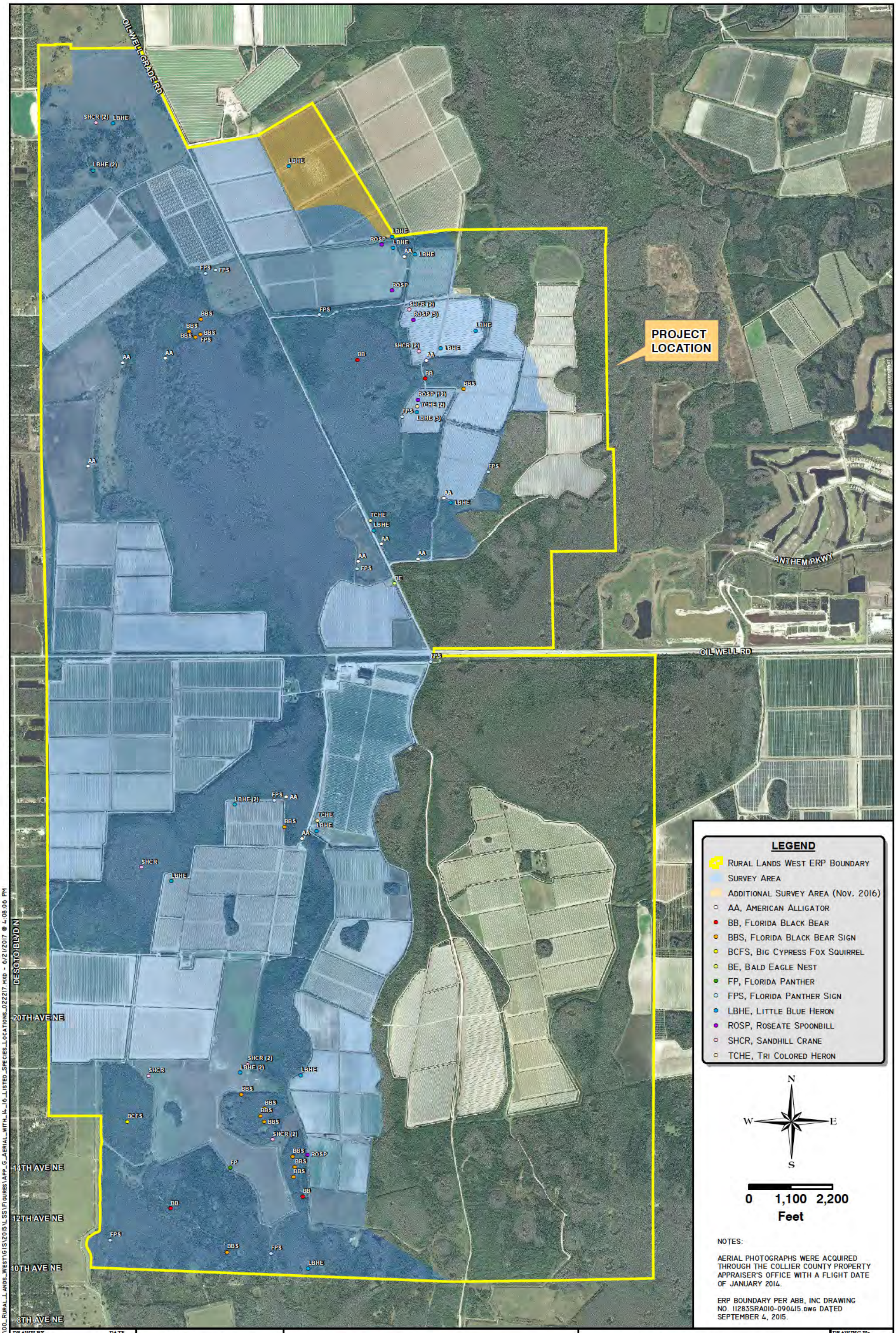
APPENDIX G

DOCUMENTED LISTED SPECIES LOCATIONS (2014-2016 SURVEYS)



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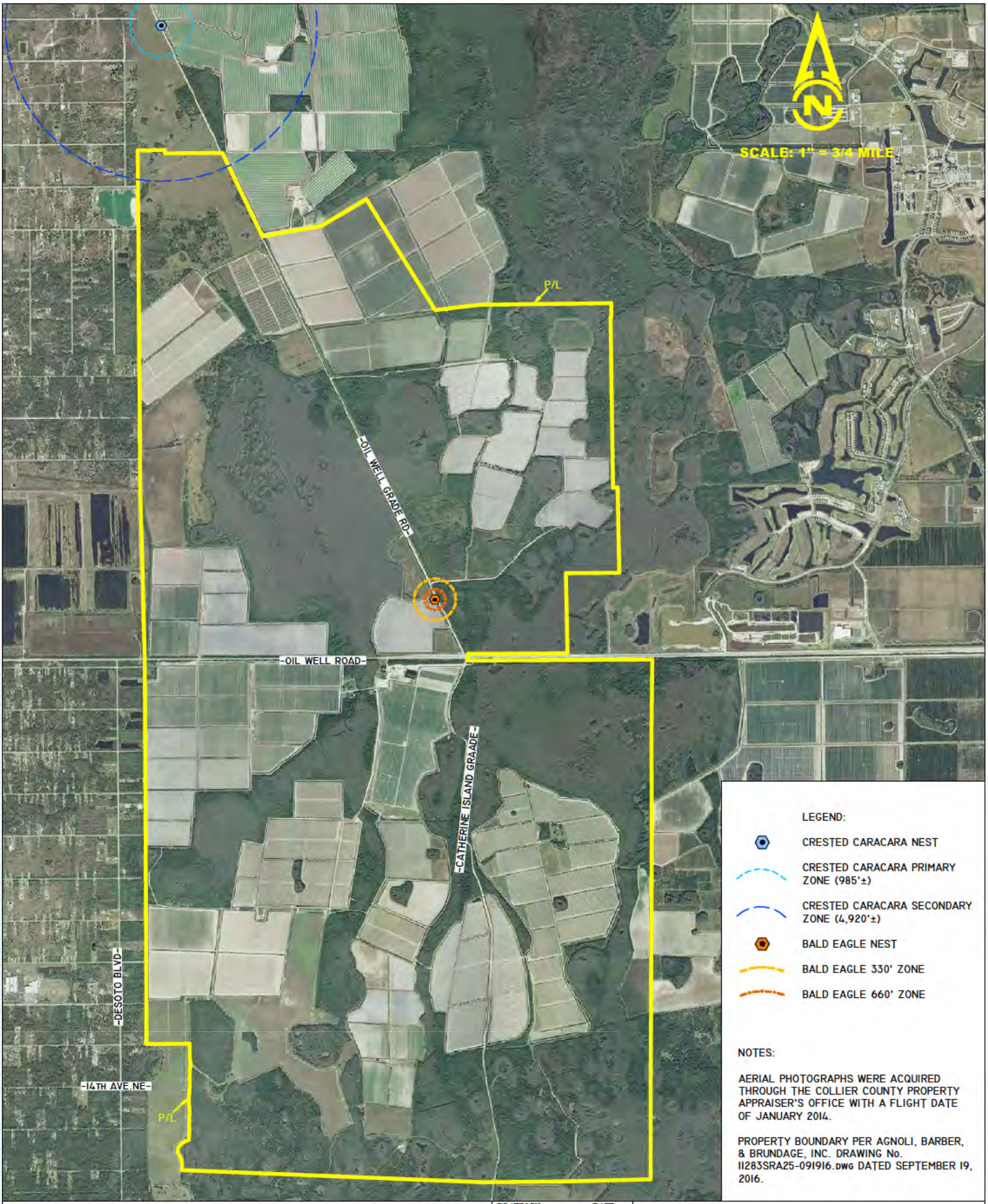
RURAL LANDS WEST
DOCUMENTED LISTED SPECIES LOCATIONS
(2014 - 2016 SURVEYS)

DRAWING No. 05CEM1481

SHEET No. APPENDIX G

APPENDIX H

AERIAL WITH CARACARA NEST AND BALD EAGLE NEST LOCATIONS



LEGEND:

- CRESTED CARACARA NEST
- CRESTED CARACARA PRIMARY ZONE (985'±)
- CRESTED CARACARA SECONDARY ZONE (4,920'±)
- BALD EAGLE NEST
- BALD EAGLE 330' ZONE
- BALD EAGLE 660' ZONE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

APPENDIX H. AERIAL WITH CARACARA NEST AND BALD EAGLE NEST LOCATIONS RURAL LANDS WEST

	DRAWN BY	DATE
	F.L.	1/15/16
	REVIEWED BY	DATE
	A.W.	1/15/16
	REVISED	DATE
	H.H.	1/4/17

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EXHIBIT 11

BIG CYPRESS STEWARDSHIP DISTRICT
CRESTED CARACARA NESTING SEASON SURVEY REPORT

BIG CYPRESS STEWARDSHIP DISTRICT
CRESTED CARACARA NESTING TERRITORY SURVEY

July 2008

Prepared For:

Collier Enterprises Management, Inc.
3003 Tamiami Trail North
Suite 400
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(239) 261-4455

Prepared By:

Passarella & Associates, Inc.
9110 College Pointe Court
Fort Myers, Florida 33919
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Project No. 05CEM1481

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INTRODUCTION

The following report documents the crested caracara (*Caracara cheriway*) nesting territory survey for the Big Cypress Stewardship District (Project). The surveys were conducted per the U.S. Fish and Wildlife Service (USFWS) guidelines in the Draft Standard Local Operating Procedures for Endangered Species (SLOPES) for Audubon's Crested Caracara (USFWS 2002*a*) to identify nesting territories for crested caracara.

The Big Cypress Stewardship District totals 22,210± acres and is located in Section 14, 23, 24, 25, 26, 27, 28, 34, and 35; Township 47 South; Range 28 East; Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; and Sections 1, 2, 3, 10, 11, 12, 15, 22, 27, and 34; Township 49 South; Range 28 East; Collier County (Figure 2). The Project site is located east of Golden Gate Estates in eastern Collier County. The site is bisected at the north end by Immokalee Road and through the middle by Oil Well Road. The Project site's surrounding land uses are a mixture of row crops and pasture; undeveloped, forested land; and residential development. The Project site is bounded by Golden Gate Estates on the west and Camp Keais Strand on the east. The northern portion of the Project site is located within the USFWS crested caracara consultation area (Figure 2).

Vegetation mapping for the Project site was conducted using 2004 Collier County rectified aerial photographs. Wetland lines were flagged in the field and survey located. Groundtruthing to map the vegetative communities on the property was conducted between December 2006 and February 2007. The Florida Land Use, Cover and Forms Classification System (FLUCFCS) (Florida Department of Transportation 1999) was utilized to map the vegetation communities. Mapping was based on Level III FLUCFCS with Level IV used to denote hydrologic conditions and disturbance. "E" codes were used to show levels of exotic invasion (i.e., Brazilian pepper (*Schinus terebinthifolius*) and melaleuca (*Melaleuca quinquenervia*)). Autodesk Map 3D 2006 software was used to determine the acreage of each mapping area, produce summaries, and generate the final FLUCFCS map (Figure 3). Due to rotation of vegetation crops, some fields may be used for pasture during interim periods of crop rotation. As such, the FLUCFCS map reflects conditions that were present on the property at the time fieldwork was conducted for the mapping effort and areas mapped as pasture may be in row crops in subsequent years.

A total of 86 vegetative associations and land uses (i.e., FLUCFCS codes) were identified on the Project site. The dominant land use is agriculture. The land use types Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214) comprise 43.2 percent of the site. Some of the pastures contain scattered cabbage palm (*Sabal palmetto*) and live oak (*Quercus virginiana*) which potentially could be used as nesting habitat for the crested caracara.

BIOLOGY OF CRESTED CARACARA

The crested caracara is a large, non-migratory raptor that feeds largely on carrion and is often found with flocks of turkey vultures (*Cathartes aura*) and black vultures (*Coragyps atratus*). The population of crested caracara found in peninsular Florida is genetically isolated from other populations of crested caracara subspecies found in the Southwestern United States and portions of Central and South America (USFWS 1999). While other subspecies of crested caracara are

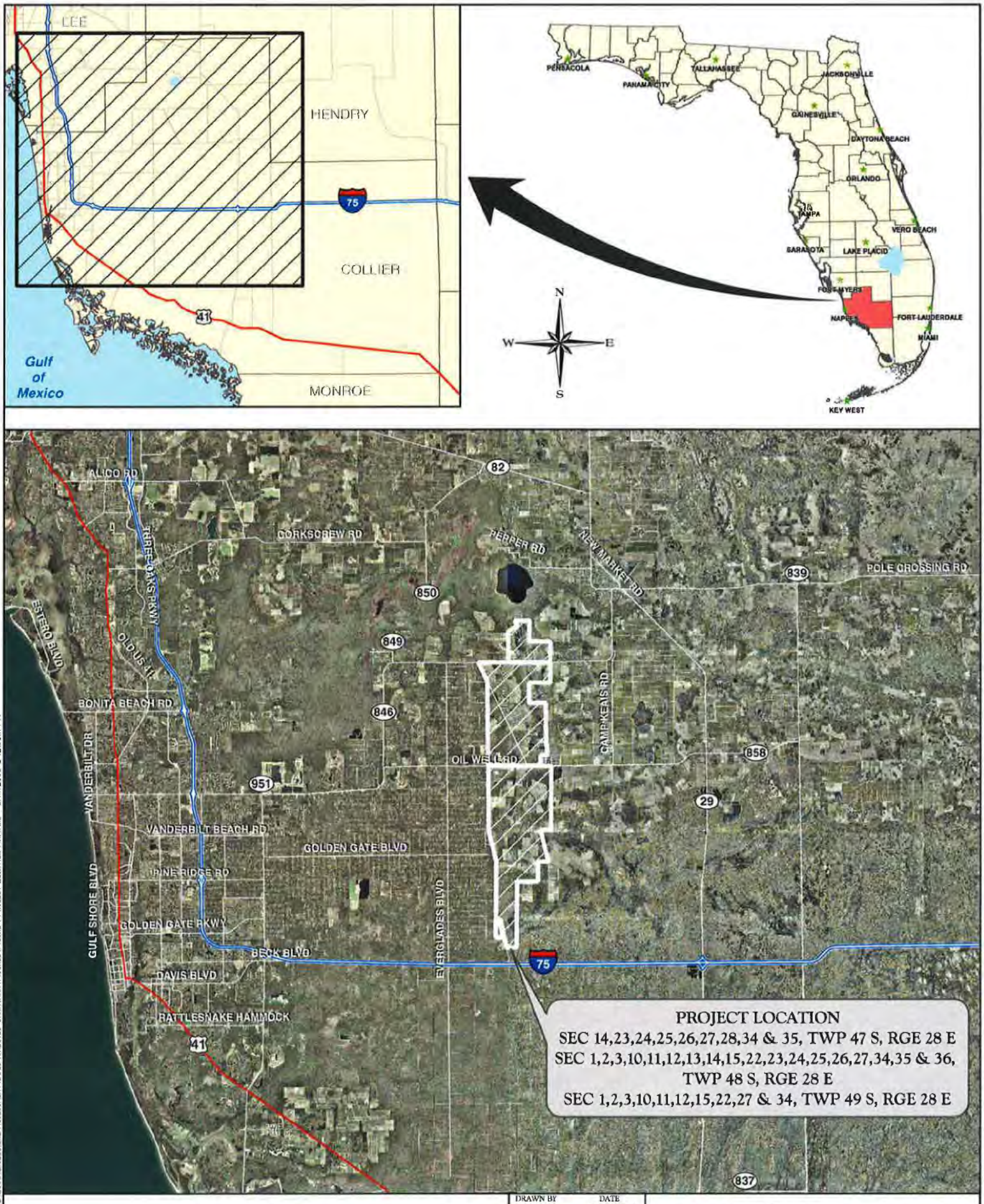

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FIGURE 1. PROJECT LOCATION MAP
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
W.C.	12/18/07
REVIEWED BY	DATE
C.G.R.	12/18/07
REVISED	DATE

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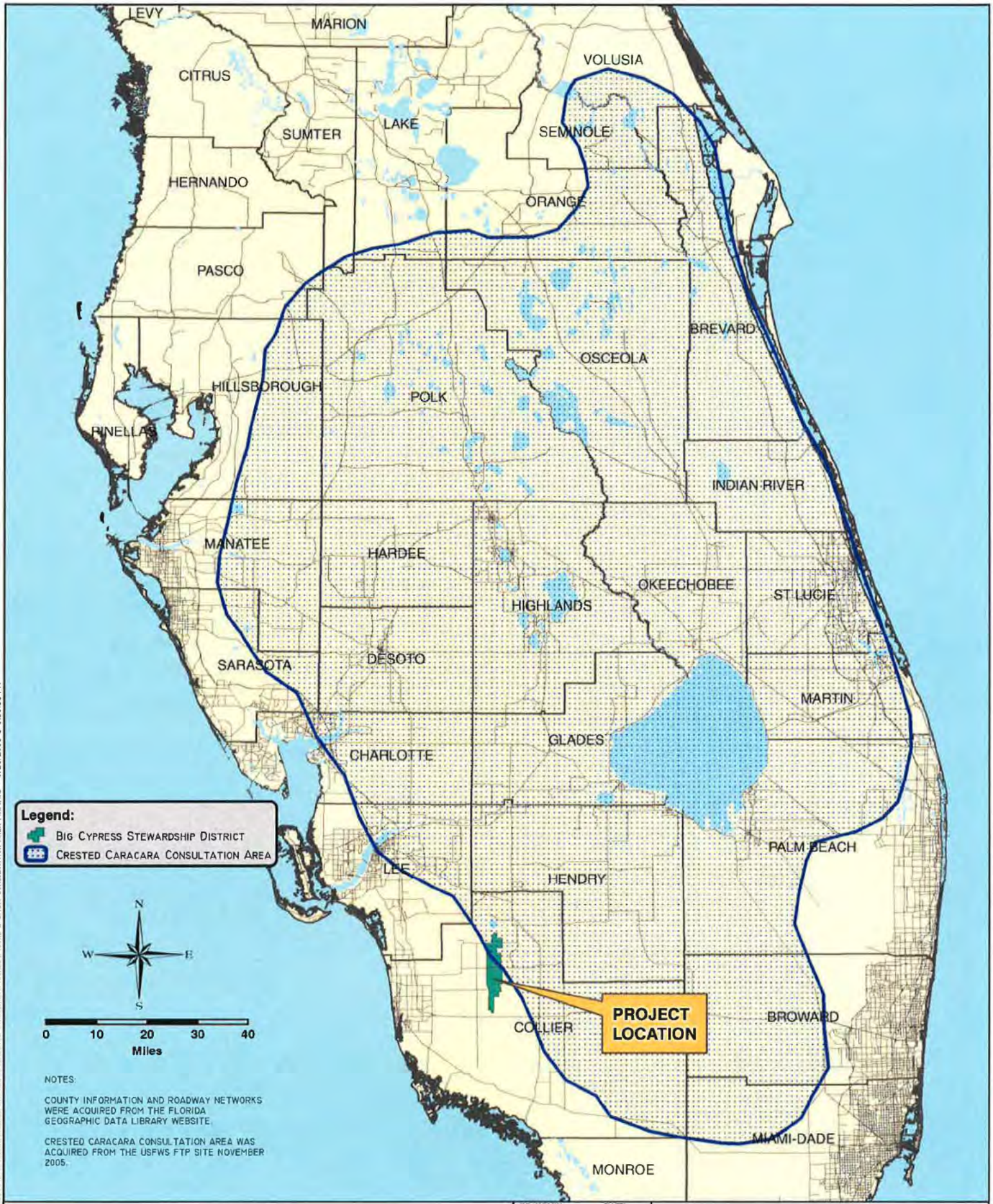

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FIGURE 2. CRESTED CARACARA CONSULTATION AREA
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
W.C.	12/18/07
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REVISED	DATE

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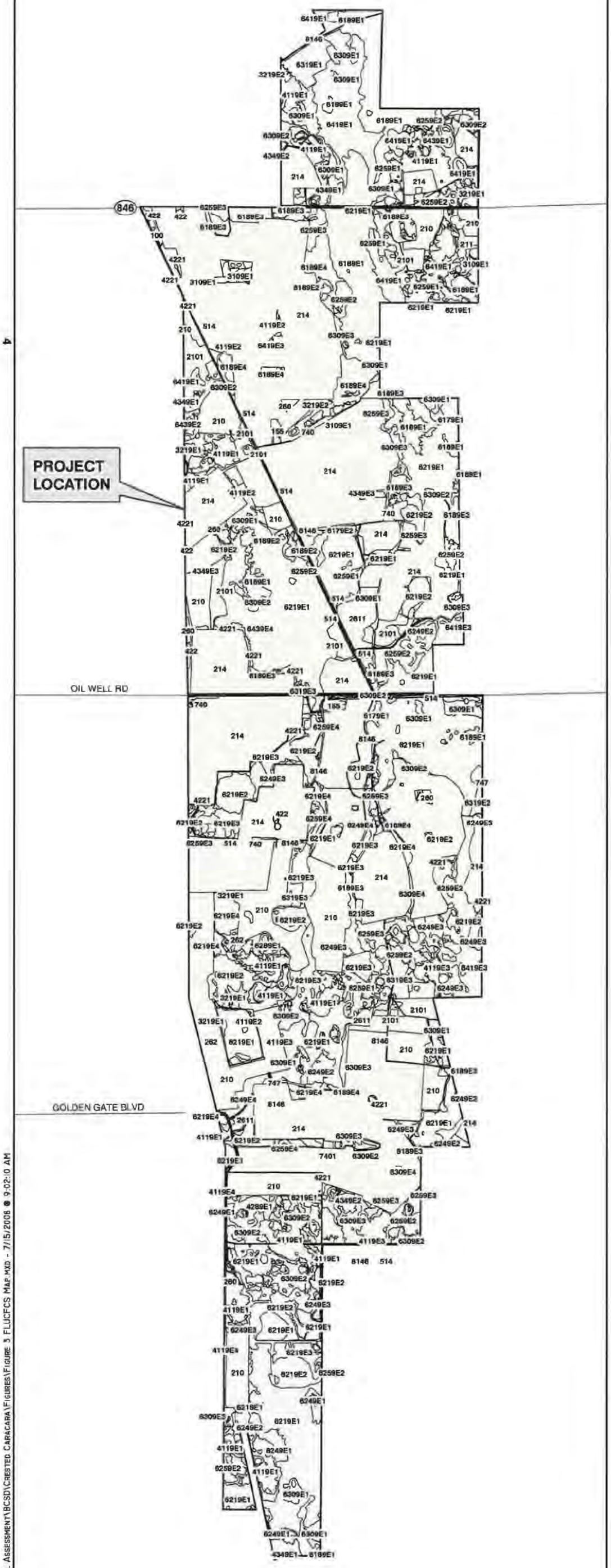
PASSARELLA & ASSOCIATES INC



Legend:

BIG CYPRESS STEWARDSHIP DISTRICT

FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
100	RESIDENTIAL	12.51 Ac.±	0.1%
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	26.24 Ac.±	0.1%
210	CROPLAND AND PASTURELAND	1858.12 Ac.±	8.4%
2101	CROPLAND AND PASTURELAND, HYDRIC	360.75 Ac.±	1.6%
211	IMPROVED PASTURE	16.50 Ac.±	0.1%
214	ROW CROPS	7374.01 Ac.±	33.2%
260	RURAL OPEN LAND	53.53 Ac.±	0.2%
2611	FALLOW CROP LAND, HYDRIC	153.07 Ac.±	0.7%
262	LOW PASTURE, HYDRIC	30.18 Ac.±	0.1%
3109 E1	DRY PRAIRIE, DISTURBED (0-24% EXOTICS)	63.41 Ac.±	0.3%
3109 E3	DRY PRAIRIE, DISTURBED (50-75% EXOTICS)	5.32 Ac.±	0.0%
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	99.30 Ac.±	0.4%
3219 E2	PALMETTO PRAIRIE, DISTURBED (25-49% EXOTICS)	23.68 Ac.±	0.1%
3219 E3	PALMETTO PRAIRIE, DISTURBED (50-75% EXOTICS)	0.25 Ac.±	0.0%
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	779.95 Ac.±	3.5%
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	149.29 Ac.±	0.7%
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	140.60 Ac.±	0.6%
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	30.61 Ac.±	0.1%
4199 E1	OTHER PINE, DISTURBED (0-24% EXOTICS)	0.47 Ac.±	0.0%
4199 E2	OTHER PINE, DISTURBED (25-49% EXOTICS)	1.87 Ac.±	0.0%
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	8.99 Ac.±	0.0%
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.56 Ac.±	0.0%
422	BRAZILIAN PEPPER	49.87 Ac.±	0.2%
4221	BRAZILIAN PEPPER, HYDRIC	124.67 Ac.±	0.6%
424	MELALEUCA	0.10 Ac.±	0.0%
4241	MELALEUCA, HYDRIC	7.10 Ac.±	0.0%
4279 E1	LIVE OAK, DISTURBED (0-24% EXOTICS)	1.94 Ac.±	0.0%
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.13 Ac.±	0.0%
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	55.85 Ac.±	0.3%
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±	0.0%
4289 E3	CABBAGE PALM, DISTURBED (50-75% EXOTICS)	7.14 Ac.±	0.0%
4299 E2	WAX MYRTLE, DISTURBED (25-49% EXOTICS)	2.73 Ac.±	0.0%
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	99.91 Ac.±	0.4%
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	57.24 Ac.±	0.3%
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	17.99 Ac.±	0.1%
4349 E4	MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	1.29 Ac.±	0.0%
514	DITCH	96.10 Ac.±	0.4%
525	CATTLE POND	3.07 Ac.±	0.0%
530	RESERVOIR	1.47 Ac.±	0.0%
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	78.67 Ac.±	0.4%
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	12.04 Ac.±	0.1%
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	8.23 Ac.±	0.0%
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	1100.97 Ac.±	5.0%
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	69.27 Ac.±	0.3%
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	302.61 Ac.±	1.4%
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	262.42 Ac.±	1.2%
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	3279.79 Ac.±	14.8%
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	1053.87 Ac.±	4.7%
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	482.26 Ac.±	2.2%
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	145.83 Ac.±	0.7%
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	163.76 Ac.±	0.7%
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	174.55 Ac.±	0.8%
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	224.89 Ac.±	1.0%
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	55.23 Ac.±	0.2%
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	161.98 Ac.±	0.7%
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	297.65 Ac.±	1.3%
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	217.66 Ac.±	1.0%
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	77.34 Ac.±	0.3%
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	20.07 Ac.±	0.1%
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.90 Ac.±	0.0%
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	6.89 Ac.±	0.0%
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±	0.0%
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	323.92 Ac.±	1.5%
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	402.25 Ac.±	1.8%
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	271.93 Ac.±	1.2%
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	19.59 Ac.±	0.1%
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	112.95 Ac.±	0.5%
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	33.41 Ac.±	0.2%
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	98.44 Ac.±	0.4%
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	630.19 Ac.±	2.8%
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	22.00 Ac.±	0.1%
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	34.49 Ac.±	0.2%
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	15.63 Ac.±	0.1%
6439 E1	WET PRAIRIE, DISTURBED (0-24% EXOTICS)	60.16 Ac.±	0.3%
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	24.94 Ac.±	0.1%
6439 E3	WET PRAIRIE, DISTURBED (50-75% EXOTICS)	17.38 Ac.±	0.1%
6439 E4	WET PRAIRIE, DISTURBED (76-100% EXOTICS)	5.22 Ac.±	0.0%
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	3.44 Ac.±	0.0%
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.65 Ac.±	0.0%
740	DISTURBED LAND	66.15 Ac.±	0.3%
7401	DISTURBED LAND, HYDRIC	13.70 Ac.±	0.1%
742	BORROW AREA	1.62 Ac.±	0.0%
743	SPOIL	1.12 Ac.±	0.0%
747	BERM	23.33 Ac.±	0.1%
8146	UNPAVED ROAD	106.99 Ac.±	0.5%
832	ELECTRICAL POWER TRANSMISSION LINE	4.35 Ac.±	0.0%
	TOTAL	22209.76 Ac.±	100.0%

N
W E
S

0 1 2 3

Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM\GIS\2008\BIOLOGICAL ASSESSMENT\BCSD\CRESTED CARACARA\FIGURES\FIGURE 3 FLUCFCS MAP.MXD - 7/15/2008 @ 9:02:0 AM

DRAWN BY	DATE
W.C.	12/18/07
REVIEWED BY	DATE
C.G.R.	12/18/07
REVISED	DATE

9110 College Pointe Court
Fort Myers, Florida 33919
Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

BIG CYPRESS STEWARDSHIP DISTRICT
FLUCFCS MAP

DRAWING No. 05CEM1481
SHEET No. FIGURE 3

not listed as threatened or endangered, the crested caracara subspecies found in Florida was listed, in July 1987, as threatened under the Endangered Species Act (16 U.S.C. 1531 *et seq*).

Crested caracara habitat consists largely of the native prairies of Florida with their associated marshes and cabbage palm (*Sabal palmetto*) and cabbage palm/oak (*Quercus* spp.) hammocks (Rodgers *et al.* 1996). Cabbage palms in open habitats are of high importance for nesting. Crested caracaras generally nest during the winter time with the peak occurring during January and February (USFWS 1999). The birds show high nest site fidelity and are often observed to construct nests in the same tree. Double clutching and re-nesting have been observed if a nest is destroyed or the eggs are taken (USFWS 2002*b*). Clutches are typically two eggs and sometimes three eggs and incubation is shared by both parents during the 28-day incubation period (USFWS 1999).

METHODOLOGY

Prior to the crested caracara survey period, potential caracara nesting habitat, specifically habitats consisting of cabbage palm and oak hammocks with nearby open fields were identified. Two survey areas (A and B) were established. The locations of Survey Areas A and B are shown on Figure 4. The crested caracara nesting territory surveys were conducted according to the following guidelines described in the USFWS Draft SLOPES for Audubon's Crested Caracara (USFWS 2002*a*). There were three survey periods of three days each. Each three-day survey period was separated by a period of one week. Surveys began within one hour following sunrise when birds should be more active within their territories, if present on-site.

Crested caracara nesting territory surveys for the Project occurred February 7, 8 and 9, 2007, February 19, 20 and 23, 2007, and March 7, 8 and 9, 2007. Surveys generally began between 7:30 a.m. and 8:30 a.m. and ended after suitable habitat had been surveyed. Surveys were conducted by qualified ecologists traversing suitable habitat by foot. Ecologists would visually inspect cabbage palm trees along transects and stop at stations along transects to look for crested caracara activity. Approximate transects and station locations were recorded on aerial photographs and crested caracara observations, if any, were recorded. Visual observations were aided by binoculars. Relative weather conditions were also recorded for each survey period. Table 1 details the time and weather conditions during each survey period.

Table 1. Summary of Weather Conditions During Crested Caracara Surveys

Date	Survey Time	Sunrise	Temperature (° F)	Conditions	Approximate Wind Speed (mph)
February 7, 2007	0745-1145	0709	50-70	Partly cloudy	0.0-10.0
February 8, 2007	0800-1200	0709	60-70	Partly cloudy	0.0-10.0
February 9, 2007	0810-1230	0708	50-60	Partly cloudy	0.0-10.0
February 19, 2007	0745-1115	0701	40-60	Partly cloudy	5.0-10.0
February 20, 2007	0810-1130	0700	40-70	Partly cloudy	5.0-10.0
February 23, 2007	0805-1100	0657	60-70	Partly cloudy	0.0-5.0

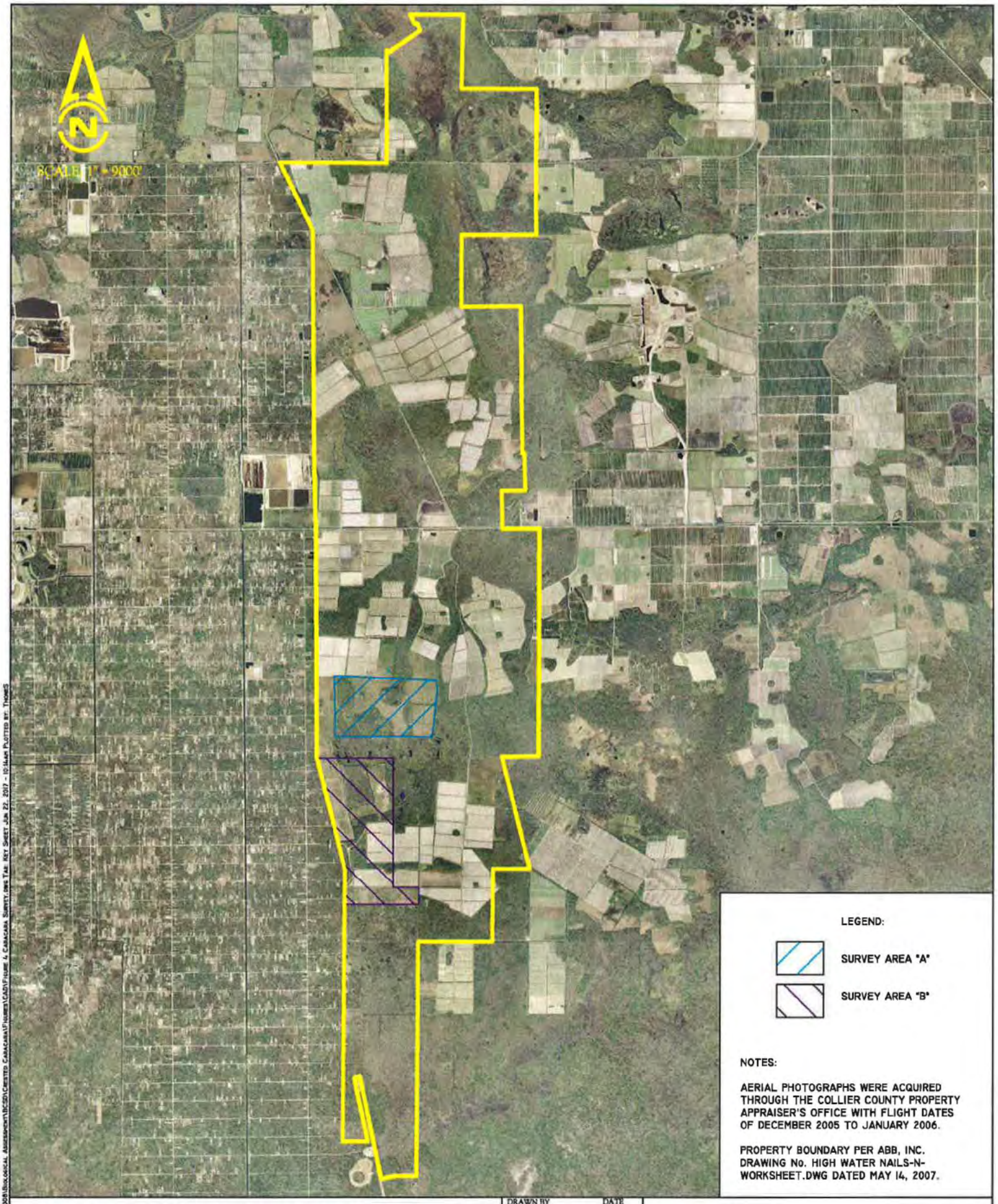


FIGURE 4. CRESTED CARACARA NESTING SEASON SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	8/15/07
REVIEWED BY	DATE
C.G.R.	8/15/07
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

Table 1. (Continued)

Date	Survey Time	Sunrise	Temperature (° F)	Conditions	Approximate Wind Speed (mph)
March 7, 2007	0740-1115	0646	50-70	Partly cloudy	3.0-10.0
March 8, 2007	0740-1040	0644	50-80	Clear	0.0-10.0
March 9, 2007	0745-1130	0643	50-80	Partly cloudy	0.0-5.0

RESULTS

No observations of crested caracara or crested caracara nests were made during the nesting territory survey periods.

Crested caracaras were observed during other fieldwork conducted on the Project site. Observations of crested caracara occurred in February 2006, March 2006, March 2007, April 2007, May 2007, and June 2007 in open fields, and perched in trees on the edges of open fields. During these observations the crested caracara's movements were watched by ecologists and potential nest trees were examined for nests. No crested caracara nests were found.

No nesting by crested caracaras has been documented on the Project site during the caracara nesting territory surveys or other field work conducted on the Project site.

REFERENCES

Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System. Procedure No. 550-010-001-a. Third Edition.

Rodgers, J.A., Jr., H.W. Kale II, H.T. Smith (*eds.*). 1996. Rare and Endangered Biota of Florida, Vol. V. Birds. University of Florida Press, Gainseville, Florida, USA.

U.S. Fish and Wildlife Service. 1999. South Florida Multi-species Recovery Plan.

U.S. Fish and Wildlife Service. 2002*a*. Standard Local Operating Procedures for Endangered Species, Audubon's Crested Caracara.

U.S. Fish and Wildlife Service. 2002*b*. Habitat Management Guidelines for Audubon's Crested Caracara in Central and Southern Florida.

EXHIBIT 12

TOWN OF BIG CYPRESS
CRESTED CARACARA NESTING SEASON SURVEY REPORT

TOWN OF BIG CYPRESS
CRESTED CARACARA NESTING SEASON SURVEY

June 2009

Prepared For:

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Project No. 05CEM1481

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INTRODUCTION

The following report documents the crested caracara (*Caracara cheriway*) nesting season survey for the Town of Big Cypress (Project) conducted January through April of 2009. The survey was conducted according to the U.S. Fish and Wildlife Service (USFWS) Draft Species Conservation Guidelines for South Florida for the Audubon's Crested Caracara (USFWS 2004).

The Project totals 3,699.10± acres and is located in Sections 14, 15, 22, 23, 26, 27, 34, and 35; Township 48 South; Range 28 East; Collier County (Appendix A). The Project site is located along the eastern boundary of Golden Gate Estates. Oil Well Road (County Road (CR) 858) bisects the northern third of the Project site. The surrounding land uses include residential development to the west and agricultural fields and undeveloped land to the north, east, and south. The Camp Keais Strand is located to the east of the Project site. The Project site is located 0.5 mile southeast of the USFWS crested caracara consultation area boundary (Appendix B).

Vegetation mapping for the Project site was conducted by Passarella & Associates, Inc. (PAI) using 2004 Collier County rectified aerial photographs. Wetland lines were flagged in the field and survey located. Groundtruthing to map the vegetative communities was conducted between December 2006 and February 2007. The Florida Land Use, Cover and Forms Classification System (FLUCFCS) (Florida Department of Transportation 1999) was utilized to map the vegetation communities. Mapping was based on Level III FLUCFCS with Level IV used to denote hydrologic conditions and disturbance at the time the field work was conducted by PAI. "E" codes were used to show levels of exotic invasion (i.e., Brazilian pepper (*Schinus terebinthifolius*) and melaleuca (*Melaleuca quinquenervia*)). AutoCAD Map 3D 2009 software was used to determine the acreage of each mapping area, produce summaries, and generate the final FLUCFCS map (Appendix C).

As part of the overall agricultural operations within the Big Cypress Stewardship District, some fields are used for improved pasture or cattle grazing during interim periods of crop rotation. As such, the FLUCFCS map reflects conditions that were present on the Project site at the time field work was conducted by PAI for the mapping effort and areas mapped as improved pasture may be in row crops in subsequent years.

A total of 57 vegetative associations and land uses (i.e., FLUCFCS codes) were identified on the Project site. Agriculture is the dominant land use on the Project site. Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214) account for 72 percent of the Project site. Some of the pastures contain scattered cabbage palm (*Sabal palmetto*) and live oak (*Quercus virginiana*) which potentially could be used as nesting habitat for the crested caracara.

A previous caracara nesting season survey was conducted in February and March 2007 for the Big Cypress Stewardship District, a 22,210± acre site which encompasses the 3,699.10± acre Project. The 2007 survey followed the guidelines outlined in the USFWS Draft Standard Local Operating Procedures for Endangered Species (SLOPES) for Audubon's Crested Caracara (USFWS 2002) No observations of crested caracara or crested caracara nests were made during the 2007 nesting season survey periods. However, crested caracaras have been observed during

other fieldwork (i.e., wetland flagging, FLUCFCS mapping, and listed species surveys) conducted on the Big Cypress Stewardship District, including the Project site. Observations of crested caracara occurred in February 2006, March 2006, March 2007, April 2007, May 2007, and June 2007 in open fields, and perched in trees on the edges of open fields. During these observations the movements of the crested caracara were watched by ecologists and potential nest trees were examined for nests. No crested caracara nests were found.

At the request of the USFWS, an additional crested caracara nesting season survey was conducted from January to April 2009 for the Town of Big Cypress.

BIOLOGY OF CRESTED CARACARA

The crested caracara is a large, non-migratory raptor that feeds both on prey and carrion and is often found with flocks of turkey vultures (*Cathartes aura*) and black vultures (*Coragyps atratus*). The population of crested caracara found in peninsular Florida is genetically isolated from other populations of crested caracara subspecies found in the Southwestern United States and portions of Central and South America (USFWS 1999). While other subspecies of crested caracara are not listed as threatened or endangered, the crested caracara subspecies found in Florida was listed, in July 1987, as threatened under the Endangered Species Act (16 U.S.C. 1531 *et seq*).

Crested caracaras primarily use open habitats including native prairies, grasslands and pastures with their associated freshwater marshes and small clumps of cabbage palms (*Sabal palmetto*), live oak (*Quercus* spp.) hammocks, and cypress (*Taxodium* spp.). Cabbage palms in open habitats are of high importance for nesting (Rodgers *et al.* 1996, Morrison 2001). The primary nesting season for the crested caracara is November through April. Egg laying typically occurs December through February. Clutch size is 1 to 3 eggs and incubation ranges from 28 to 32 days. Caracara young fledge at age 7 to 8 weeks, most in March and April (Wood 2001).

SURVEY METHODOLOGY

The crested caracara nesting season survey was conducted according to the following guidelines described in the Survey Protocol for Finding Caracara Nests, which is Appendix B of the USFWS Draft Species Conservation Guidelines for South Florida for the Audubon's Crested Caracara (USFWS 2004). Prior to the crested caracara survey, the Project site as well as applicant-owned property within 1,500 meters (4,920 feet) of the Project were reviewed for potential crested caracara nesting habitat. Specifically, habitats were identified that consisted of cabbage palm and/or oak hammocks with nearby open fields. Eight survey transect areas (A through H) were established. The locations of Transects A through H are shown on Appendix D. Transects B, C, F, and portions of A and E were located within the Project boundary. Transects D, G, H, and portions of A and E were located offsite. At the time of the survey, transects A, E, F, G and part of H contained open pasture actively used for cattle grazing with cabbage palms and/or oak trees present. Transects B, C, D, and most of H consisted of actively farmed row crop fields that were chosen for inclusion in the survey due to the presence of cabbage palm and/or live oak hammocks located on the edges of the row crop fields.

Each transect was surveyed once every other week from January 15, 2009 to April 9, 2009. Surveys generally began one-half hour prior to sunrise and concluded at 11:00 a.m. Qualified ecologists positioned themselves in locations where large open areas, unobstructed by trees, could be viewed. If no crested caracaras were observed or heard during the first 1½ to 2 hours the ecologist moved to a different strategic observation point within the transect area. The approximate locations of the observation stations were recorded on aerial photographs with the time period spent at each station. Only crested caracara observations, if any, were recorded along with data including caracara behavior, flight details, and perch trees. Visual observations were aided by binoculars and scopes. Relative weather conditions were also recorded for each survey period. Table 1 details the dates, times, and weather conditions for each survey period. Field observation forms and aerial photographs with the observation stations for each survey period are provided as Appendices E and F, respectively.

Table 1. Summary of Weather Conditions During Crested Caracara Survey

Date	Transects	Survey Time Period	Sunrise	Approximate Temperature Range	Conditions	Approximate Wind Speed
01/15/09	E, F, G, H	0645-1100	0716	48-60° F	Mostly cloudy	0-5 mph
01/16/09	A, B, C , D	0645-1100	0716	50-60° F	Mostly cloudy	5-15 mph
01/29/09	D, F, G, H	0640-1100	0713	55-75° F	Partly cloudy	0-10 mph
01/30/09	A, B, C, E	0640-1100	0712	65-72° F	Overcast	0-10 mph
02/12/09	C, E, G, H	0635-1100	0705	60-77° F	Partly cloudy	0-10 mph
02/13/09	A, B, D, F	0635-1100	0704	60-70° F	Partly cloudy	0-5 mph
02/26/09	C, E, G, H	0620-1100	0653	52-70° F	Partly cloudy	0-10 mph
02/27/09	A, B, D, F	0620-1100	0652	55-78° F	Partly cloudy	0-10 mph
03/11/09	A, E, F, G	0720-1100	0740	50-75° F	Partly cloudy	0-5 mph
03/12/09	B, C, D, H	0720-1100	0739	50-77° F	Mostly sunny	0-10 mph
03/25/09	A, C, E, G	0655-1100	0726	60-75° F	Mostly sunny	0-15 mph
03/26/09	B, D, F, H	0655-1100	0724	58-72° F	Partly cloudy	0-15 mph
04/08/09	A, C, E, G	0640-1100	0711	52-70° F	Partly cloudy	0-10 mph
04/09/09	B, D, F, H	0640-1100	0710	48-70° F	Mostly sunny	0-5 mph

SURVEY RESULTS

Crested caracaras were observed in Transects F and H during the 2009 crested caracara nesting season survey. Crested caracaras recorded on the observation forms for Transect C were actually observed within Transect F, which was adjacent to Transect C. On January 15 and 16, 2009, two crested caracaras were observed carrying sticks to a cabbage palm tree located within a cypress area on the east side of Transect F. On January 29 and 30, 2009 two crested caracaras were observed in Transect F carrying sticks to a cabbage palm tree located approximately 2,400 feet south of the location they were observed in two weeks prior. Based on the behavior of the caracaras and observation of the cabbage palm tree with the aid of a scope it was determined that a caracara nest was present as this location. The crested caracara pair was observed on and

around the nest in the south cabbage palm tree again on February 12, 13, and 27, 2009, and on March 11 and 12, 2009. The crested caracara pair was observed preening, nest building, copulating, feeding, and exhibiting behaviors indicative of incubation and possibly brooding.

On March 26, 2009 two crested caracaras were observed near the identified nest tree in Transect F engaged in courtship and copulating behaviors; however, no incubation/brooding behaviors were observed on the nest as during previous weeks of the survey.

On April 8 and 9, 2009 no crested caracaras were observed in the vicinity of the identified caracara nest. Due to the absence of caracaras, the condition of the nest was inspected at the end of the survey period on April 9, 2009. The nest appeared to be destroyed. Approximately two-thirds of the nest had been torn apart. Raccoon scratch marks were observed on the bottom one-third of the cabbage palm tree, and there were fragments of egg shells on the ground under the nest tree. The location of the nest tree was recorded using a hand-held global positioning system (GPS) unit. The GPS-recorded location of the caracara nest and the flight patterns of caracaras observed during the survey are depicted on aerial photographs provided as Appendix G.

Other observations of crested caracara during the 2009 survey included one adult crested caracara which flew from east to west over Transect H on January 15, 2009. In addition, on March 12, 2009 a juvenile crested caracara and one adult caracara were observed in the west portion of Transect F feeding on carrion with a group of vultures. The adult caracara was chased offsite to the west by one of the nesting caracaras. The juvenile caracara also flew offsite to the west. The flight patterns of the crested caracaras observed during the survey are depicted on aerial photographs provided as Appendix G.

No observations of crested caracara or crested caracara nests were made in Transects A, B, D, E, or G during the 2009 survey.

REFERENCES

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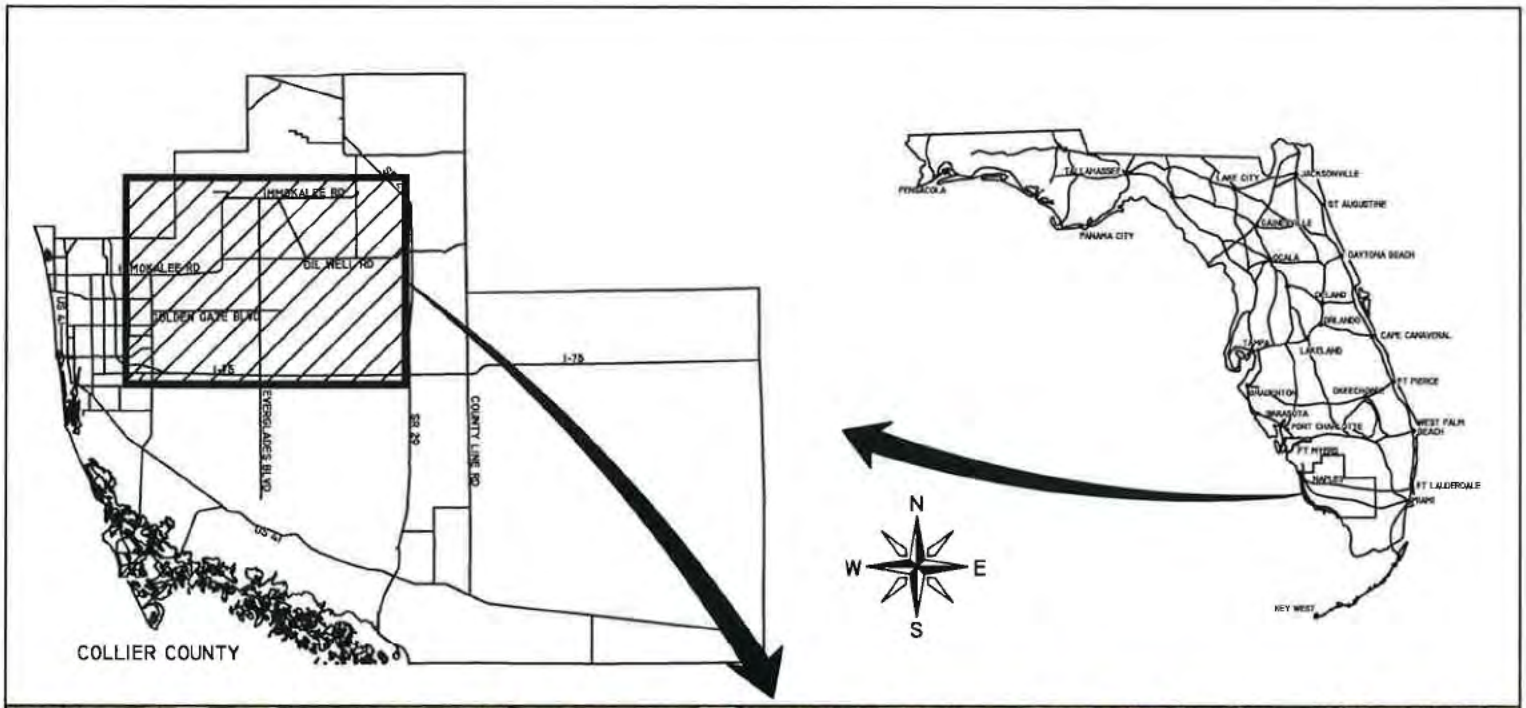
Wood, Don A. 2001. Florida's Fragile Wildlife Conservation and Management. University Press of Florida. Gainesville, FL.

APPENDIX A

PROJECT LOCATION MAP



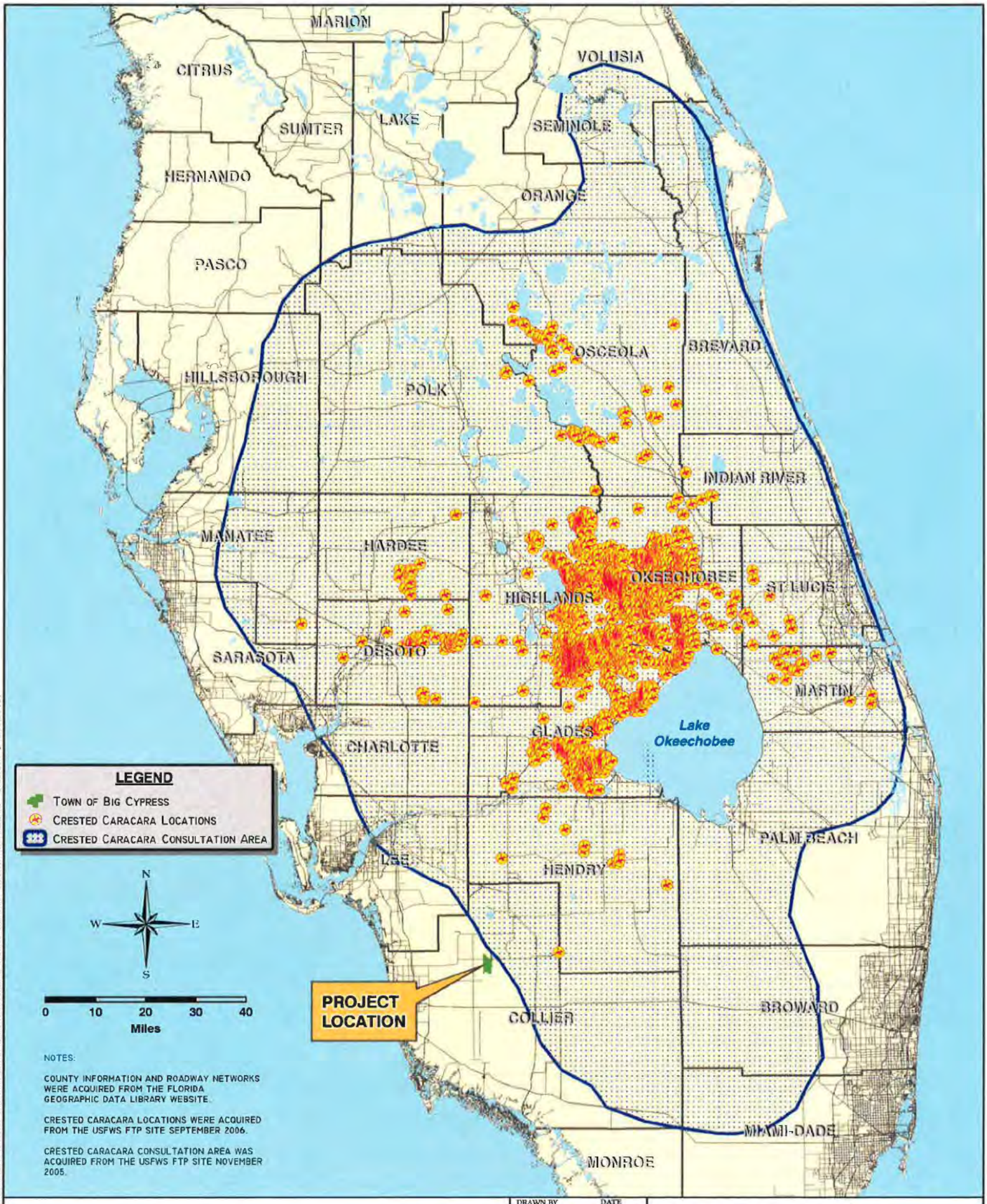
APPENDIX A. PROJECT LOCATION MAP
TOWN OF BIG CYPRESS

DRAWN BY	DATE
P.F.	10/24/07
REVIEWED BY	DATE
D.T.	10/24/07
REVISED	DATE

PASSARELLA & ASSOCIATES
Consulting Ecologists

APPENDIX B

CRESTED CARACARA CONSULTATION AREA MAP



NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

CRESTED CARACARA LOCATIONS WERE ACQUIRED FROM THE USFWS FTP SITE SEPTEMBER 2006.

CRESTED CARACARA CONSULTATION AREA WAS ACQUIRED FROM THE USFWS FTP SITE NOVEMBER 2005.

J:\2005\05CEM\GIS\TOBC\2009\CRESTED CARACARA SURVEY\EXHIBITS\APPENDIX B CRESTED CARACARA CONSULTATION AREA.MXD - 6/22/2017 @ 10:36:33 AM

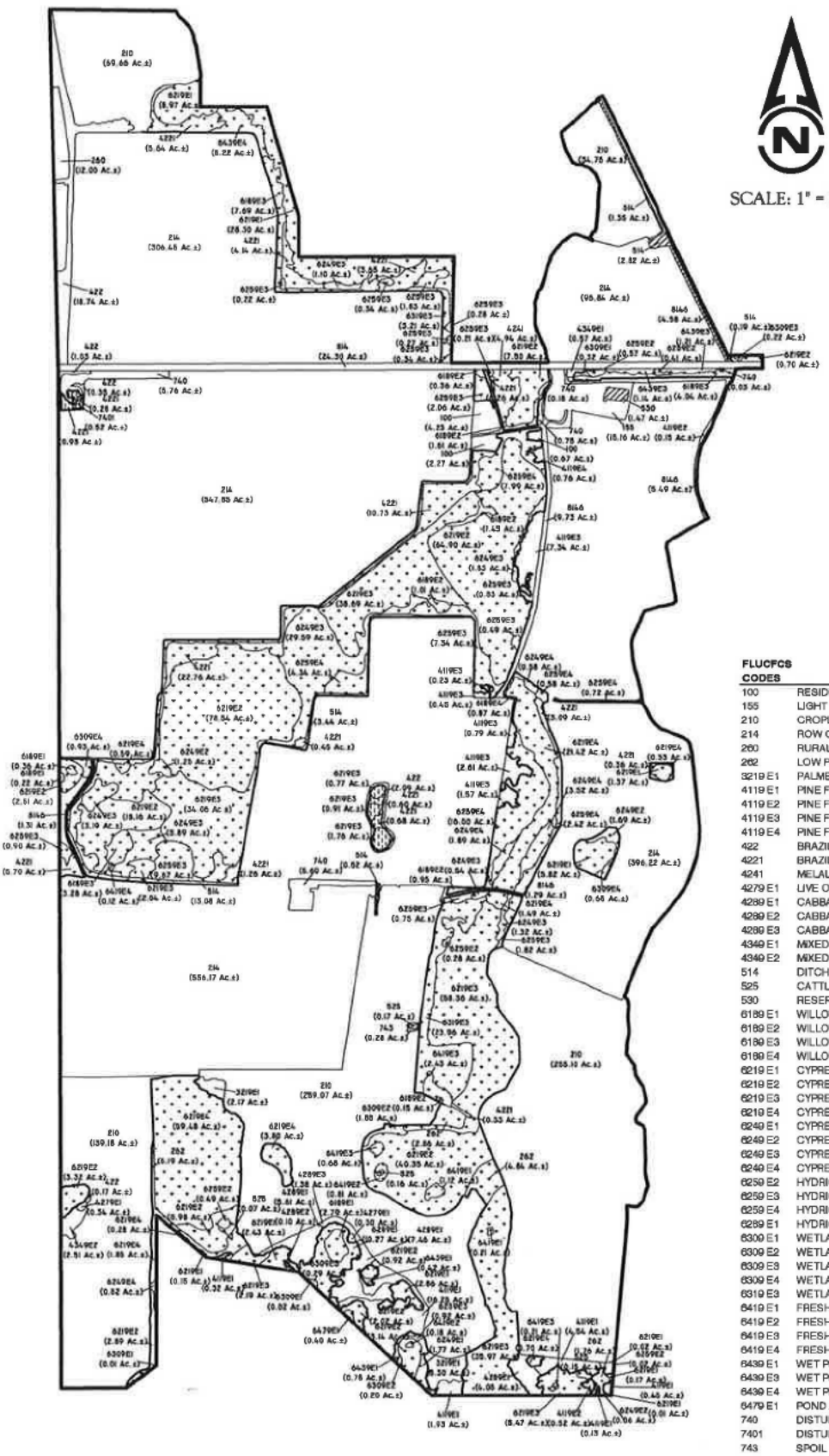
APPENDIX B. CRESTED CARACARA CONSULTATION AREA
TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	4/14/09
REVIEWED BY	DATE
K.C.P.	4/14/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC.
Consulting Ecologists

APPENDIX C

FLUCFCS AND WETLANDS MAP



SCALE: 1" = 2500'

LEGEND:

- WETLANDS (841.17 Ac±)
- ISOLATED WETLANDS (6.47 Ac±)
- WATERS (5.81 Ac.±)
- ISOLATED WATERS (0.52 Ac.±)
- SURVEYED WETLAND LINE

NOTES:

PROPERTY BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

WETLAND LINES PER ABB, INC. DRAWING No. JDL-N-WORKSHEET TO KP15JUN07.DWG DATED JUNE 15, 2007.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

UPLAND/WETLAND LIMITS HAVE BEEN APPROVED BY THE COE (APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008).

FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
100	RESIDENTIAL	7.17 Ac.±	0.2%
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	15.16 Ac.±	0.4%
210	CROPLAND AND PASTURELAND	757.76 Ac.±	20.5%
214	ROW CROPS	1903.53 Ac.±	51.5%
260	RURAL OPEN LAND	12.00 Ac.±	0.3%
262	LOW PASTURE, HYDRIC	14.65 Ac.±	0.4%
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	7.47 Ac.±	0.2%
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	23.62 Ac.±	0.6%
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	0.67 Ac.±	0.0%
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	12.99 Ac.±	0.4%
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	0.76 Ac.±	0.0%
422	BRAZILIAN PEPPER	22.38 Ac.±	0.6%
4221	BRAZILIAN PEPPER, HYDRIC	60.88 Ac.±	1.6%
4241	MELALEUCA, HYDRIC	4.94 Ac.±	0.1%
4279 E1	LIVE OAK, DISTURBED (0-24% EXOTICS)	0.64 Ac.±	0.0%
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	17.12 Ac.±	0.5%
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.10 Ac.±	0.0%
4289 E3	CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.38 Ac.±	0.0%
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	0.57 Ac.±	0.0%
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.51 Ac.±	0.1%
514	DITCH	21.40 Ac.±	0.6%
525	CATTLE POND	0.55 Ac.±	0.0%
530	RESERVOIR	1.47 Ac.±	0.0%
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	3.37 Ac.±	0.1%
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	5.53 Ac.±	0.1%
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	15.01 Ac.±	0.4%
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	0.87 Ac.±	0.0%
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	50.10 Ac.±	1.4%
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	230.93 Ac.±	6.2%
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	180.22 Ac.±	4.9%
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	89.94 Ac.±	2.4%
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	1.77 Ac.±	0.0%
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	3.00 Ac.±	0.1%
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	43.46 Ac.±	1.2%
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	6.51 Ac.±	0.2%
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	1.77 Ac.±	0.0%
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	27.97 Ac.±	0.8%
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	32.55 Ac.±	0.9%
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	10.27 Ac.±	0.3%
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	0.35 Ac.±	0.0%
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	1.75 Ac.±	0.0%
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	0.51 Ac.±	0.0%
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	1.58 Ac.±	0.0%
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	27.17 Ac.±	0.7%
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	1.33 Ac.±	0.0%
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	0.99 Ac.±	0.0%
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	3.32 Ac.±	0.1%
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	0.12 Ac.±	0.0%
6439 E1	WET PRAIRIE, DISTURBED (0-24% EXOTICS)	1.20 Ac.±	0.0%
6439 E3	WET PRAIRIE, DISTURBED (50-75% EXOTICS)	2.35 Ac.±	0.1%
6439 E4	WET PRAIRIE, DISTURBED (76-100% EXOTICS)	5.22 Ac.±	0.1%
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	0.40 Ac.±	0.0%
740	DISTURBED LAND	12.32 Ac.±	0.3%
7401	DISTURBED LAND, HYDRIC	0.52 Ac.±	0.0%
743	SPOIL	0.28 Ac.±	0.0%
814	ROAD	24.30 Ac.±	0.7%
8146	UNPAVED ROAD	22.40 Ac.±	0.6%
	TOTAL	3699.10 Ac.±	100.0%

J:\2005\05CDM\811\Cadcadd Submit\Town of Big Cypress\Appendix C FLUCFCS and COE Wetlands Map.dwg Tab: ASII-H Jan 22, 2007 - 10:42am Plotted by: Thomas

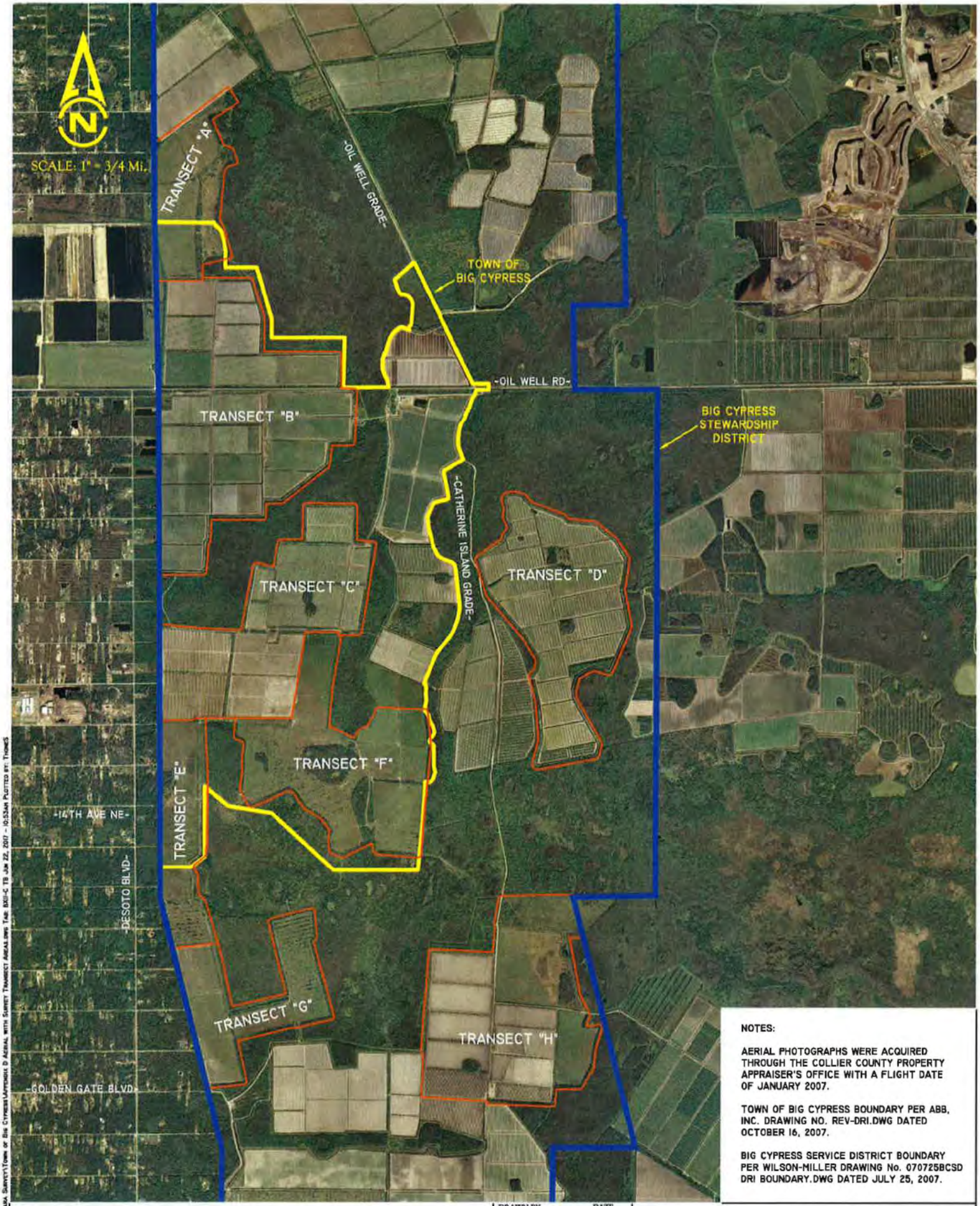
APPENDIX C. FLUCFCS AND COE WETLANDS MAP TOWN OF BIG CYPRESS

DRAWN BY	DATE
P.F.	12/16/08
REVIEWED BY	DATE
K.C.P.	12/16/08
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

APPENDIX D

AERIAL WITH SURVEY TRANSECT AREAS



NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

TOWN OF BIG CYPRESS BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

BIG CYPRESS SERVICE DISTRICT BOUNDARY PER WILSON-MILLER DRAWING No. 070725BCSD DRI BOUNDARY.DWG DATED JULY 25, 2007.

APPENDIX D. AERIAL WITH SURVEY TRANSECT AREAS TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	4/13/09
REVIEWED BY	DATE
C.G.R.	4/13/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CDHL\BIGCARSARA Survey\Town or Big Cypress\Appendix D Aerial with Survey Transect Areas.dwg Tab: BIG-C TB Jun 22, 2007 - 10:53am Plotted by: thomas

APPENDIX E

FIELD OBSERVATION FORMS

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/15/09 Start Time: 0645 End Time: 1100 Monitor: Bethany Bachelor Transect: E

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Upper 40's	3-5 mph	100%	Stratus	None
End	Low 60's	3-5 mph	95%	Stratus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
-	-	1100	*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/15/09 Start Time: 0630 End Time: 1100 Monitor: William R. Cox Transect: F

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	4-7 mph N	100%	Altostratus	None
End	Low 60's	4-7 mph N	95%	Stratus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	1000	Two adult crested caracaras (ACC) feeding with 23 black vultures. Both flew to a tall cypress tree and cleaned their bills while perched (side of face very red).
2	A	1010	Both ACCs flew short distance and perched in cypress tree.
3	A	1016	Both ACCs flew short distance and perched in cypress tree.
4	A	1025	Both ACCs flew north out of sight.
5 & 6	A	1050	ACC #1 (slightly larger and darker than #2) flew with sticks from north and then east to cabbage palm followed by ACC #2 that took sticks from cypress tree and took them to cabbage palm.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
-	A	1050	ACC #1 and #2 flew to cabbage palm building and repairing nest.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/15/09 Start Time: 0645 End Time: 1100 Monitor: Cheryl Rolph Transect: G

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Upper 40's	3-5 mph	100%	Status	None
End	Low 60's	3-5 mph	95%	Stratus	None

Flight Data

Flight No.	Age A/IM	Time	Description
			N/A

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
			N/A

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
-	-	0705	Black vultures feeding on carrion (dead cow) – east pasture edge.
			*No crested caracaras heard or observed during survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/15/09 Start Time: 0650 End Time: 1100 Monitor: Jean Ihnat Transect: H

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 40's	2-5 mph	90%	Stratus	None
End	Low 60's	2-5 mph	90%	Stratus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	1010	Observed one adult crested caracara in flight from east; flew west and southwest until out of view.
		1040	Observed two birds doing synchronous flying-could not confirm ID due to distance (over cypress to the east).

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/16/09 Start Time: 0645 End Time: 1100 Monitor: Matt Brosious Transect: A

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	5-10 mph N	100%	Cirrus	None
End	Upper 50's	10-15 mph N	75%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/16/09 Start Time: 0650 End Time: 1100 Monitor: Jean Ihnat Transect: B

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	5-10 mph NE	95%	Cirrus	None
End	Upper 50's	10-15 mph	80%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/16/09 Start Time: 0630 End Time: 1110 Monitor: William R. Cox Transect: C

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	4-8 mph N	95%	Cirrus	None
End	High 50's	6-10 mph N	50%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0740	Adult crested caracara (ACC) #1 and #2 flew from Transect C to cabbage palm area with sticks. Could not observe ACCs while driving to next observation station.
2	A	0858	ACC #2 flew from north with cypress sticks to cabbage palm.
3	A	0905	ACC #1 and #2 flew from cabbage palm to cypress tree and perched.
4	A	0919	ACC #1 and #2 flew south to cypress tree and then southeast out of sight.
5	A	0940	ACC #1 and #2 flew southeast and perched in cypress tree.
6	A	0945	ACC #1 and #2 flew from cypress tree to ground and fed.
7	A	1043	ACC #1 and #2 flew to possible nest in cabbage palm.
8	A	1048	ACC #1 flew from possible nest tree east to improved pasture, gathers grass and sticks.
9	A	1053	ACC #2 flew with grass and sticks from ground north to fence post and immediately east to possible nest tree.
10	A	1054	ACC #2 flew east perching briefly on three fence posts gathering grass and sticks from ground in improved pasture.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
	A	0913	ACCs copulate at top of cypress tree.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/16/09 Start Time: 0645 End Time: 1100 Monitor: Marijke Noens Transect: D

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0-5 mph NE	100%	Cirrus	None
End	Upper 50's	10-15 mph NE	95%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/29/09 Start Time: 0645 End Time: 1100 Monitor: Matt Brosious Transect: D

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 50's	0 mph	100%	Dense fog	None
End	Mid 70's	5-10 mph S	10%	Stratocumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/29/09 Start Time: 0630 End Time: 1230 Monitor: William R. Cox Transect: F

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 50's	Calm	100%	Dense fog	None
End	Mid 70's	6-8 mph SSW	25%	Stratocumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	1100	Adult crested caracara (ACC) #1 and #2 flew south from nest to top of berm. ACC #1 flew directly up to pine tree followed by ACC #2 with large piece of meat.
2	A	1140	ACC #1 returns to nest and incubates.
3	A	1146	ACC #2 flew behind nest tree and then north out of sight; determined at 1225 ACC #2 was feeding on ground in the improved pasture adjacent to a canal.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
2	A	1100	ACC #1 is presented with large piece of meat in pine while perched. ACC #1 flew to berm and eats meat. ACC #1 returns to pine vocalizing and throwing head back.
1	A	1140	ACC #1 returns to nest and incubates and ACC #2 continues to perch and preen.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/29/09 Start Time: 0645 End Time: 1100 Monitor: Bethany Bachelor Transect: G

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 50's	Calm	100%	Heavy fog	None
End	Mid 70's	5-10 mph	10%	Stratocumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/29/09 Start Time: 0645 End Time: 1100 Monitor: Jean Ihnat Transect: H

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 50's	0 mph	100%	Dense fog	None
End	Mid 70's	5-10 mph	15%	Stratocumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/30/09 Start Time: 0645 End Time: 1100 Monitor: Matt Brosious Transect: A

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 60's	0 mph	100%	Dense fog	None
End	Low 70's	5-10 mph	100%	Cumulus	Light

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/30/09 Start Time: 0645 End Time: 1100 Monitor: Jean Ihnat Transect: B

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 60's	0-5 mph	100%	Dense fog	None
End	Low 70's	5-10 mph	100%	Cumulus	Light

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/30/09 Start Time: 0630 End Time: 1130 Monitor: William R. Cox Transect: C

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 60's	5-7 mph SW	100%	Heavy fog	None
End	Mid 60's	6-8 mph NW	100%	Stratocumulus	Light

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0735	Two adult crested caracaras (ACC) flew north from cypress habitat to ground in improved pasture.
2	A	0747	ACC flew south with sticks out of sight.
3	A	0756	Second ACC flew south out of sight.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 01/30/09 Start Time: 0645 End Time: 1100 Monitor: Bethany Bachelor Transect: E

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 60's	Calm	100%	Dense fog	None
End	Low 70's	5-10 mph	100%	Nimbostratus	Light

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/12/09 Start Time: 0635 End Time: 1230 Monitor: William R. Cox Transect: C

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 60's	Calm	100%	Fog	None
End	Mid 70's	5-7 mph SW	15%	Stratocumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0840	Adult crested caracara (ACC) flew from cypress head in Transect F northeast then due west out of sight.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
1	A	1230	ACC perched and preened on tall slash pine-observed as driving out of property.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/12/09 Start Time: 0635 End Time: 1100 Monitor: Bethany Bachelor Transect: E

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	Calm	100%	Fog	None
End	Mid 70's	5-10 mph	30%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/12/09 Start Time: 0635 End Time: 1050 Monitor: Matt Brosious Transect: G

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	0 mph	75%	Fog	None
End	Mid 70's	5-10 mph SW	25%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/12/09 Start Time: 0635 End Time: 1100 Monitor: Jean Ihnat Transect: H

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	0-3 mph	100%	Fog	None
End	Mid 70's	2-8 mph	20%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/13/09 Start Time: 0635 End Time: 1100 Monitor: Jean Ihnat Transect: A

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 60's	0 mph	100%	Fog	None
End	Mid 70's	0-3 mph	0%	N/A	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/13/09 Start Time: 0635 End Time: 1100 Monitor: Marijke Noens Transect: B

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 60's	Calm	100%	Fog	None
End	Low 70's	Calm	0%	N/A	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/13/09 Start Time: 0635 End Time: 1100 Monitor: Bethany Bachelor Transect: D

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 60's	Calm	100%	Fog	None
End	Mid 70's	0-5 mph	100%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/13/09 Start Time: 0645 End Time: 1130 Monitor: William R. Cox Transect: F

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 60's	Calm	100%	Heavy fog; Stratocumulus	None
End	Mid 70's	4-6 mph NW	0%	N/A	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	1015	Adult crested caracara (ACC) flew from perch tree northwest out of sight.*
			*Searched for ACC from 1130 to 1230 and could not find where it was perched or feeding.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
2	A	0940	ACC flew from nest to perch tree. Both ACCs preening for 2± minutes. The ACC that was perched flew to nest and incubated. The ACC that was incubating perched and preened.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0920	Farmer drove very close to the perched ACC and nest. The perched ACC continued to preen despite truck being close (100± feet) when it drove by. Could not tell if incubating ACC was disturbed.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/26/09 Start Time: 0620 End Time: 1130 Monitor: William R. Cox Transect: C

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 50's	3 mph NE	0%	N/A	None
End	Low 70's	10 mph ENE	30%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/26/09 Start Time: 0645 End Time: 1100 Monitor: David Anthony Transect: E

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Upper 40's	Calm	0%	N/A	None
End	Low 70's	10 mph E	40%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
-	-	0651	Light fog, thicker along ground. Dissipated by 0700.
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/26/09 Start Time: 0625 End Time: 1100 Monitor: Marijke Noens Transect: G

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0 mph	0%	N/A	None
End	Low 70's	5-10 mph E	50%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/26/09 Start Time: 0625 End Time: 1100 Monitor: Jean Ihnat Transect: H

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0-2 mph	<5%	N/A	None
End	Low 70's	2-10 mph	30%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/27/09 Start Time: 0620 End Time: 1100 Monitor: Jean Ihnat Transect: A

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0-2 mph	<5%	N/A	None
End	Mid 70's	2-10 mph	20%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/27/09 Start Time: 0635 End Time: 1100 Monitor: Alicia Kruse Transect: B

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0-3 mph E	0%	N/A	None
End	Mid 70's	3-6 mph E	20%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/27/09 Start Time: 0625 End Time: 1100 Monitor: Chris Ryan Transect: D

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0-5 mph N	0%	N/A	None
End	Mid 70's	5-10 mph N	25%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 02/27/09 Start Time: 0620 End Time: 1130 Monitor: William R. Cox Transect: F

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 50's	5 mph ENE	0%	N/A	None
End	Low 70's	10 mph S	30%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0640	Adult crested caracara (ACC) flew east toward large back hoe work.
2	A	1055	ACC flew west from back hoe to tall cypress tree near nest and vocalized.
3	A	1110	ACC flew west to water trough.
4	A	1120	ACC flew east to cypress perch and vocalized.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
1	A	0620-1130	ACC in nest incubating. Could see top of head.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
1	A	0700	Pick-up truck drives close to nest at 0700. Could not see any disturbance behavior from incubating ACC. Blue pick-up with two large young men with dog cages in back of pick-up.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/11/09 Start Time: 0715 End Time: 1100 Monitor: Jean Ihnat Transect: A

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0 mph	<5%	N/A	None
End	Upper 70's	2-8 mph	20%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/11/09 Start Time: 0715 End Time: 1115 Monitor: David Anthony Transect: E

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	Calm	0%	None	None
End	Mid 70's	5 mph E	40%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
-	-	0715	Light fog. Moon shines brightly.
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/11/09 Start Time: 0715 End Time: 1115 Monitor: David Anthony Transect: E

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	Calm	0%	None	None
End	Mid 70's	5 mph E	40%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
-	-	0715	Light fog. Moon shines brightly.
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/11/09 Start Time: 0715 End Time: 1115 Monitor: William R. Cox Transect: F

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	Calm	0%	Foggy	None
End	Mid 70's	5 mph SE	50%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0810	Adult crested caracara (ACC) #1 flew from nest to water trough with solar panel.
2	A	0835	ACC #1 flew from water trough northwest out of sight.
3	A	0955	ACC #1 flew from the northwest to cypress tree and perched.
4	A	1005	ACC #1 flew from cypress tree to nest.
5	A	1005	ACC #2 flew to cypress tree and then flew south to ditch.
6	A	1040	ACC #2 flew north from ditch to perch in a cypress behind nest tree.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
2	A	0710	ACC #1 incubating/brooding and ACC #2 perched and preening in pine tree next to nest.
2	A	1040	ACC #1 incubates/broods while ACC #2 perches and preens in cypress tree near nest tree.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
-	-	0805	At 0805, a two-tone pick-up truck drove south along fence line. ACC #1 lowered head in nest while pick-up truck drove by.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/11/09 Start Time: 0715 End Time: 1100 Monitor: Cheryl Rolph Transect: G

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	Calm	0%	N/A	None
End	Mid 70's	3-5 mph	40%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/12/09 Start Time: 0715 End Time: 1100 Monitor: Jean Ihnat Transect: B

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0 mph	0%	N/A	None
End	Mid 70's	2-5 mph	15%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/12/09 Start Time: 0715 End Time: 1205 Monitor: William R. Cox Transect: C

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	2 mph ESE	0%	Foggy	None
End	Mid 70's	6 mph NE	40%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	IM	1020	Juvenile crested caracara (JCC) #1 flew south, then east, and then landed in pasture to feed with vultures.
2	A	1022	Adult crested caracara (ACC) #1 flew east then landed on ground to feed with vultures. ACC #2 also present, feeding.
3	IM	1135	JCC #1 flew northwest out of sight.
4	A	1136	ACC #2 chased ACC #1 northwest out of sight.
5	A	1201	ACC #2 returned flying southeast to solar panel water trough and then immediately flew to cypress tree near nest.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
1	A	1202	Observed ACC #3 brooding on nest. ACC #2 perched on cypress tree next to nest.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/12/09 Start Time: 0715 End Time: 1115 Monitor: David Anthony Transect: D

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Mid 50's	Calm	0%	N/A	None
End	Upper 70's	3 mph ENE	20%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
-	-	0715	Light fog on ground.
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/12/09 Start Time: 0725 End Time: 1100 Monitor: Cheryl Rolph Transect: H

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	Calm	0%	N/A	None
End	Mid 70's	3-8 mph	20%	Cumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracaras heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/25/09 Start Time: 0655 End Time: 1100 Monitor: Jean Ihnat Transect: A

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	2-5 mph	5%	Cirrus	None
End	Mid 70's	10-15 mph	10%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/25/09 Start Time: 0655 End Time: 1130 Monitor: William R. Cox Transect: C

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	Calm	5%	Stratocumulus	None
End	Mid 70's	5-10 mph	5%	Stratocumulus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/25/09 Start Time: 0645 End Time: 1100 Monitor: Bethany Bachelor Transect: E

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 50's	Calm	10%	Cirrus	None
End	Mid 70's	10-15 mph	10%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/25/09 Start Time: 0700 End Time: 1100 Monitor: Cheryl Rolph Transect: G

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	3-5 mph	0%	N/A	None
End	Mid 70's	10-15 mph	10%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/26/09 Start Time: 0700 End Time: 1100 Monitor: Chris Ryan Transect: B

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	Calm	10%	Cirrus	None
End	Low 70's	5-15 mph E	30%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/26/09 Start Time: 0650 End Time: 1100 Monitor: Marijke Noens Transect: D

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	0 mph	15%	Cirrus	None
End	Low 70's	10-15 mph E	25%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/26/09 Start Time: 0645 End Time: 1100 Monitor: William R. Cox Transect: F

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 60's	Calm	40%	Cirrus	None
End	Mid 70's	8-10 mph SE	50%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0810	Two adult crested caracaras (ACC) flew east over cypress head out of sight.
2	A	1040	Two ACCs flew to pine tree south of nest tree in roller coaster courtship flight.
3	A	1052	Two ACCs flew east over cypress head out of sight.
4	A	1057	Two ACCs flew from east to nest tree. One ACC sat in nest and the other flew northwest out of sight.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
1	A	0705	Can observe head of ACC in nest. At 0805, ACC left nest and joined other ACC in pine next to nest tree.
2	A	1040	ACC copulate twice in six minutes.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 03/26/09 Start Time: 0700 End Time: 1100 Monitor: Cheryl Rolph Transect: H

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 50's	3-5 mph	20%	Cirrus/low fog	None
End	Low 70's	10-15 mph E	40%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 04/08/09 Start Time: 0640 End Time: 1100 Monitor: Jean Ihnat Transect: A

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0-2 mph	90%	Stratocumulus	None
End	Upper 60's	5-10 mph	0%	N/A	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 04/08/09 Start Time: 0630 End Time: 1200 Monitor: William R. Cox Transect: C

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	4-6 mph NE	60%	Cirrus	None
End	High 60's	8-12 mph NE	0%	N/A	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 04/08/09 Start Time: 0640 End Time: 1100 Monitor: Bethany Bachelor Transect: E

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	Calm	70%	Cirrus	None
End	High 60's	5-10 mph	0%	N/A	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 04/08/09 Start Time: 0645 End Time: 1100 Monitor: Cheryl Rolph Transect: G

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	0-5 mph	90%	Stratocumulus	None
End	High 60's	5-10 mph	0%	N/A	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 04/09/09 Start Time: 0640 End Time: 1100 Monitor: Jean Ihnat Transect: B

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 40's	0-2 mph	10%	Cirrus	None
End	Mid 70's	2-5 mph	5%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 04/09/09 Start Time: 0640 End Time: 1100 Monitor: Bethany Bachelor Transect: D

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 40's	Calm	20%	Cirrus	None
End	Low 70's	3-5 mph	10%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 04/09/09 Start Time: 0630 End Time: 1200 Monitor: William R. Cox Transect: F

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	Low 50's	Calm	30%	Cirrus	None
End	Low 70's	4 mph SW	40%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Caracara nest has been destroyed. Raccoon scratch marks were observed at the bottom ⅓ of the cabbage palm tree. Egg fragments were also seen at the base of the cabbage palm tree. The nest could have been destroyed by a raccoon; however, the cause of the lost nest is unknown. No caracara were observed. Nest location was recorded with GPS.

TOWN OF BIG CYPRESS
CARACARA MONITORING
FIELD DATA FORM

Date: 04/09/09 Start Time: 0645 End Time: 1105 Monitor: Cheryl Rolph Transect: H

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Cloud Type	Rain
Start	High 40's	Calm	10%	Cirrus	None
End	Low 70's	3-5 mph	< 5%	Cirrus	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

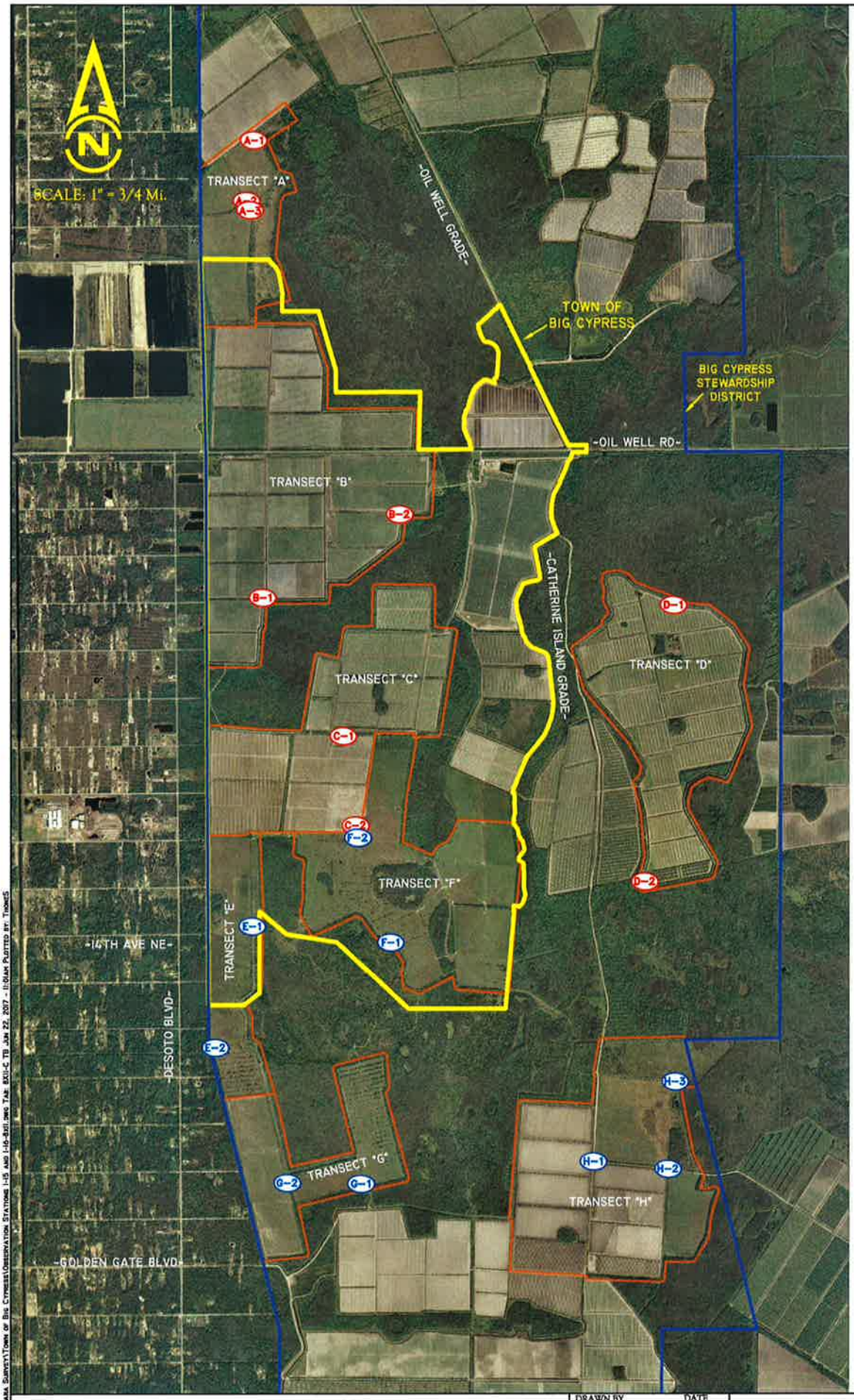
General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			*No crested caracara heard or observed during the survey.

APPENDIX F

AERIAL PHOTOGRAPHS WITH OBSERVATION STATIONS



A-1 JANUARY 15 (TYP.)

A-2 JANUARY 16 (TYP.)

TRANSECT A

A-1 OBSERVATION STATION 1
0645-0815

A-2 OBSERVATION STATION 2
0815-0945

A-3 OBSERVATION STATION 3
0945-1100

TRANSECT B

B-1 OBSERVATION STATION 1
0650-0900

B-2 OBSERVATION STATION 2
0900-1100

TRANSECT C

C-1 OBSERVATION STATION 1
0630-0800

C-2 OBSERVATION STATION 2
0840-1100

TRANSECT D

D-1 OBSERVATION STATION 1
0645-0845

D-2 OBSERVATION STATION 2
0850-1100

TRANSECT E

E-1 OBSERVATION STATION 1
0615 TO 0815

E-2 OBSERVATION STATION 2
0845 TO 1100

TRANSECT F

F-1 OBSERVATION STATION 1
0630-0830

F-2 OBSERVATION STATION 2
0830-1100

TRANSECT G

G-1 OBSERVATION STATION 1
0645-0845

G-2 OBSERVATION STATION 2
0900-1100

TRANSECT H

H-1 OBSERVATION STATION 1
0650-0815

H-2 OBSERVATION STATION 2
0815-0945

H-3 OBSERVATION STATION 3
0945-1100

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

TOWN OF BIG CYPRESS BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

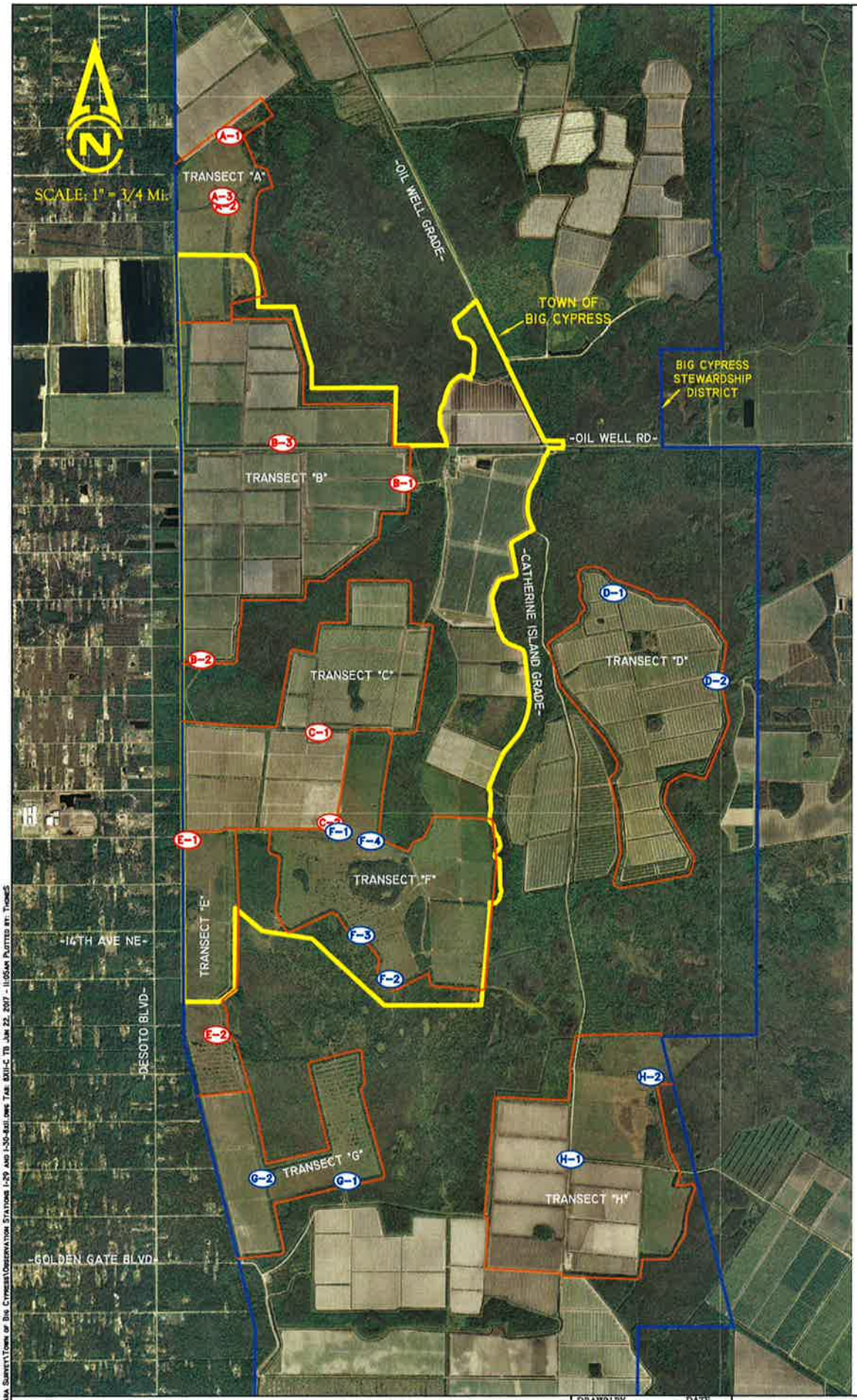
BIG CYPRESS SERVICE DISTRICT BOUNDARY PER WILSON-MILLER DRAWING No. 070725BCSD DRI BOUNDARY.DWG DATED JULY 25, 2007.

J:\2005\05csmi\81\Caracara Surveys\Town of Big Cypress\Observation Stations 1-15 and 1-16-811.dwg, Tab: 8x11-C, TB, Jan 22, 2007 - 11:01am, Plotted by: Thom S

CRESTED CARACARA NESTING SEASON SURVEY
OBSERVATION STATIONS - JANUARY 15-16, 2009
TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	3/10/09
REVIEWED BY	DATE
C.G.R.	3/10/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists



E-1 JANUARY 29 (TYP.)

A-1 JANUARY 30 (TYP.)

TRANSECT A

A-1 OBSERVATION STATION 1
0645 TO 0815

A-2 OBSERVATION STATION 2
0815 TO 0945

A-3 OBSERVATION STATION 3
0945 TO 1100

TRANSECT B

B-1 OBSERVATION STATION 1
0645 TO 0810

B-2 OBSERVATION STATION 2
0815 TO 0940

B-3 OBSERVATION STATION 3
0953 TO 1100

TRANSECT C

C-1 OBSERVATION STATION 1
0630 TO 0830

C-2 OBSERVATION STATION 2
0930 TO 1130

TRANSECT D

D-1 OBSERVATION STATION 1
0645-0815

D-2 OBSERVATION STATION 2
0815-1100

TRANSECT E

E-1 OBSERVATION STATION 1
0645 TO 0900

E-2 OBSERVATION STATION 2
0900 TO 1100

TRANSECT F

F-1 OBSERVATION STATION 1
0630-0830

F-2 OBSERVATION STATION 2
0845-1045

F-3 OBSERVATION STATION 3
1100-1145

F-4 OBSERVATION STATION 4
1200-1230

TRANSECT G

G-1 OBSERVATION STATION 1
0645-0830

G-2 OBSERVATION STATION 2
0830-1100

TRANSECT H

H-1 OBSERVATION STATION 1
0645-0825

H-2 OBSERVATION STATION 2
0837-1055

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

TOWN OF BIG CYPRESS BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

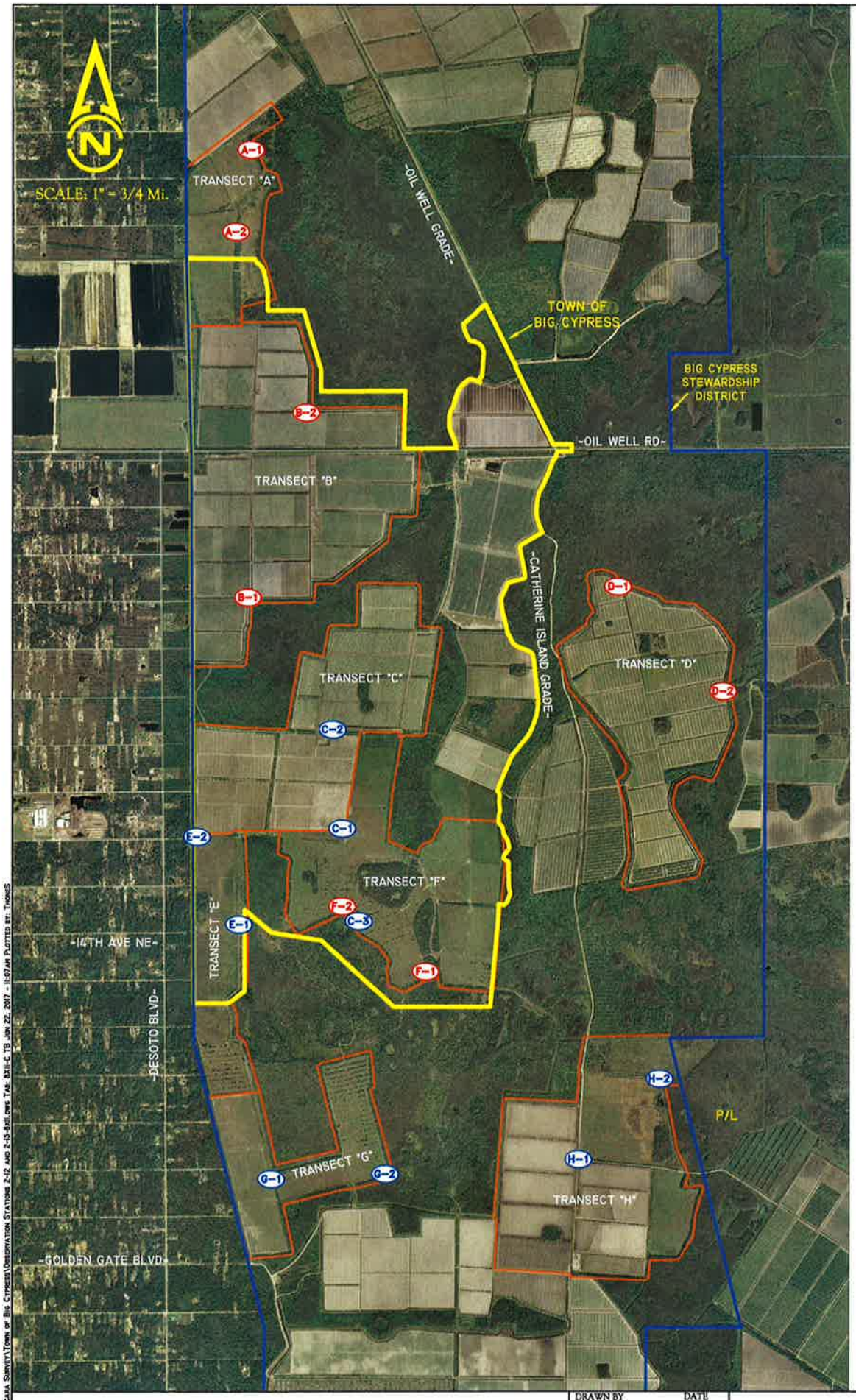
BIG CYPRESS SERVICE DISTRICT BOUNDARY PER WILSON-MILLER DRAWING No. 070725BCSD DRI BOUNDARY.DWG DATED JULY 25, 2007.

CRESTED CARACARA NESTING SEASON SURVEY
OBSERVATION STATIONS - JANUARY 29-30, 2009
TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	3/10/09
REVIEWED BY	DATE
C.G.R.	3/10/09
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

J:\2005\05cchill\CARACARA Survey\Town of Big Cypress\Observation Stations 1-29 and 1-30-831.dwg Tab: 831H-C TB Jan 22, 2007 - 11:05AM Plotted by: Thom5



E-1 FEBRUARY 12 (TYP.)

A-1 FEBRUARY 13 (TYP.)

TRANSECT A

A-1 OBSERVATION STATION 1
0700 TO 0831

A-2 OBSERVATION STATION 2
0845 TO 1015

TRANSECT B

B-1 OBSERVATION STATION 1
0635 TO 0830

B-2 OBSERVATION STATION 2
0845 TO 1100

TRANSECT C

C-1 OBSERVATION STATION 1
0635-0900

C-2 OBSERVATION STATION 2
0930-1130

C-3 OBSERVATION STATION 3
1230

TRANSECT D

D-1 OBSERVATION STATION 1
0635 TO 0830

D-2 OBSERVATION STATION 2
0830 TO 1100

TRANSECT E

E-1 OBSERVATION STATION 1
0635 TO 0830

E-2 OBSERVATION STATION 2
0830 TO 1100

TRANSECT F

F-1 OBSERVATION STATION 1
0645 TO 0845

F-2 OBSERVATION STATION 2
0900 TO 1130

TRANSECT G

G-1 OBSERVATION STATION 1
0635 TO 0805

G-2 OBSERVATION STATION 2
0805 TO 1100

TRANSECT H

H-1 OBSERVATION STATION 1
0635 TO 0825

H-2 OBSERVATION STATION 2
0830 TO 1045

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

TOWN OF BIG CYPRESS BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

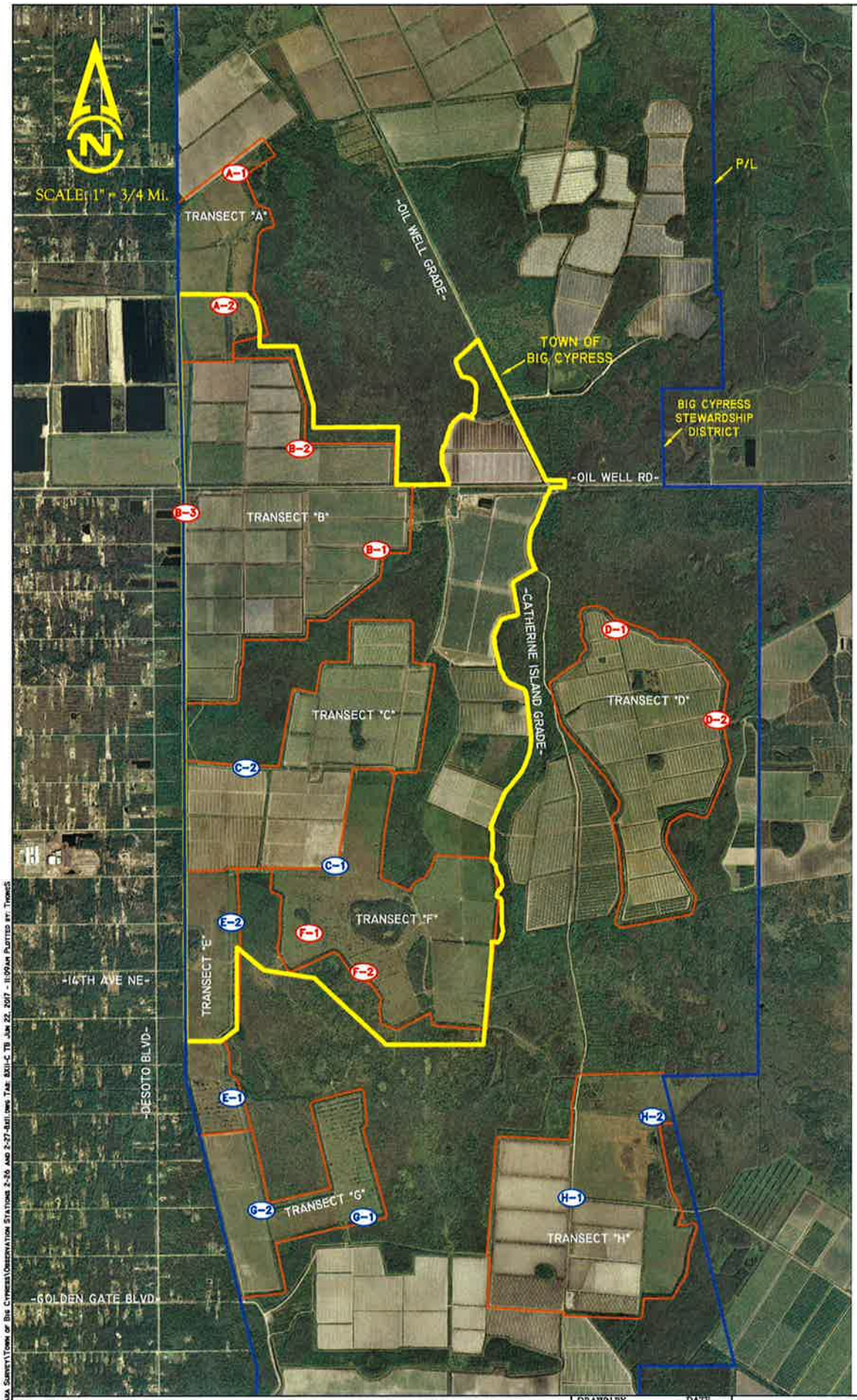
BIG CYPRESS SERVICE DISTRICT BOUNDARY PER WILSON-MILLER DRAWING No. 070725BCSD DRI BOUNDARY.DWG DATED JULY 25, 2007.

CRESTED CARACARA NESTING SEASON SURVEY
OBSERVATION STATIONS - FEBRUARY 12-13, 2009
TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	3/10/09
REVIEWED BY	DATE
C.G.R.	3/10/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05ecm\BIL\CARACARA SURVEY\Town of Big Cypress\OBSERVATION STATIONS 2-12 AND 2-13-BSI.dwg TAB: BXII-C TB JAN 22, 2007 - 11:07AM PLOTTED BY: THOMES



E-1 FEBRUARY 26 (TYP.)

A-1 FEBRUARY 27 (TYP.)

TRANSECT A

A-1 OBSERVATION STATION 1
0620 TO 0830

A-2 OBSERVATION STATION 2
0840 TO 1045

TRANSECT B

B-1 OBSERVATION STATION 1
0635 TO 0805

B-2 OBSERVATION STATION 2
0815 TO 0945

B-3 OBSERVATION STATION 3
0950 TO 1100

TRANSECT C

C-1 OBSERVATION STATION 1
0620 TO 0830

C-2 OBSERVATION STATION 2
0850 TO 1130

TRANSECT D

D-1 OBSERVATION STATION 1
0625 TO 0855

D-2 OBSERVATION STATION 2
0900 TO 1100

TRANSECT E

E-1 OBSERVATION STATION 1
0645 TO 0845

E-2 OBSERVATION STATION 2
0855 TO 1100

TRANSECT F

F-1 OBSERVATION STATION 1
0620 TO 0810

F-2 OBSERVATION STATION 2
0820 TO 1120

TRANSECT G

G-1 OBSERVATION STATION 1
0625 TO 0845

G-2 OBSERVATION STATION 2
0852 TO 1100

TRANSECT H

H-1 OBSERVATION STATION 1
0630 TO 0830

H-2 OBSERVATION STATION 2
0840 TO 1045

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

TOWN OF BIG CYPRESS BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

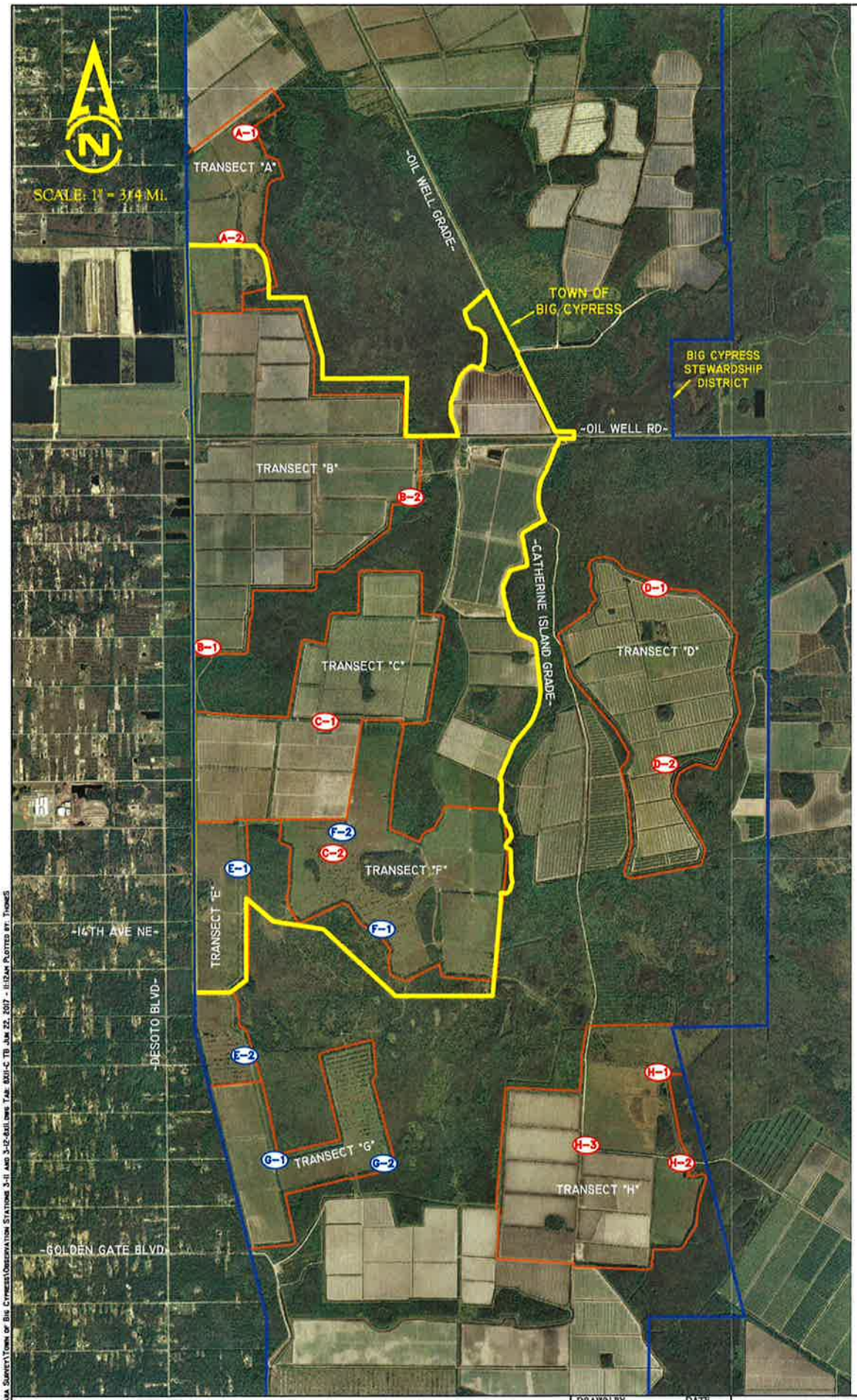
BIG CYPRESS SERVICE DISTRICT BOUNDARY PER WILSON-MILLER DRAWING No. 070725BCSD DRI BOUNDARY.DWG DATED JULY 25, 2007.

CRESTED CARACARA NESTING SEASON SURVEY
OBSERVATION STATIONS - FEBRUARY 26-27, 2009
TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	3/10/09
REVIEWED BY	DATE
C.G.R.	3/10/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cm01\CARACARA SURVEY\Town of Big Cypress\OBSERVATION STATIONS 2-26 AND 2-27-dst1.dwg Tab: BSI-C TB Jun 22, 2017 - 11:09AM Plotted by: TimeS



A-1 MARCH 11 (TYP.)

A-2 MARCH 12 (TYP.)

TRANSECT A

A-1 OBSERVATION STATION 1 0715-0900

A-2 OBSERVATION STATION 2 0908-1100

TRANSECT B

B-1 OBSERVATION STATION 1 0715-0908

B-2 OBSERVATION STATION 2 0915-1100

TRANSECT C

C-1 OBSERVATION STATION 1 0710-1020

C-2 OBSERVATION STATION 2 1130-1205

TRANSECT D

D-1 OBSERVATION STATION 1 0715-0915

D-2 OBSERVATION STATION 2 0922-1115

TRANSECT E

E-1 OBSERVATION STATION 1 0715-0915

E-2 OBSERVATION STATION 2 0925-1115

TRANSECT F

F-1 OBSERVATION STATION 1 0710-0930

F-2 OBSERVATION STATION 2 0940-1120

TRANSECT G

G-1 OBSERVATION STATION 1 0715-0900

G-2 OBSERVATION STATION 2 0910-1100

TRANSECT H

H-1 OBSERVATION STATION 1 0725-0900

H-2 OBSERVATION STATION 2 0905-1015

H-3 OBSERVATION STATION 3 1020-1100

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

TOWN OF BIG CYPRESS BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

BIG CYPRESS SERVICE DISTRICT BOUNDARY PER WILSON-MILLER DRAWING No. 070725BCSD DRI BOUNDARY.DWG DATED JULY 25, 2007.

J:\2005\05CCMS\Survey\Town of Big Cypress\Observation Stations 3-11 and 3-12-Bill.dwg Tab: Bill-C TB Jun 22, 2007 - 11:12am Plotted by: Thom S

CRESTED CARACARA NESTING SEASON SURVEY
OBSERVATION STATIONS - MARCH 11-12, 2009
TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	3/16/09
REVIEWED BY	DATE
C.G.R.	3/16/09
REVISED	DATE

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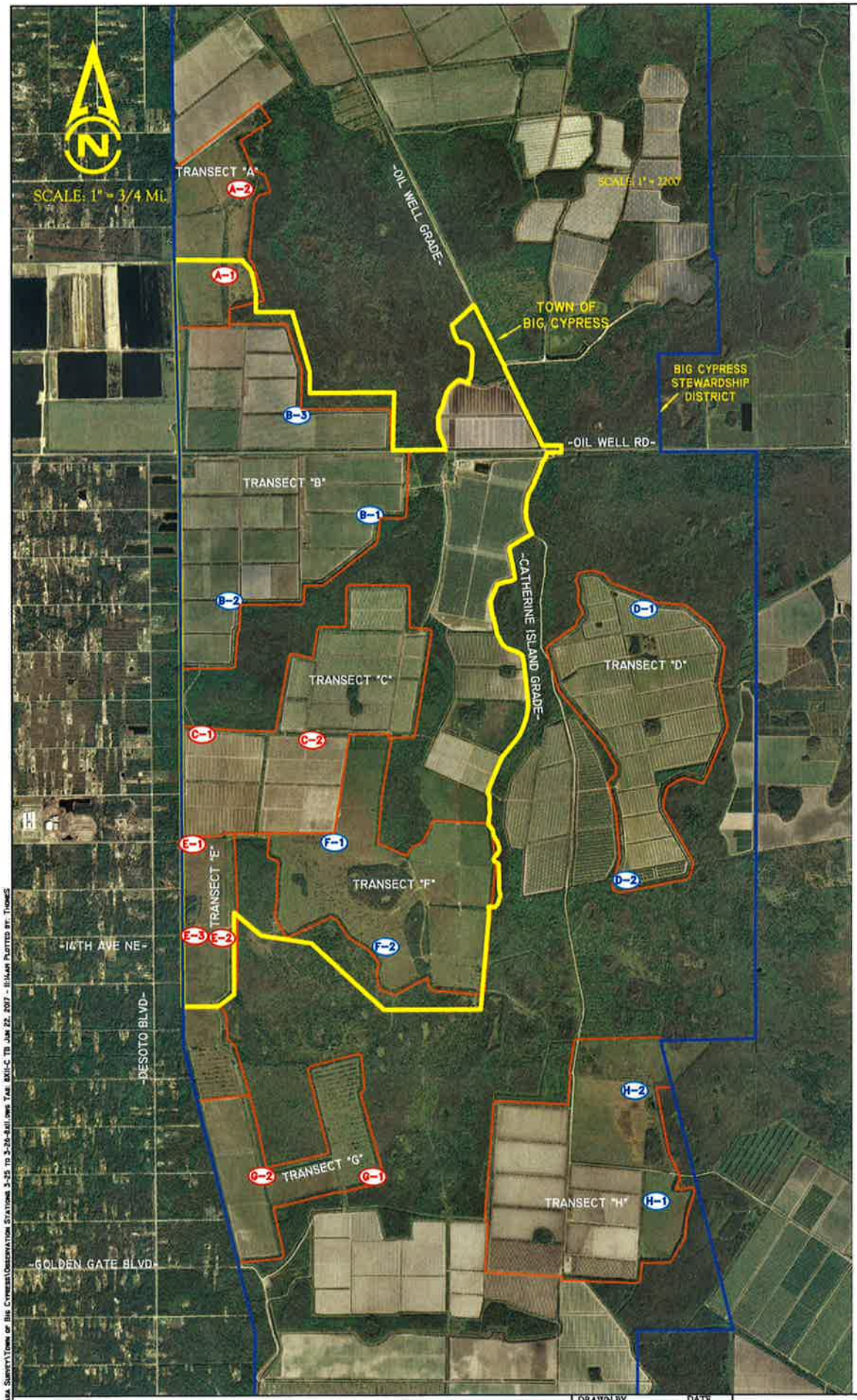
PASSARELLA & ASSOCIATES INC



A-1 MARCH 25 (TYP.)

A-2 MARCH 26 (TYP.)

TRANSECT A

A-1 OBSERVATION STATION 1
0700-0855

A-2 OBSERVATION STATION 2
0900-1100

TRANSECT B

B-1 OBSERVATION STATION 1
0700-0835

B-2 OBSERVATION STATION 2
0845-1000

B-2 OBSERVATION STATION 3
1015-1100

TRANSECT C

C-1 OBSERVATION STATION 1
0655-0830

C-2 OBSERVATION STATION 2
0845-1130

TRANSECT D

D-1 OBSERVATION STATION 1
0650-0900

D-2 OBSERVATION STATION 2
0906-1100

TRANSECT E

E-1 OBSERVATION STATION 1
0645-0900

E-2 OBSERVATION STATION 2
0900-1000

E-2 OBSERVATION STATION 3
1000-1100

TRANSECT F

F-1 OBSERVATION STATION 1
0645-0845

F-2 OBSERVATION STATION 2
0900-1100

TRANSECT G

G-1 OBSERVATION STATION 1
0700-0900

G-2 OBSERVATION STATION 2
0910-1100

TRANSECT H

H-1 OBSERVATION STATION 1
0700-0900

H-2 OBSERVATION STATION 2
0915-1100

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

TOWN OF BIG CYPRESS BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

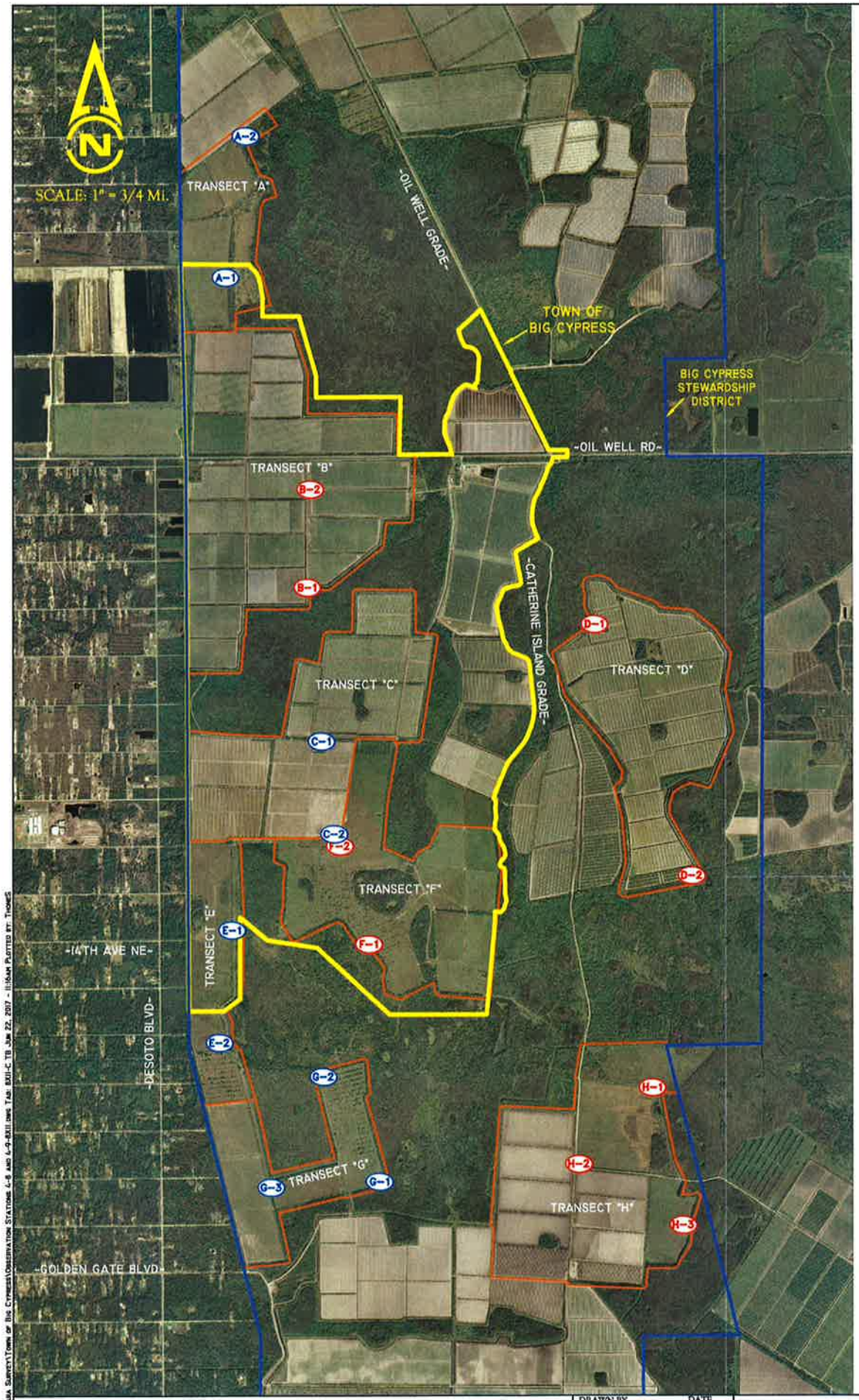
BIG CYPRESS SERVICE DISTRICT BOUNDARY PER WILSON-MILLER DRAWING No. 070725BCSD DRI BOUNDARY.DWG DATED JULY 25, 2007.

CRESTED CARACARA NESTING SEASON SURVEY
OBSERVATION STATIONS - MARCH 25-26, 2009
TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	3/31/09
REVIEWED BY	DATE
C.G.R.	3/31/09
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

J:\2005\05CrnA\Bit\Caracara Survey\Town of Big Cypress\Observation Stations 3-25 to 3-26-Bill.dwg Tab: BXH-C TB Jun 22, 2007 - 11:44m Plotted by: ThomeS



A-1 APRIL 8 (TYP.)

A-2 APRIL 9 (TYP.)

TRANSECT A

A-1 OBSERVATION STATION 1
0640-0842

A-2 OBSERVATION STATION 2
0850-1100

TRANSECT B

B-1 OBSERVATION STATION 1
0640-0840

B-2 OBSERVATION STATION 2
0850-1100

TRANSECT C

C-1 OBSERVATION STATION 1
0630-0930

C-2 OBSERVATION STATION 2
0940-1200

TRANSECT D

D-1 OBSERVATION STATION 1
0640-0900

D-2 OBSERVATION STATION 2
0900-1100

TRANSECT E

E-1 OBSERVATION STATION 1
0640-0900

E-2 OBSERVATION STATION 2
0900-1100

TRANSECT F

F-1 OBSERVATION STATION 1
0630-0930

F-2 OBSERVATION STATION 2
0940-1200

TRANSECT G

G-1 OBSERVATION STATION 1
0645-0830

G-2 OBSERVATION STATION 2
0840-0945

G-3 OBSERVATION STATION 3
0950-1100

TRANSECT H

H-1 OBSERVATION STATION 1
0645-0830

H-2 OBSERVATION STATION 2
0835-0945

H-3 OBSERVATION STATION 3
1000-1100

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

TOWN OF BIG CYPRESS BOUNDARY PER ABB, INC. DRAWING NO. REV-DRI.DWG DATED OCTOBER 16, 2007.

BIG CYPRESS SERVICE DISTRICT BOUNDARY PER WILSON-MILLER DRAWING No. 070725BCSD DRI BOUNDARY.DWG DATED JULY 25, 2007.

J:\2005\05CRN\81\Caracara Survey\Town of Big Cypress\Observation Stations 4-8 and 4-9-831.dwg Tab: 8X11-C TB Jun 22, 2007 - 11:16am Plotted by: Thomes

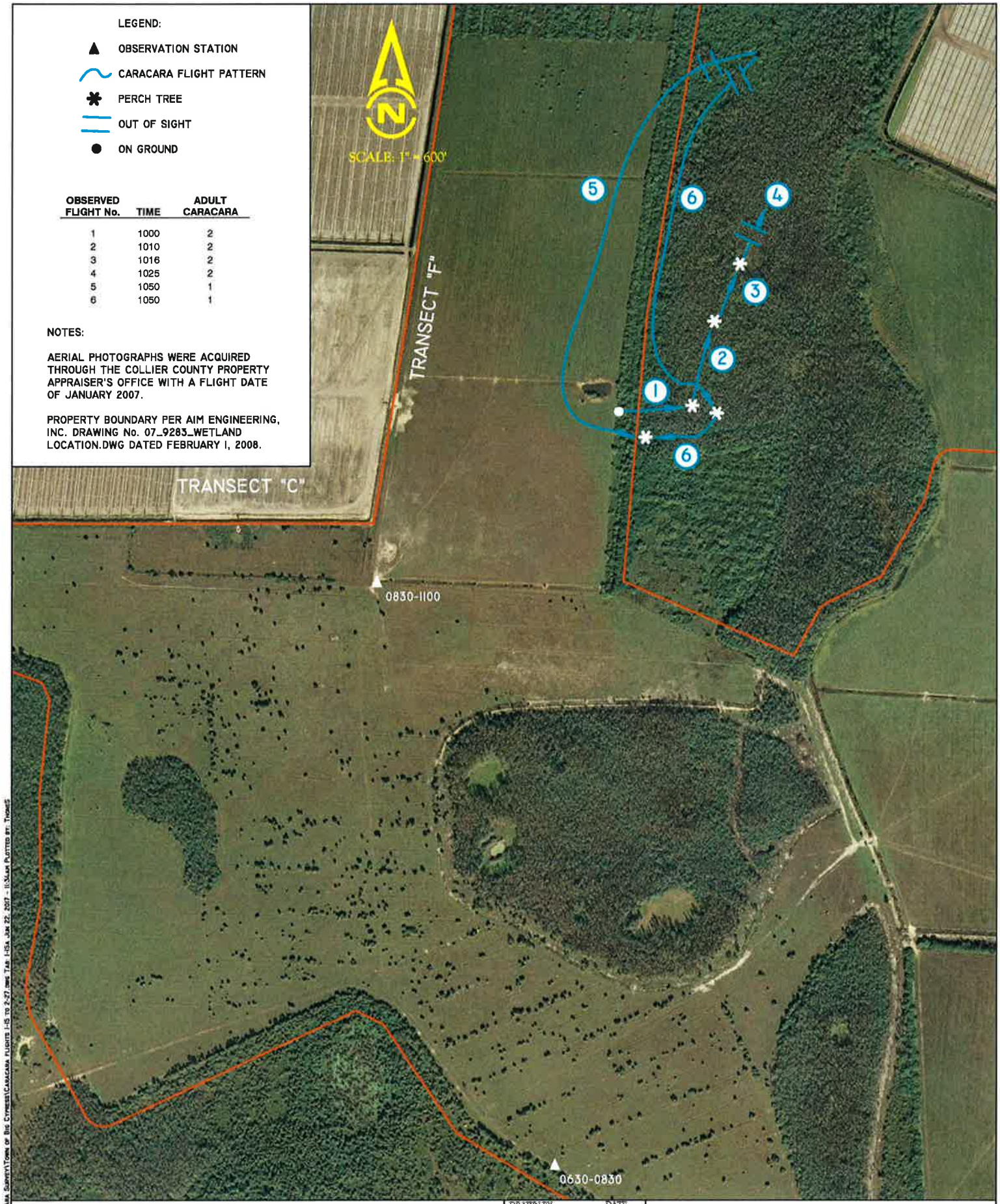
CRESTED CARACARA NESTING SEASON SURVEY
OBSERVATION STATIONS - APRIL 8-9, 2009
TOWN OF BIG CYPRESS

DRAWN BY	DATE
D.B.	4/13/09
REVIEWED BY	DATE
C.G.R.	4/13/09
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

APPENDIX G

AERIAL PHOTOGRAPHS WITH CRESTED CARACARA NEST LOCATION AND CARACARA FLIGHT DETAILS



OBSERVED FLIGHT No.	TIME	ADULT CARACARA
1	1000	2
2	1010	2
3	1016	2
4	1025	2
5	1050	1
6	1050	1

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

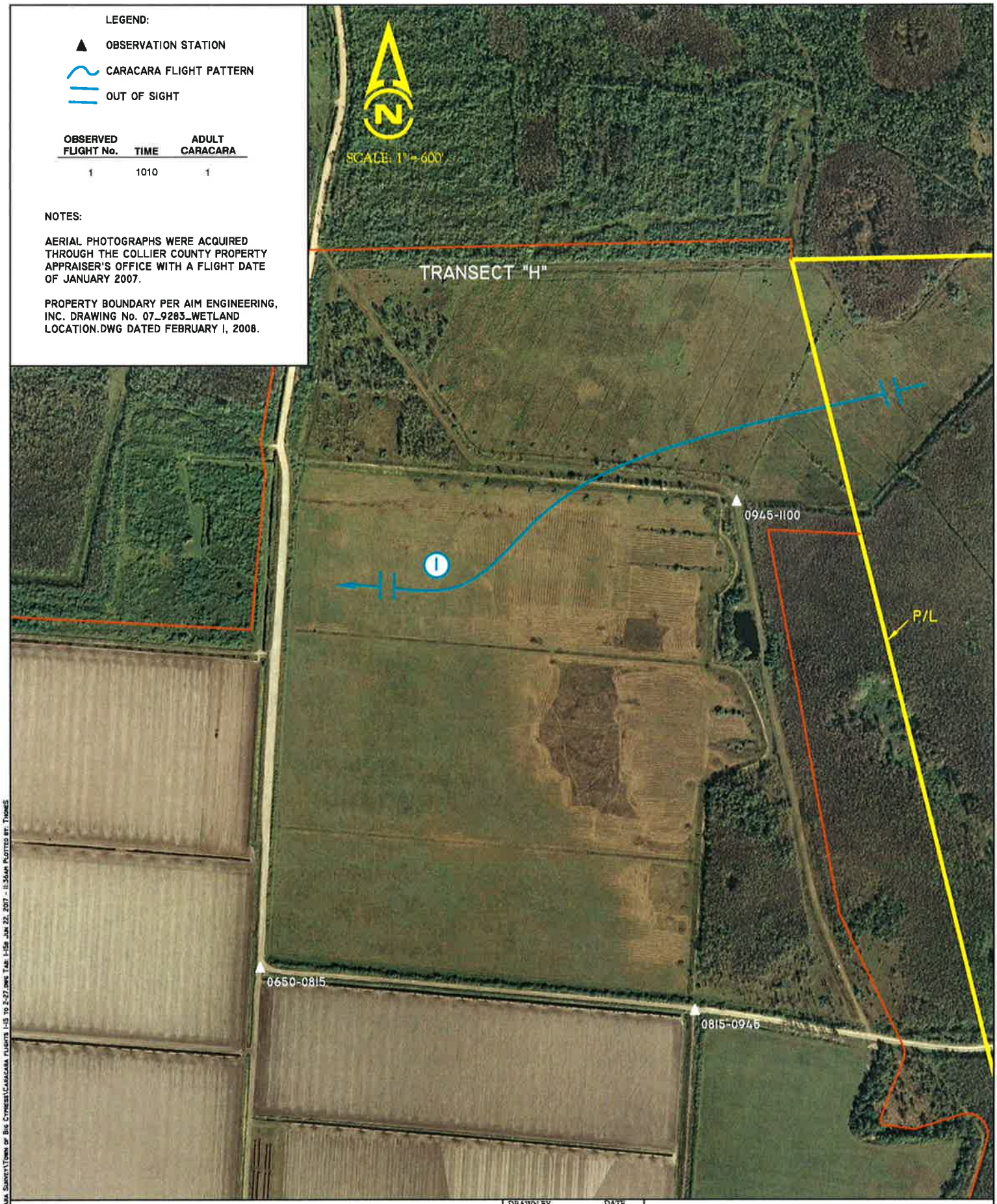
PROPERTY BOUNDARY PER AIM ENGINEERING, INC. DRAWING No. 07_9283_WETLAND LOCATION.DWG DATED FEBRUARY 1, 2008.

CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - JANUARY 15, 2009
TRANSECT F

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cphla\Caracara Survey\Town of Big Cypress\Caracara flights 1-15 to 2-27.dwg Tab: 11x17a Jan 22, 2007 - 11:34am Plotted by: Thomas

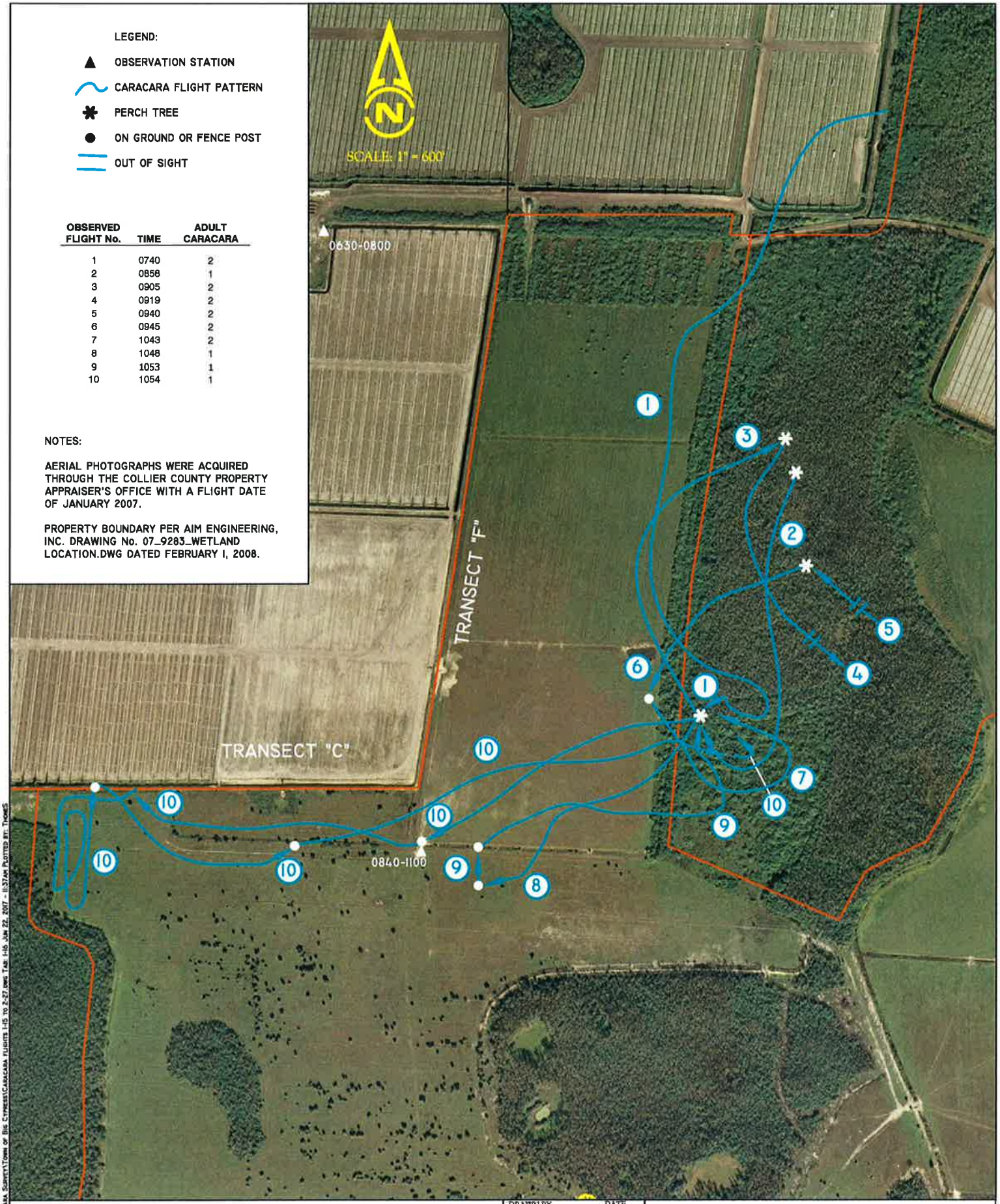


CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - JANUARY 15, 2009
TRANSECT H

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\09cpm\BI\CARACARA SURVEY\TOWN OF BIG CYPRESS\CARACARA FLIGHTS 1-15 TO 2-27.DWG TAB: H15a JAN 23, 2007 - 11:36AM PLOTTED BY: THOMES



OBSERVED FLIGHT No.	TIME	ADULT CARACARA
1	0740	2
2	0858	1
3	0905	2
4	0919	2
5	0940	2
6	0945	2
7	1043	2
8	1048	1
9	1053	1
10	1054	1

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

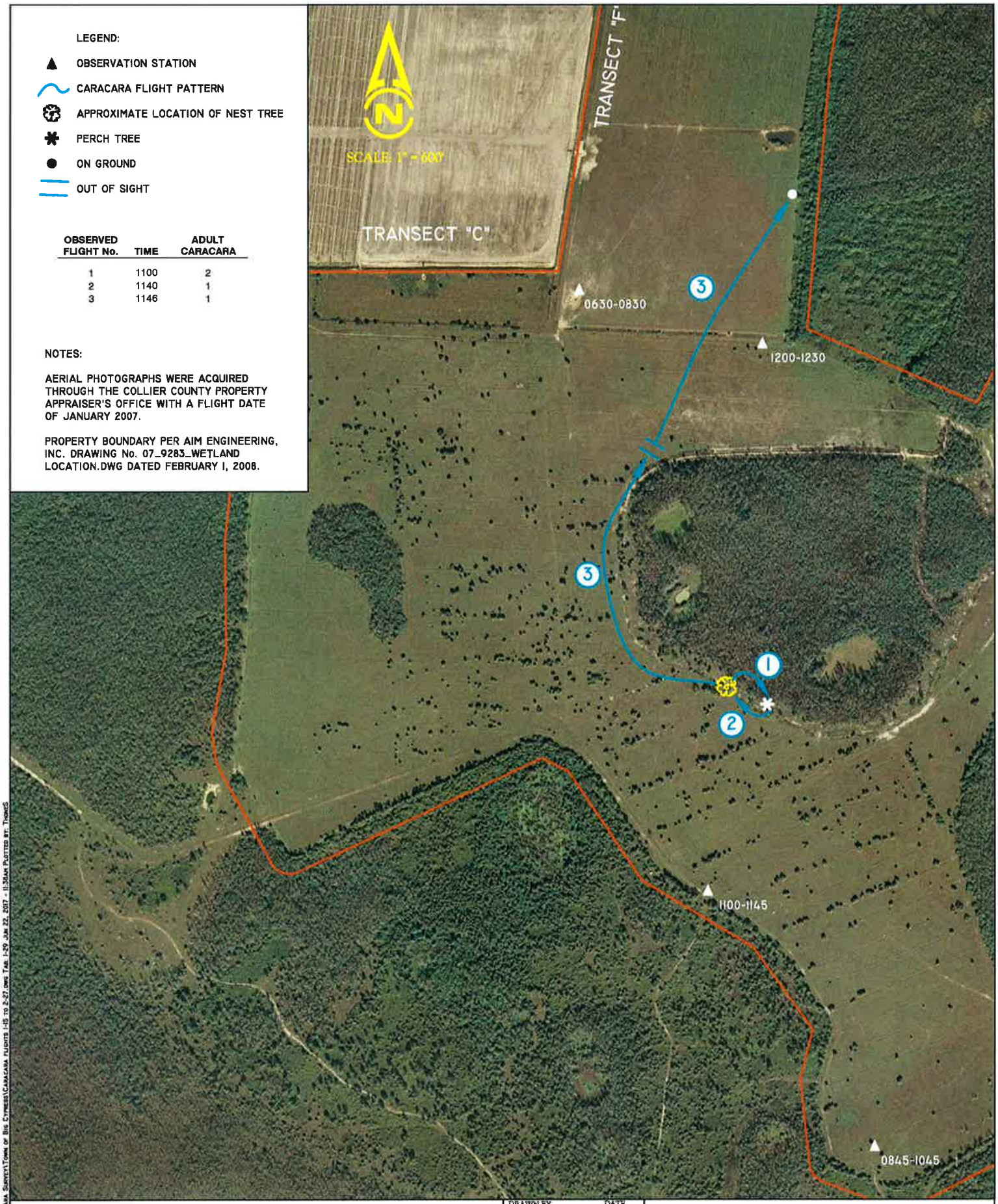
PROPERTY BOUNDARY PER AIM ENGINEERING, INC. DRAWING No. 07_9283_WETLAND LOCATION.DWG DATED FEBRUARY 1, 2008.

J:\2005\05CCH&B\CARACARA SURVEY\TOWN OF BIG CYPRESS\CARACARA FLIGHTS 1-15 TO 2-27.DWG TAB: H6 JUN 22, 2007 - 11:37AM PLOTTED BY: THOMAS

CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - JANUARY 16, 2009

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists



CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - JANUARY 29, 2009

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
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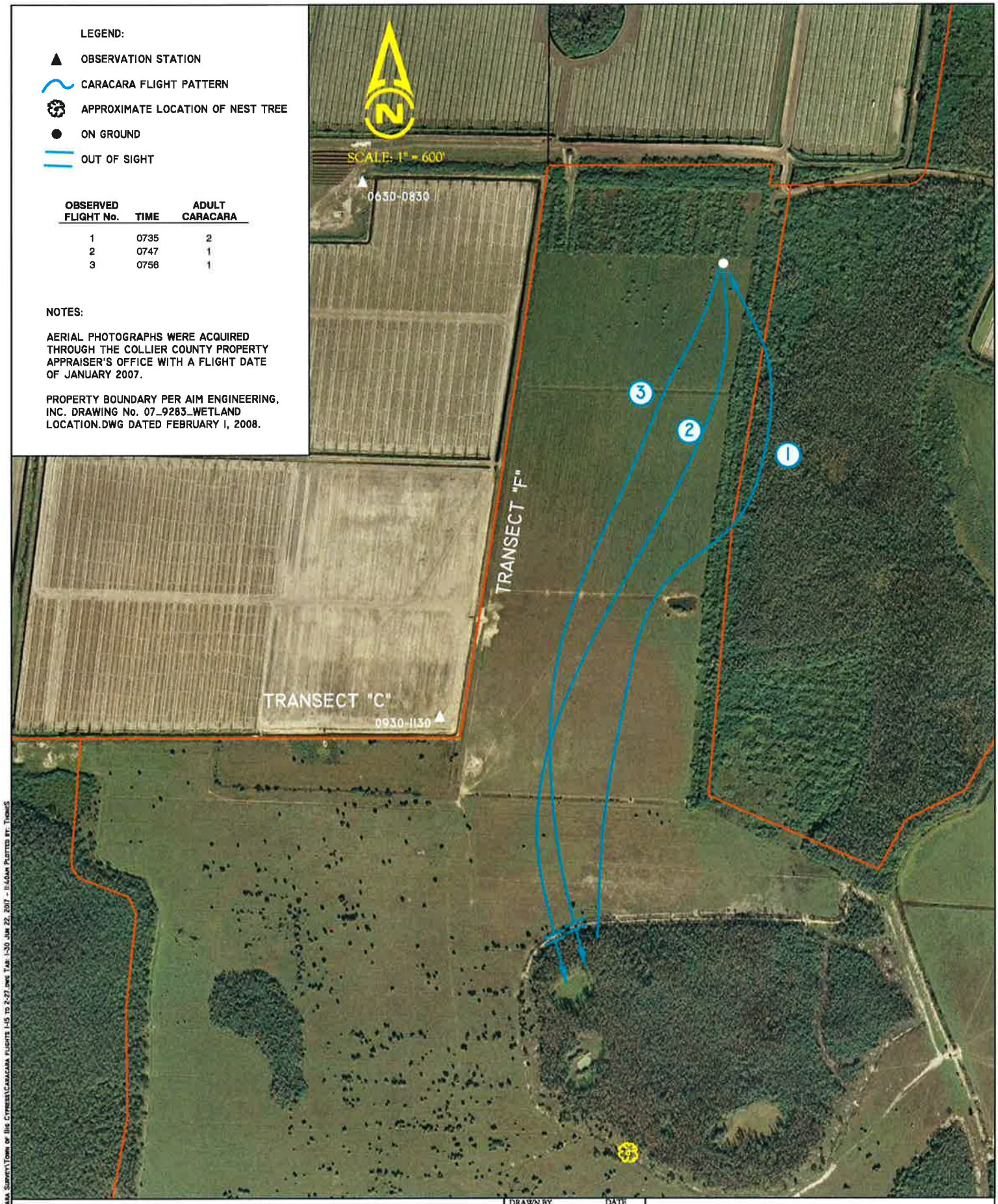
J:\2005\05cphil\BIG\CARACARA SURVEY\TOWN OF BIG CYPRESS\CARACARA FLIGHTS 1-15 TO 2-27.DWG TUE, 1-29 JAN 22, 2007 - 11:38AM PLOTTED BY: THOMAS

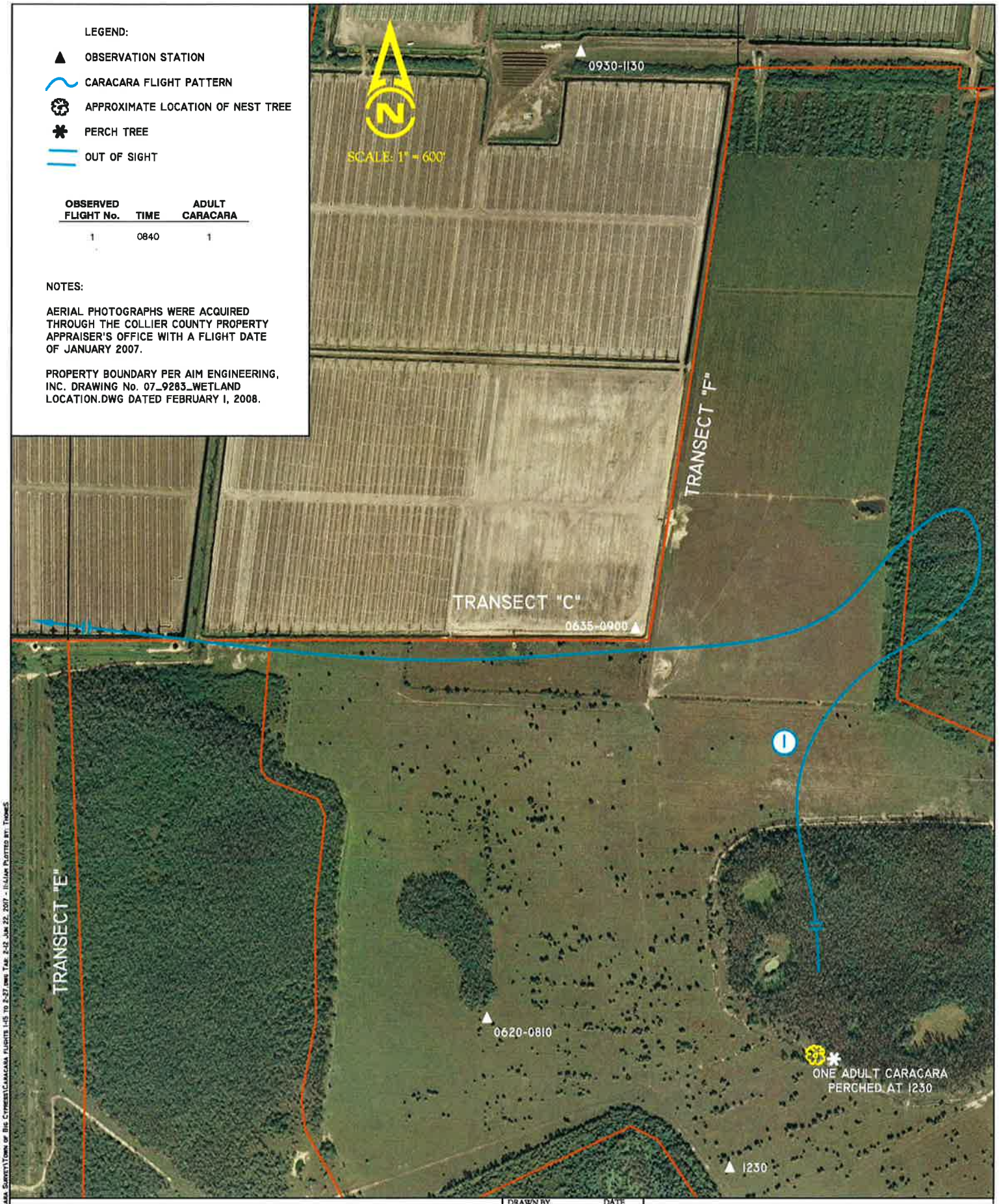


CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - JANUARY 30, 2009

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05czn\GIS\Caracara Survey\Town of Big Cypress\Caracara flights 1-15 to 2-27.dwg Tab: 1-30 Jun 22, 2017 - 11:40am Plotted by: Thomas

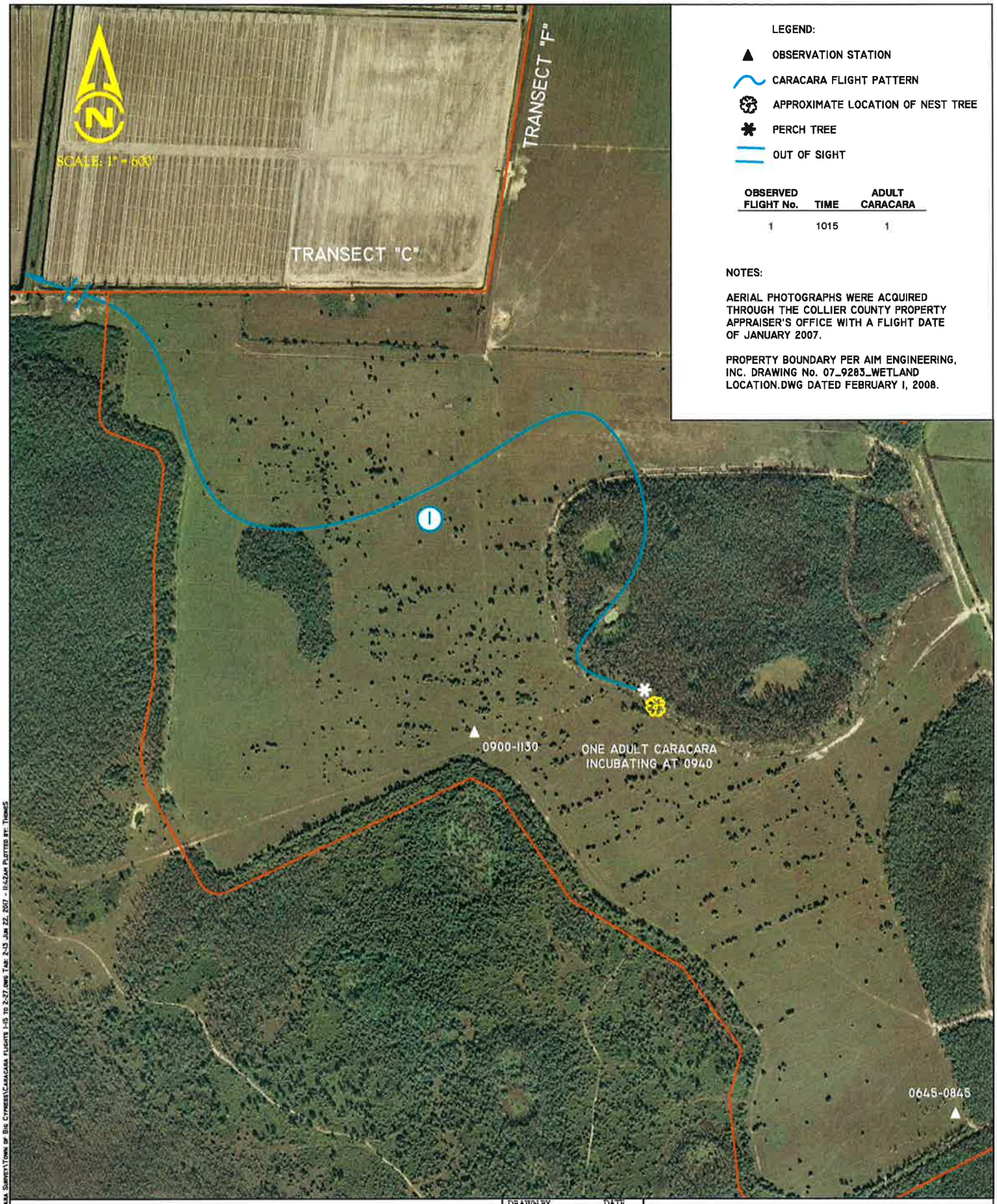


CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - FEBRUARY 12, 2009

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cehl&h\Caracara Survey\Town of Big Cypress\Caracara flights 1-15 to 2-27.dwg Tab: 2-12 Jun 22, 2007 - 11:41am Plotted by: Thomas



LEGEND:

- OBSERVATION STATION
- CARACARA FLIGHT PATTERN
- APPROXIMATE LOCATION OF NEST TREE
- PERCH TREE
- OUT OF SIGHT

OBSERVED FLIGHT No.	TIME	ADULT CARACARA
1	1015	1

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

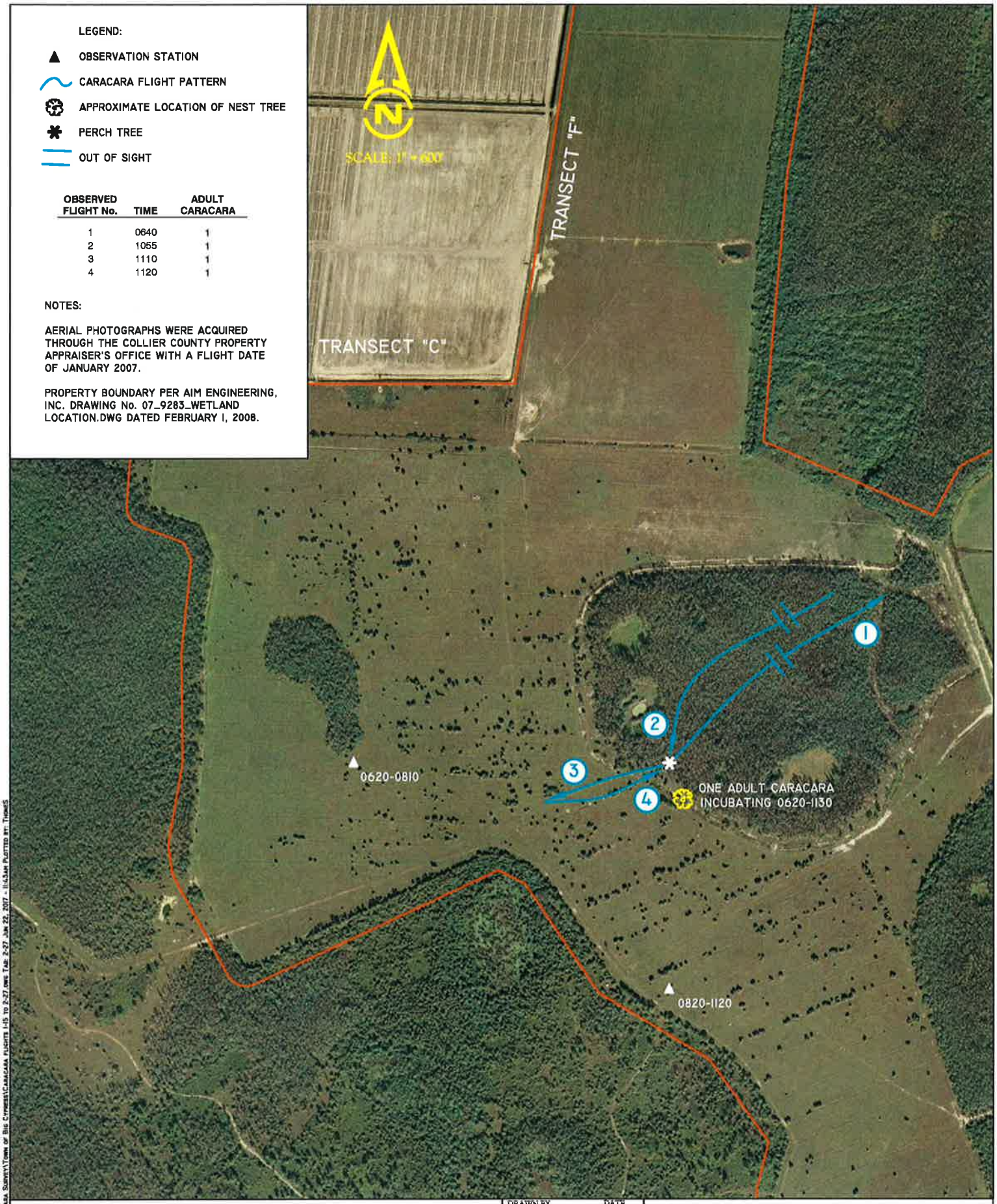
PROPERTY BOUNDARY PER AIM ENGINEERING, INC. DRAWING No. 07_9283_WETLAND LOCATION.DWG DATED FEBRUARY 1, 2008.

J:\2009\105\CAD\BIG CARACARA SURVEY\TOWN OF BIG CYPRESS\CARACARA FLIGHTS 1-15 TO 2-27.DWG TAB: 2-13 JUN 22, 2017 - 11:42AM PLOTTED BY: THOMES

CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - FEBRUARY 13, 2009

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists



OBSERVED FLIGHT No.	TIME	ADULT CARACARA
1	0640	1
2	1055	1
3	1110	1
4	1120	1

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

PROPERTY BOUNDARY PER AIM ENGINEERING, INC. DRAWING No. 07_9283_WETLAND LOCATION.DWG DATED FEBRUARY 1, 2008.

CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - FEBRUARY 27, 2009

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
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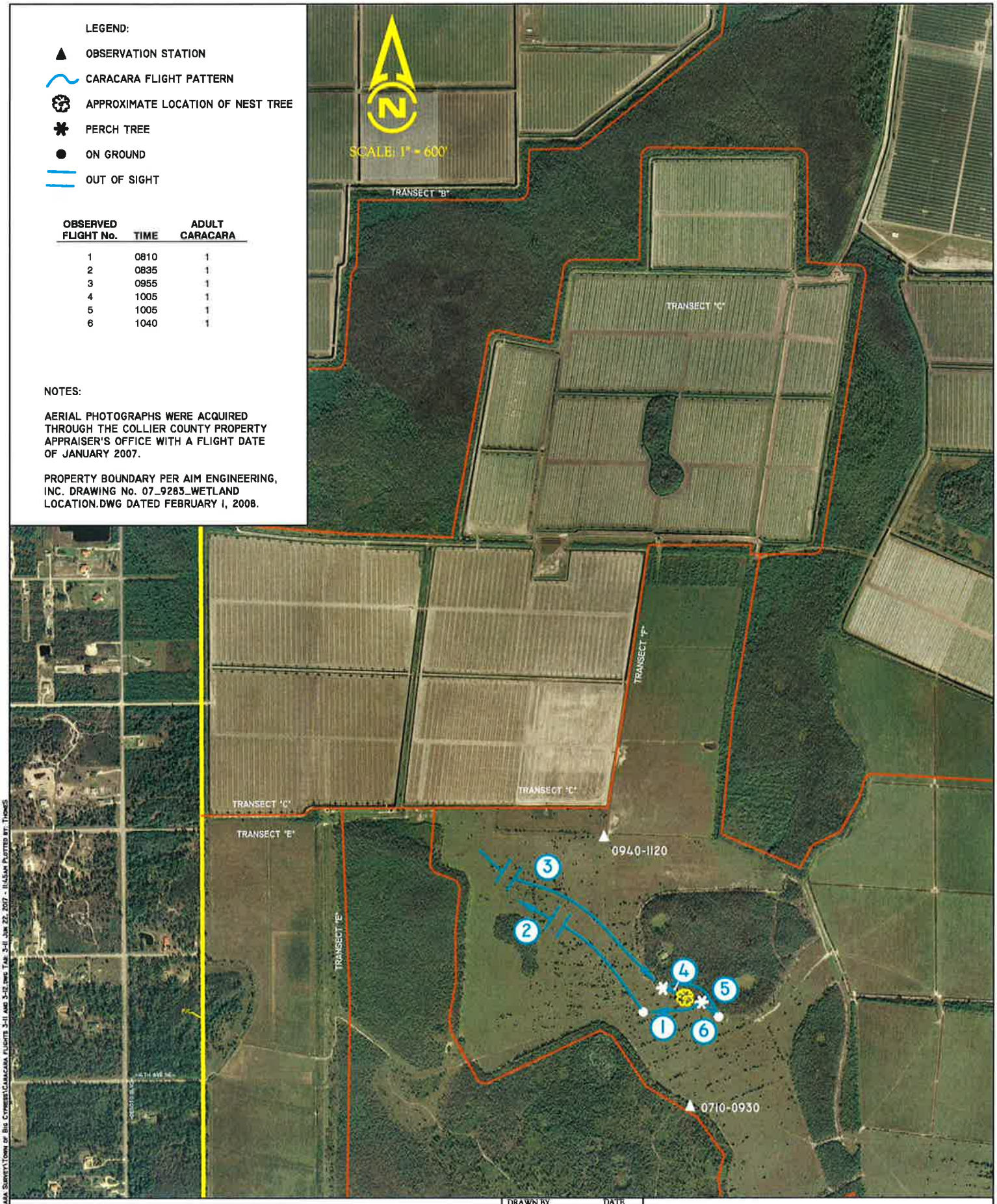
J:\2005\05cen\All\Caracara Survey\Town of Big Cypress\Caracara Flights 1-15 to 2-27.dwg Tab: 2-27 Jun 22, 2007 - 11:43am Plotted by: Thomas



OBSERVED FLIGHT No.	TIME	ADULT CARACARA
1	0810	1
2	0835	1
3	0955	1
4	1005	1
5	1005	1
6	1040	1

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

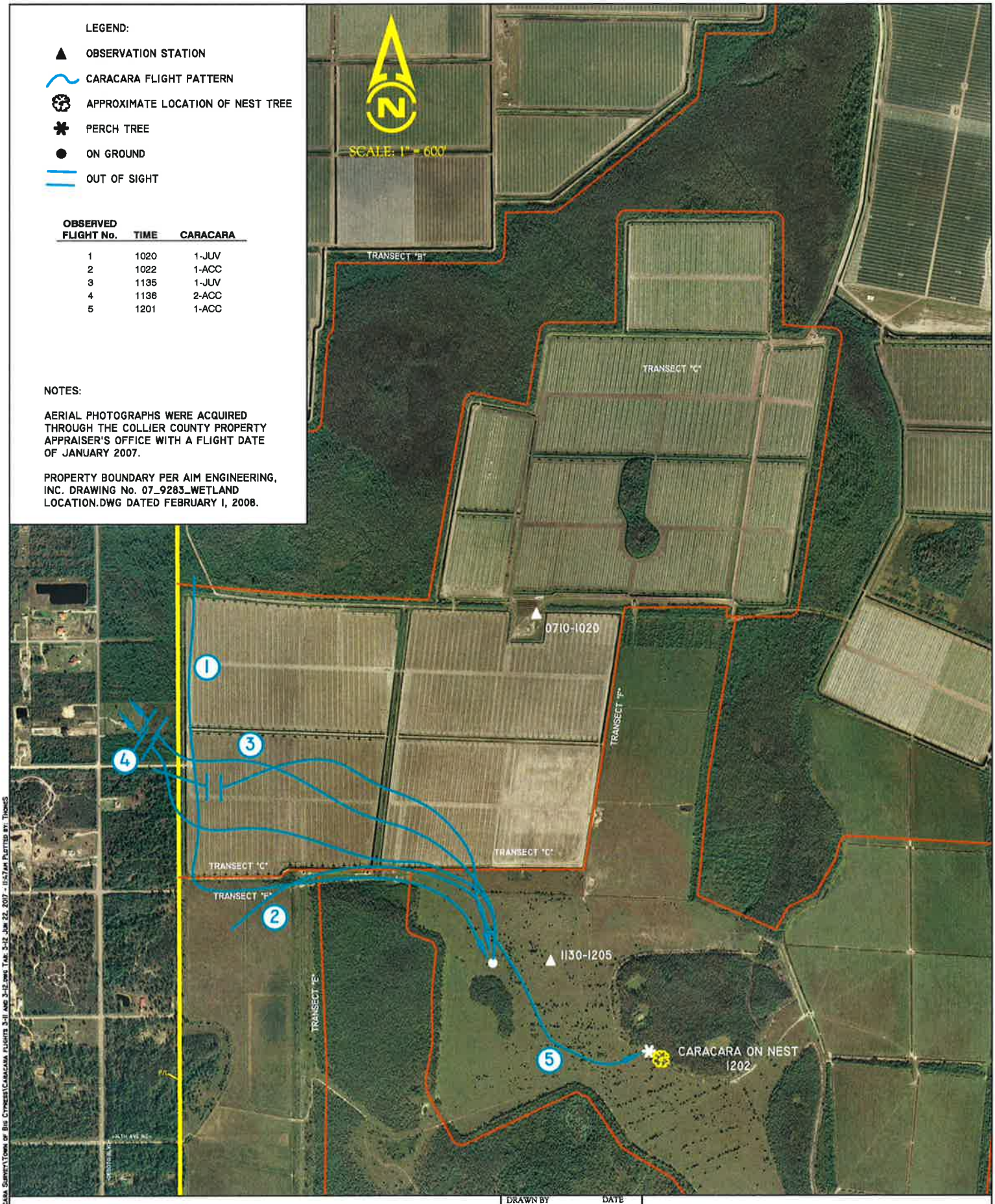
PROPERTY BOUNDARY PER AIM ENGINEERING, INC. DRAWING No. 07_9283_WETLAND LOCATION.DWG DATED FEBRUARY 1, 2008.

J:\2005\05cpm&a\Caracara Survey\Town of Big Cypress\Caracara flights 3-11 and 3-12.dwg Tue, 3-11, Jun 22, 2007 - 11:45am Plotted by: Thomes

CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - MARCH 11, 2009

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

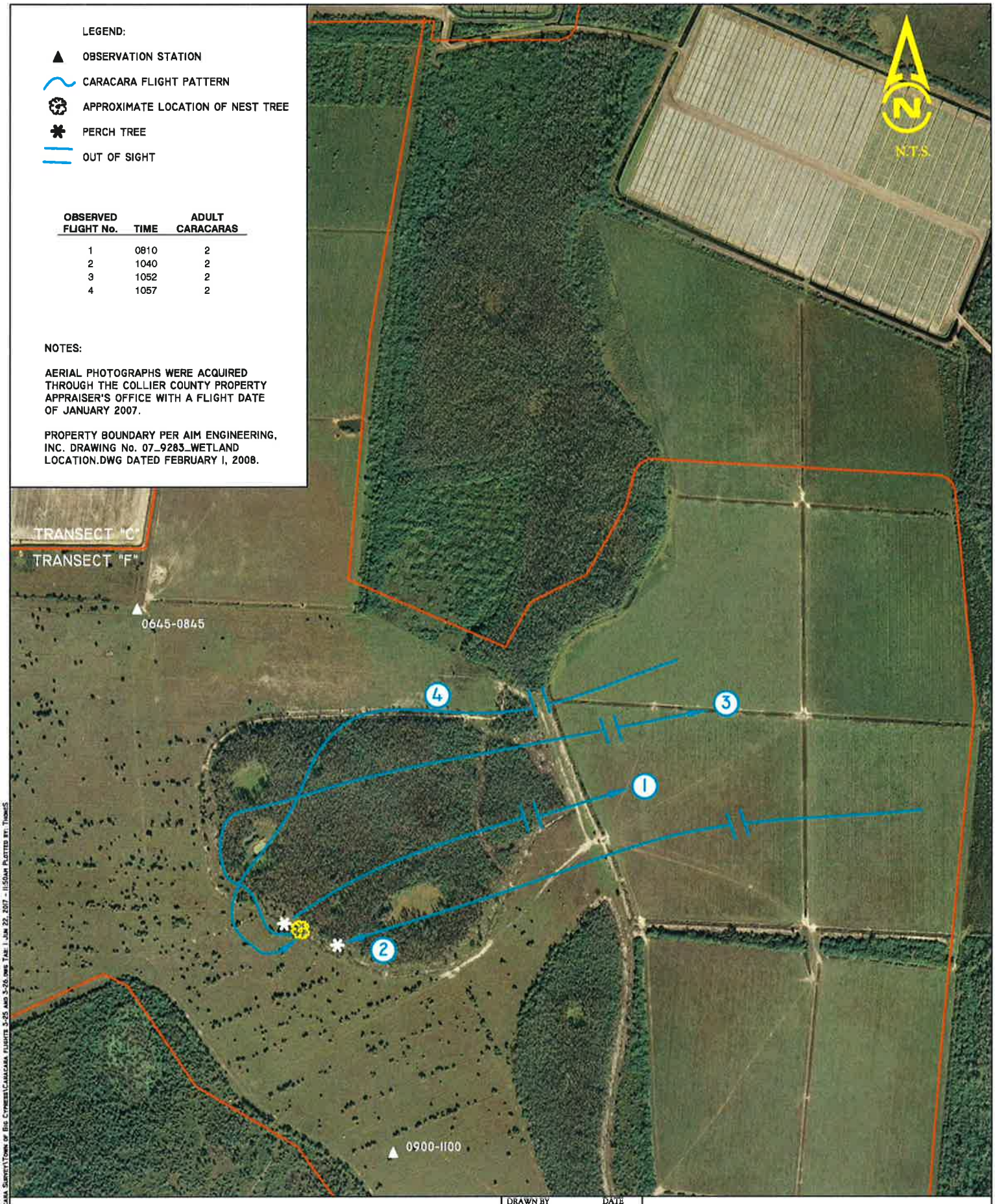
PASSARELLA & ASSOCIATES INC
Consulting Ecologists



CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - MARCH 12, 2009

DRAWN BY	DATE
D.B.	3/17/09
REVIEWED BY	DATE
C.G.R.	3/17/09
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists



J:\2005\05cm\48\Caracara Survey\Town of Big Cypress\Caracara flights 3-25 and 3-26.dwg Tab: | Jun 22, 2007 - 11:50am Plotted by: Thomas

CRESTED CARACARA NESTING SEASON SURVEY
TOWN OF BIG CYPRESS
FLIGHT DETAILS - MARCH 26, 2009

DRAWN BY	DATE
D.B.	3/27/09
REVIEWED BY	DATE
C.G.R.	3/27/09
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

EXHIBIT 13

RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY REPORT

RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY

June 2017

Prepared For:

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Prepared By:

Passarella & Associates, Inc.
13620 Metropolis Avenue, Suite 200
Fort Myers, Florida 33912
(239) 274-0067

Project No. 05CEM1481

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INTRODUCTION

The following report documents the crested caracara (*Caracara cheriway*) nesting season survey for Rural Lands West (Project) conducted in January, February, March, and April 2016. The surveys were conducted per the U.S. Fish and Wildlife Service (USFWS) Draft Species Conservation Guidelines for South Florida for the Audubon's Crested Caracara (USFWS 2004).

The Project boundary totals 10,264.63± acres located in Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; Collier County (Appendix A). The Project is located along the eastern boundary of Golden Gate Estates. Oil Well Road (County Road (CR) 858) bisects the Project and Immokalee Road is located approximately two miles to the north. The Camp Keais Strand occupies the eastern portion of the Project boundary. Shaggy Cypress Swamp is located north of Oil Well Road within the Project boundary. A portion of the northeast side of the Project site overlaps with the USFWS crested caracara consultation area (Appendix B).

Habitat mapping to identify preferential crested caracara survey areas was conducted utilizing Florida Land Use, Cover and Forms Classification System (FLUCFCS) (Florida Department of Transportation 1999). A total of 77 vegetative associations and land uses (i.e., FLUCFCS codes) were identified on the property. The dominant land use on the property is agriculture. The land use types Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214) comprise approximately 48 percent (4,934± acres) of the site. Due to rotation of vegetation crops, some fields may be used for pasture during interim periods of crop rotation. The native areas on-site are dominated by Cypress, Disturbed (FLUCFCS Code 6219) which comprises approximately 29 percent of the Project site. Native upland habitats are dominated by Pine Flatwoods, Disturbed (FLUCFCS Code 4119) which comprises 2.6 percent of the site. An aerial with COE FLUCFCS and Wetlands Map is included as Appendix C.

BIOLOGY OF CRESTED CARACARA

The crested caracara is a large, non-migratory raptor that feeds largely on carrion and is often found with flocks of turkey vultures (*Cathartes aura*) and black vultures (*Coragyps atratus*). The population of crested caracara found in peninsular Florida is genetically isolated from other populations of crested caracara subspecies found in the Southwestern United States and portions of Central and South America (USFWS 1999). While other subspecies of crested caracara are not listed as threatened or endangered, the crested caracara subspecies found in Florida was listed in July 1987 as threatened under the Endangered Species Act (16 U.S.C. 1531 *et seq*).

Crested caracara habitat consists largely of the native prairies of Florida with their associated marshes and cabbage palm and cabbage palm/oak hammocks (Rodgers *et al.* 1996). Cabbage palms (*Sabal palmetto*) in open habitats are of high importance for nesting. Crested caracaras generally nest during the winter time with the peak occurring during January and February (USFWS 1999). The birds show high nest site fidelity and are often observed to construct nests in the same tree. Double clutching and re-nesting have been observed if a nest is destroyed or the eggs are taken (USFWS 2002). Clutches are typically two eggs and sometimes

three eggs and incubation is shared by both parents during the 28-day incubation period (USFWS 1999).

METHODOLOGY

The crested caracara nesting season survey was conducted according to the Survey Protocol for Finding Caracara Nests, which is Appendix B of the USFWS Draft Species Conservation Guidelines for South Florida for the Audubon's Crested Caracara (USFWS 2004). Prior to the crested caracara survey, the Project site was reviewed for potential crested caracara nesting habitat. Specifically, habitats were identified that consisted of cabbage palm and/or oak hammocks with nearby open fields. The survey area contained eight survey areas which were identified on the maps and field observation forms as Transects A through H (Appendix D). Within each transect area were two to three numbered observation stations, (e.g., A-1, A-2…) that provided unobstructed viewing of large open areas. In all, a total of 17 observation stations were used during the nesting season survey. Transect areas were surveyed every other week for a 12-week period.

Crested caracara nesting territory surveys for the Project occurred during the months of January, February, March, and April. Surveys generally began between 6:00 and 7:30 a.m. and ended after suitable habitat had been surveyed. Surveys were conducted by qualified ecologists traversing suitable habitat by foot and by vehicle where conditions allowed. Ecologists would visually inspect cabbage palm trees in the survey area and stop at observation stations to look for crested caracara activity. Visual observations were aided by binoculars. Crested caracara observations as well as general wildlife observations were recorded on field data forms (Appendix E). When crested caracaras were identified during the survey period, their location, flight paths, and time of observation were recorded on aerial maps. Relative weather conditions were also recorded for each survey period. Table 1 details the time and weather conditions during each survey period.

Table 1. Summary of Survey Times and Weather Conditions

Date	Survey Time	Temperature (° F)	Cloud Cover (%)	Approximate Wind Speed (mph)	Precipitation
January 20, 2016	0645-1100	Low 40s to low 60s	30-80	0-10	None
January 22, 2016	0630-1100	Mid 60s to low 70s	95-100	0-10	Light to Heavy
January 26, 2016	0630-1100	Low 50s to high 70s	25-80	0-5	None
January 27, 2016	0630-1047	Low to mid 70s	100	0-15	None to Light
February 2, 2016	0600-1145	Low 60s to high 70s	80-100	0-10	None
February 4, 2016	0645-1124	Low 60s to mid 70s	10-50	0-15	None

Table 1. (Continued)

Date	Survey Time	Temperature (° F)	Cloud Cover (%)	Approximate Wind Speed (mph)	Precipitation
February 9, 2016	0630-1300	Mid 50s to mid 60s	50-90	5-20	None
February 11, 2016	0600-1115	Mid 40s to high 50s	15-60	0-13	None
February 16, 2016	0630-1145	Mid 60s to low 70s	50-100	0-5	Light
February 18, 2016	0630-1215	Mid 50s to high 60s	0	0-10	None
February 23, 2016	0620-1115	Mid 60s to mid 70s	95-100	0-5	None
February 25, 2016	0620-1100	Mid 50s to low 60s	20-40	1-10	None
March 1, 2016	0620-1120	Mid 50s to low 70s	20-50	0-10	None
March 3, 2016	0620-1130	Low 60s to mid 70s	20-90	0-10	None
March 8, 2016	0620-1150	Mid 50s to High 70s	30-100	0-20	None
March 10, 2016	0615-1100	Mid 60s to high 70s	20-70	0-20	None
March 15, 2016	0615-1130	High 60s to low 80s	60-100	0-10	None
March 17, 2016	0710-1145	Mid 60s to mid 80s	20-100	0-5	None
March 22, 2016	0710-1200	Mid 40s to mid 60s	10-30	5-15	None
March 24, 2016	0650-1150	Low 60s to high 70s	80-100	0-15	None
March 29, 2016	0650-1145	High 60s to mid 80s	80-90	0-5	None
March 31, 2016	0650-1200	High 60s to mid 80s	90-100	0-10	None
April 5, 2016	0645-1200	Mid 50s to low 80’s	20-75	0-10	None
April 7, 2015	0640-1115	High 50s to high 70s	10-40	0-10	None

RESULTS

Crested caracaras were observed in Transect Areas A, B, C, D, E, and G during the nesting season survey period. Crested caracara observations during the survey period included flights, foraging, courtship, and nest material collection behavior (Appendix E). Crested caracara

locations and flight paths were recorded on aerial maps for surveys conducted on January 20, 22, and 26; February 2, 4, 9, 16, 18, and 23; March 8; and April 15, 2016 (Appendix F).

On February 2, 2016 in Transect Area E, a crested caracara was observed attempting to retrieve a Brazilian pepper (*Schinus terebinthifolius*) branch. The attempt was unsuccessful. The crested caracara was later observed flying west off-site. Potential courtship behavior was observed in Transect C on February 9, 2016, when a crested caracara was observed preening another crested caracara. Birds were followed at both dates and locations and the surrounding areas inspected for potential nests. No trees within or visible from the Project were identified to contain a caracara nest during the time of the nesting season surveys or at any other time while ecologists conducted on-site field work. No prior nesting by crested caracaras has been documented on the Project site.

On January 26, 2016, a pair of crested caracaras was observed eating carrion on Oil Well Road between Transect Areas A and B. The birds were later followed off-site to a nest site located in a clump of four cabbage palms located east of Oil Well Grade Road approximately 3,920 feet north of the Project (Appendix G). From a vantage point on Oil Well Grade Road, the pair was observed picking up sticks and carrying them back to the cabbage palm clump.

REFERENCES

Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System. Procedure No. 550-010-001-a. Third Edition.

Rodgers, J.A., Jr., H.W. Kale II, H.T. Smith (*eds.*). 1996. Rare and Endangered Biota of Florida, Vol. V. Birds. University of Florida Press, Gainseville, Florida, USA.

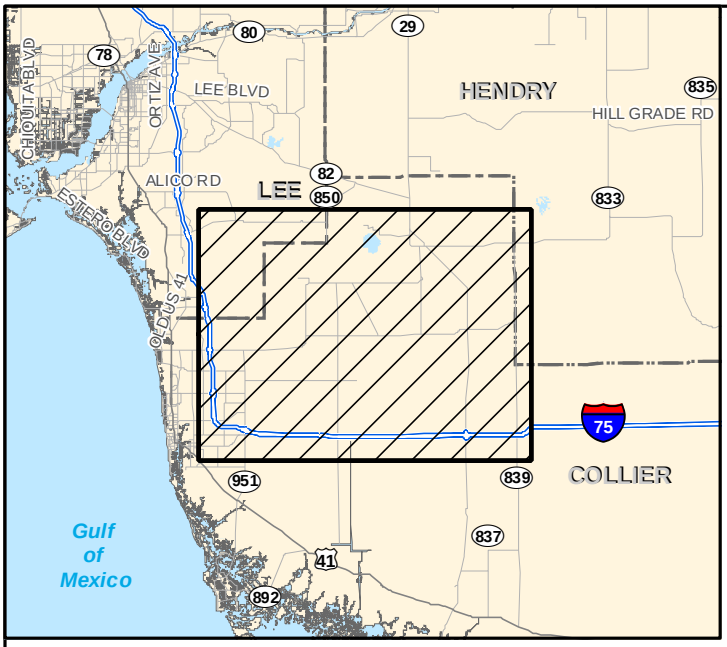
U.S. Fish and Wildlife Service. 1999. South Florida Multi-species Recovery Plan.

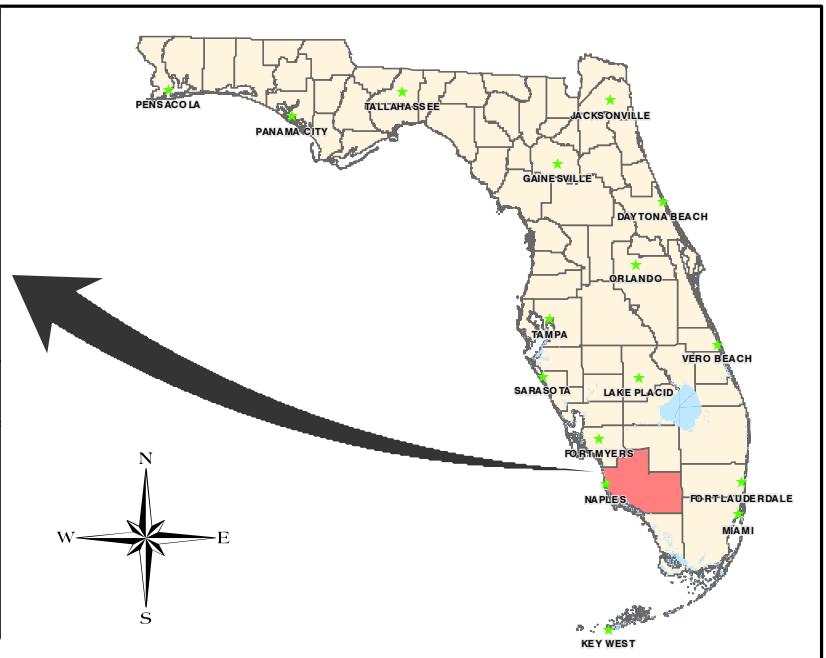
U.S. Fish and Wildlife Service. 2002. Habitat Management Guidelines for Audubon's Crested Caracara in Central and Southern Florida.

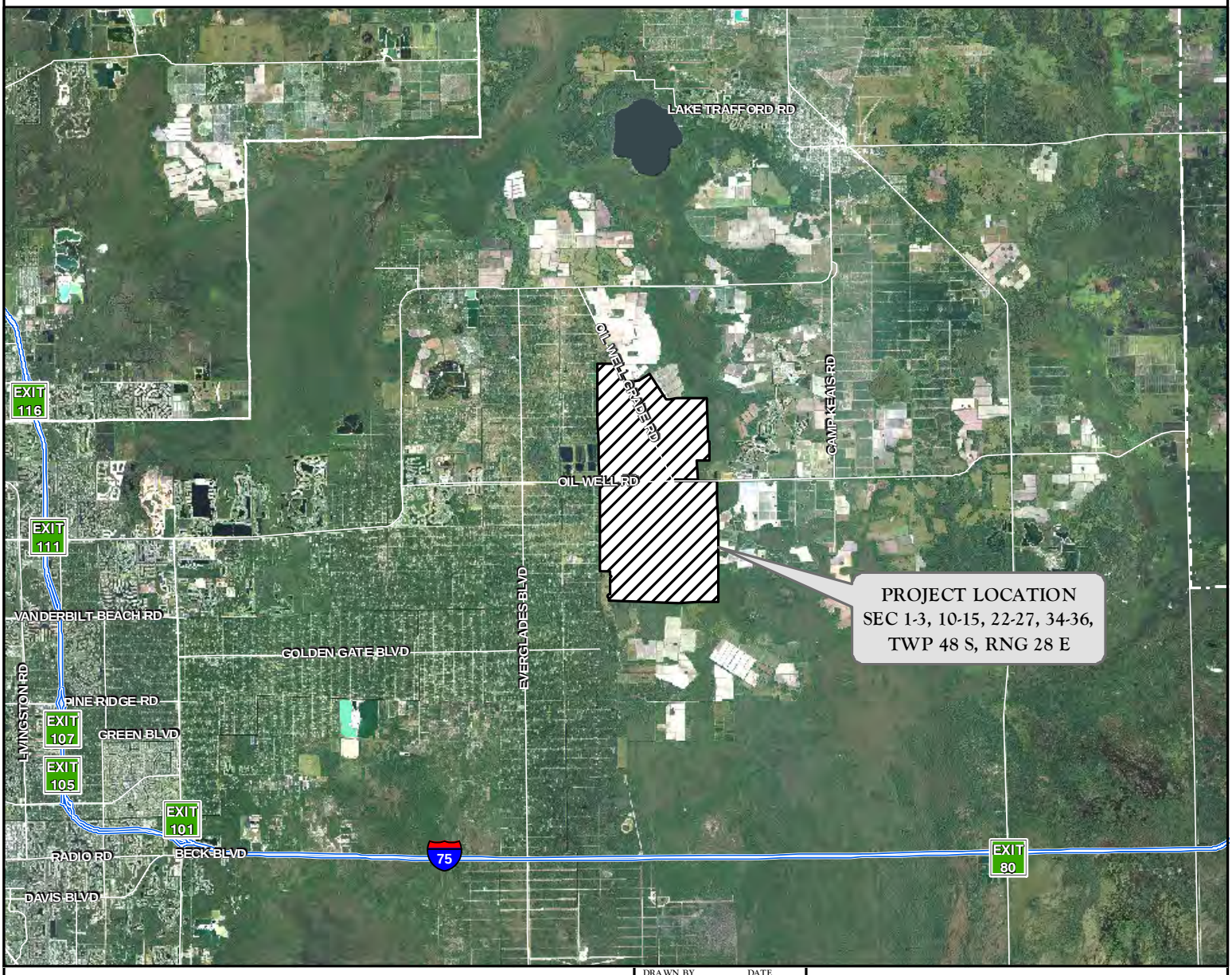
U.S. Fish and Wildlife Service. 2004. Draft Species Conservation Guidelines, South Florida, Audubon's Crested Caracara. April 20, 2004.

APPENDIX A

PROJECT LOCATION MAP







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APPENDIX A. PROJECT LOCATION MAP
RURAL LANDS WEST

DRAWN BY	DATE
T.S.	7/11/16
REVIEWED BY	DATE
D.C.	7/11/16
REVISED	DATE
H.H.	1/4/17

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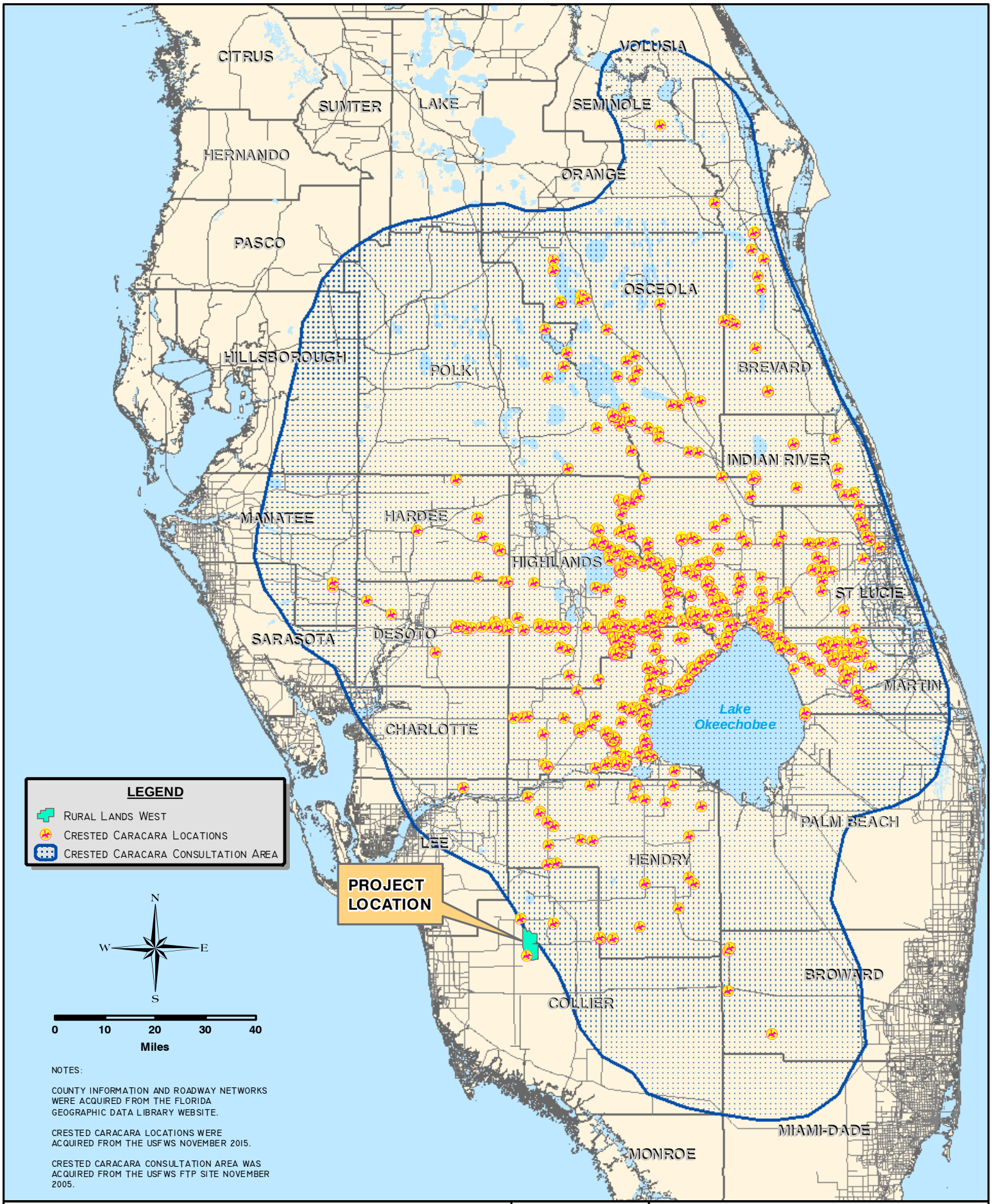
APPENDIX B

CRESTED CARACARA
CONSULTATION AREA WITH LOCATIONS



NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

CRESTED CARACARA LOCATIONS WERE ACQUIRED FROM THE USFWS NOVEMBER 2015.

CRESTED CARACARA CONSULTATION AREA WAS ACQUIRED FROM THE USFWS FTP SITE NOVEMBER 2005.

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APPENDIX B. CRESTED CARACARA CONSULTATION AREA WITH LOCATIONS RURAL LANDS WEST

DRAWN BY	DATE
T.S.	7/11/16
REVIEWED BY	DATE
D.C.	7/11/16
REVISED	DATE
H.H.	1/4/17

PASSARELLA & ASSOCIATES, INC.
Consulting Ecologists

APPENDIX C

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac. ±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac. ±
210	CROPLAND AND PASTURELAND	758.92 Ac. ±
211	IMPROVED PASTURE	7.40 Ac. ±
212	UNIMPROVED PASTURE	37.35 Ac. ±
214	ROW CROPS	4174.76 Ac. ±
260	RURAL OPEN LAND	33.27 Ac. ±
261	FALLOW CROPLAND	184.74 Ac. ±
262	LOW PASTURE, HYDRIC	43.36 Ac. ±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac. ±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac. ±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac. ±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac. ±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac. ±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac. ±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac. ±
422	BRAZILIAN PEPPER	42.76 Ac. ±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac. ±
424	MELALEUCA	0.83 Ac. ±
4241	MELALEUCA, HYDRIC	5.88 Ac. ±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac. ±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac. ±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac. ±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac. ±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac. ±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac. ±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac. ±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac. ±
514	DITCH	30.20 Ac. ±
514W	DITCH, WETLAND	83.77 Ac. ±
525	CATTLE POND	1.89 Ac. ±
525W	CATTLE POND, WETLAND	1.25 Ac. ±
530	RESERVOIR	2.16 Ac. ±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac. ±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac. ±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac. ±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac. ±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac. ±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac. ±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac. ±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac. ±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac. ±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac. ±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac. ±
6249 E1	CYPRESS PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac. ±
6249 E2	CYPRESS PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac. ±
6249 E3	CYPRESS PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac. ±
6249 E4	CYPRESS PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac. ±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac. ±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac. ±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac. ±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac. ±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac. ±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac. ±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac. ±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac. ±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac. ±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac. ±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac. ±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac. ±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac. ±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac. ±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac. ±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac. ±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac. ±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac. ±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac. ±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac. ±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac. ±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac. ±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac. ±
740	DISTURBED LAND	38.81 Ac. ±
7401	DISTURBED LAND, HYDRIC	27.87 Ac. ±
743	SPOIL	0.48 Ac. ±
747	BERM	16.69 Ac. ±
814	ROAD	26.44 Ac. ±
8146	UNPAVED ROAD	49.72 Ac. ±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.dwg DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.dwg DATED JUNE 15, 2007.

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FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP C AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: NORTHWEST JUN 21, 2017 - 4:15PM PLOTTED BY: THONES

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
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PASSARELLA & ASSOCIATES INC
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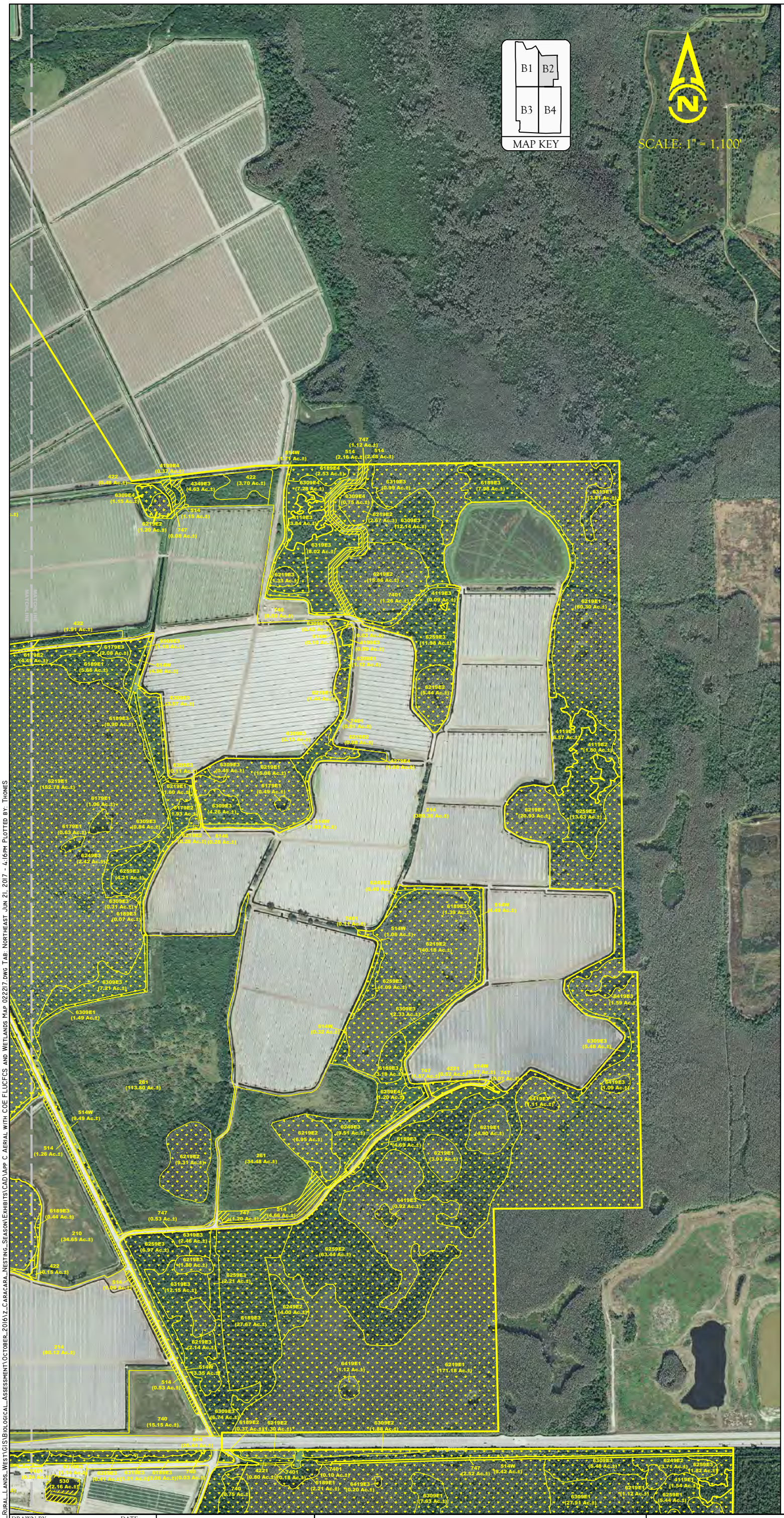
RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C1



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- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

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4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac. ±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac. ±
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514	DITCH	30.20 Ac. ±
514W	DITCH, WETLAND	83.77 Ac. ±
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525W	CATTLE POND, WETLAND	1.25 Ac. ±
530	RESERVOIR	2.16 Ac. ±
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814	ROAD	26.44 Ac. ±
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NOTES:

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DRAWN BY	DATE
H.H.	7/26/16
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13620 Metropolis Avenue
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Phone (239) 274-0067
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Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C2

LEGEND:

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100	RESIDENTIAL	7.46 Ac. ±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac. ±
210	CROPLAND AND PASTURELAND	758.92 Ac. ±
211	IMPROVED PASTURE	7.40 Ac. ±
212	UNIMPROVED PASTURE	37.35 Ac. ±
214	ROW CROPS	4174.76 Ac. ±
260	RURAL OPEN LAND	33.27 Ac. ±
261	FALLOW CROPLAND	184.74 Ac. ±
262	LOW PASTURE, HYDRIC	43.36 Ac. ±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac. ±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac. ±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac. ±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac. ±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac. ±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac. ±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac. ±
422	BRAZILIAN PEPPER	42.76 Ac. ±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac. ±
424	MELALEUCA	0.83 Ac. ±
4241	MELALEUCA, HYDRIC	5.88 Ac. ±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac. ±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac. ±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac. ±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac. ±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac. ±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac. ±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac. ±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac. ±
514	DITCH	30.20 Ac. ±
514W	DITCH, WETLAND	83.77 Ac. ±
525	CATTLE POND	1.89 Ac. ±
525W	CATTLE POND, WETLAND	1.25 Ac. ±
530	RESERVOIR	2.16 Ac. ±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac. ±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac. ±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac. ±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac. ±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac. ±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac. ±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac. ±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac. ±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac. ±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac. ±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac. ±
6249 E1	CYPRESS PINE;CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac. ±
6249 E2	CYPRESS PINE;CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac. ±
6249 E3	CYPRESS PINE;CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac. ±
6249 E4	CYPRESS PINE;CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac. ±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac. ±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac. ±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac. ±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac. ±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac. ±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac. ±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac. ±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac. ±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac. ±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac. ±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac. ±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac. ±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac. ±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac. ±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac. ±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac. ±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac. ±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac. ±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac. ±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac. ±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac. ±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac. ±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac. ±
740	DISTURBED LAND	38.81 Ac. ±
7401	DISTURBED LAND, HYDRIC	27.87 Ac. ±
743	SPOIL	0.48 Ac. ±
747	BERM	16.69 Ac. ±
814	ROAD	26.44 Ac. ±
8146	UNPAVED ROAD	49.72 Ac. ±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP C AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHWEST JUN 21, 2017 - 4:16PM PLOTTED BY: THONES

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C3

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac. ±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac. ±
210	CROPLAND AND PASTURELAND	758.92 Ac. ±
211	IMPROVED PASTURE	7.40 Ac. ±
212	UNIMPROVED PASTURE	37.35 Ac. ±
214	ROW CROPS	4174.76 Ac. ±
260	RURAL OPEN LAND	33.27 Ac. ±
261	FALLOW CROPLAND	184.74 Ac. ±
262	LOW PASTURE, HYDRIC	43.36 Ac. ±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac. ±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac. ±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac. ±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac. ±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac. ±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac. ±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac. ±
422	BRAZILIAN PEPPER	42.76 Ac. ±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac. ±
424	MELALEUCA	0.83 Ac. ±
4241	MELALEUCA, HYDRIC	5.88 Ac. ±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac. ±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac. ±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac. ±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac. ±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac. ±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac. ±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac. ±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac. ±
514	DITCH	30.20 Ac. ±
514W	DITCH, WETLAND	83.77 Ac. ±
525	CATTLE POND	1.89 Ac. ±
525W	CATTLE POND, WETLAND	1.25 Ac. ±
530	RESERVOIR	2.16 Ac. ±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac. ±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac. ±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac. ±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac. ±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac. ±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac. ±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac. ±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac. ±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac. ±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac. ±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac. ±
6249 E1	CYPRESS PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac. ±
6249 E2	CYPRESS PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac. ±
6249 E3	CYPRESS PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac. ±
6249 E4	CYPRESS PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac. ±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac. ±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac. ±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac. ±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac. ±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac. ±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac. ±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac. ±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac. ±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac. ±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac. ±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac. ±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac. ±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac. ±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac. ±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac. ±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac. ±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac. ±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac. ±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac. ±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac. ±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac. ±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac. ±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac. ±
740	DISTURBED LAND	38.81 Ac. ±
7401	DISTURBED LAND, HYDRIC	27.87 Ac. ±
743	SPOIL	0.48 Ac. ±
747	BERM	16.69 Ac. ±
814	ROAD	26.44 Ac. ±
8146	UNPAVED ROAD	49.72 Ac. ±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. II283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP C AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHEAST JUN 21, 2017 - 4:16PM PLOTTED BY: THONES

DRAWN BY	H.H.
DATE	7/26/16
REVIEWED BY	H.P.
DATE	7/26/16
REVISED	
DATE	

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
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PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C4

APPENDIX D

AERIAL WITH TRANSECT AREAS AND OBSERVATION STATIONS

N

SCALE: 1" = 2,200'

TRANSECT "A"

TRANSECT "B"

TRANSECT "C"

TRANSECT "D"

TRANSECT "E"

TRANSECT "F"

TRANSECT "G"

TRANSECT "H"

A–1 A–2 A–3 B–1 B–2 C–1 C–2 D–1 D–2 E–1 E–2 F–1 F–2 G–1 G–2 H–1 H–2

P/L

~OIL WELL GRADE RD~

~OIL WELL ROAD~

~CATHERINE ISLAND GRADE~

~22ND AVE.NE~

~DESOTO BLVD~

LEGEND:

APPROXIMATE TRANSECT AREA BOUNDARY

G–1 OBSERVATION STATION

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP D AERIAL WITH TRANSECT AREAS AND OBSERVATION STATIONS 010417.DWG TAB: 11X17-C TB JUN 23, 2017 - 10:05AM PLOTTED BY: THONES

DRAWN BY	T.S.
DATE	7/11/16
REVIEWED BY	D.C.
DATE	7/11/16
REVISED	H.H.
DATE	1/4/17

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RURAL LANDS WEST

AERIAL WITH TRANSECT AND OBSERVATION STATIONS

DRAWING No. 05CEM1481

SHEET No. APPENDIX D

APPENDIX E

CRESTED CARACARA
MONITORING FIELD DATA FORMS

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-20-16 Start Time: 0836 End Time: 1036 Monitor: Dan Cavanaugh Transect: E-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 40s	5-10 mph NNE	60	None
End	Mid 50s	5-10 mph NE	60	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0946	Adult Crested Caracara (ACC) No. 1 flew in from the west and perched on ground.
2	A	0948	ACC No. 1 flew northeast and perched on ditch berm and retrieved dead grackle.
3	A	0957	ACC No. 1 flew north with carcass into row crops.
4	A	1000	ACC No. 1 flew north and then east out of view with carcass; pursued by four turkey vultures.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
1	A	0958	Four turkey vultures approached ACC No. 1.
2	A	1000	ACC No. 1 approached by turkey vultures and flew east with carcass; pursued by vultures.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-20-16 Start Time: 0645 End Time: 0830 Monitor: Dan Cavanaugh Transect: E-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 40s	5-10 mph NNE	80	None
End	Low 50s	5-10 mph NNE	60	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0714	Observed Adult Crested Caracara (ACC) No. 1 flying from the north and continued south until out of view.
2	A	0726	ACC No. 2 observed from the southeast and continues northwest until out of view.
3	A	0801	ACC No. 3 observed from the southwest, continued northeast, and perched on dead willow.
4	A	0808	ACC No. 3 flew east and perched on Brazilian pepper to west.
5	A	0814	ACC No. 3 flew northwest out of view.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-20-16 Start Time: 0645 End Time: 0845 Monitor: William R. Cox Transect: G-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 40s	0-5 mph NE	30	None
End	Low 60s	5-10 mph NNE	60	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.
			No vultures were observed on or over transect.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-20-16 Start Time: 0900 End Time: 1100 Monitor: William R. Cox Transect: G-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 40s	0-5 mph NE	30	None
End	Low 60s	5-10 mph NNE	60	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.
			No vultures were observed on or over transect.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-22-16 Start Time: 0850 End Time: 1100 Monitor: Kristina Shope Transect: A-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	2-3 mph N	Overcast	Heavy
End	Low 70s	6 mph WSW	Overcast	Heavy

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0850	Observed two sandhill cranes in ditch near gate.
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-22-16 Start Time: 0630 End Time: 0845 Monitor: Kristina Shope Transect: A-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	Overcast	Light
End	High 60s	0-5 mph N	Overcast	Light

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0820	Observed Adult Crested Caracara (ACC) No. 1 flying from the south-southwest and land in pine near path.
2	A	0821	ACC No. 2 flew from the west and headed east-northeast.
3	A	0823	ACC No. 1 flew east-northeast and landed in another pine.
4	A	0825	ACC No. 1 flew east-northeast.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0750	Observed 18 sandhill cranes in field to the north.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-22-16 Start Time: 0645 End Time: 0845 Monitor: Heather Phillips Transect: B-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	5-10 mph SSE	99	Scattered Light
End	High 60s	5-10 mph S	95	Steady Showers

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-22-16 Start Time: 0847 End Time: 1047 Monitor: Heather Phillips Transect: B-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	5-10 mph S	95	Light
End	High 60s	5-10 mph	99	Heavy

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-26-16 Start Time: 0630 End Time: 0830 Monitor: William R. Cox Transect: D-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 50s	0-5 mph E	25	None
End	Mid 60s	0-5 mph	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0630-0830	Observed farm field, ditches, canals, berms, and cabbage palms. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-26-16 Start Time: 0845 End Time: 1100 Monitor: William R. Cox Transect: D-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	0-5 mph E	75	None
End	High 70s	0-5 mph	80	None

Flight Data

Flight No.	Age A/IM	Time	Description
2	A	1100-1145	Observed two Adult Crested Caracara (ACC) flying east and then north along Oil Well Grade Road out of Project site boundary.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
2	A	1145-1200	Observed ACC No. 1 and ACC No. 2 nest building, picking up sticks on Oil Well Grade Road and flying to cabbage palm clump (4 trees immediately east and adjacent to Oil Well Grade Road).

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
2	A	0845-1045	Observed cow pasture, cattle pond, ditches, canal, berm, and large number of cabbage palms. No crested caracara were heard or observed until walking back toward Transect D-1, where 2 ACC were observed flying from the north and perched in a slash pine. ACC No. 1 and ACC No. 2 immediately flew east to Oil Well Grade Road. ACC No. 1 and ACC No. 2 were observed feeding on raccoon carrion. I followed them north to their nest 3800± feet north of the Project site.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-26-16 Start Time: 0643 End Time: 0843 Monitor: Dan Cavanaugh Transect: F-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 50s	0-5 mph E	25	None
End	High 60s	0-5 mph E	40	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-26-16 Start Time: 0850 End Time: 1050 Monitor: Dan Cavanaugh Transect: F-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	0-5 mph E	40	None
End	Mid 70s	0-5 mph E	80	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-27-16 Start Time: 0645 End Time: 0840 Monitor: Dan Cavanaugh Transect: C-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	5-10 mph S	100	Light
End	Low 70s	Calm	100	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-27-16 Start Time: 0847 End Time: 1047 Monitor: Dan Cavanaugh Transect: C-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	Calm	100	Light
End	Mid 70s	0-5 mph NNW	100	Light

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-27-16 Start Time: 0630 End Time: 0815 Monitor: Kristina Shope Transect: H-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	8 mph NW	100	Light
End	Low 70s	15 mph N	100	Light

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 01-27-16 Start Time: 0830 End Time: 1030 Monitor: Kristina Shope Transect: H-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	Calm	100	Light
End	Mid 70s	0-5 mph NNW	100	Light

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-02-16 Start Time: 0645 End Time: 0845 Monitor: Dan Cavanaugh Transect: E-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	1-5 mph E	100; fog	None
End	Low 70s	1-5 mph ESE	100; fog	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0856	Adult Crested Caracara (ACC) No. 1 observed traveling from E-1 to E-2 and perched in row crop.
2	A	0917	ACC No. 1 flew west-northwest across oil well road. Unable to follow.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-02-16 Start Time: 0920 End Time: 1135 Monitor: Dan Cavanaugh Transect: E-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	1-5 mph ESE	100; fog	None
End	High 70s	5-10 mph ESE	80; fog	None

Flight Data

Flight No.	Age A/IM	Time	Description
3	A	0942	Observed Adult Crested Caracara (ACC) No. 1 flying from storage container to the north and then perched on the ground.
4	A	0948	ACC No. 1 flew northwest; no stick was observed. Lost sight of ACC No. 1.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
1	A	0945	Observed ACC No. 1 attempting to grab a Brazilian pepper branch, unsuccessfully.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-02-16 Start Time: 0900 End Time: 1145 Monitor: Bill Cox Transect: G-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	Calm	100; very foggy	None
End	High 60s	0-5 mph E	100; very foggy	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Farm field was flooded. Cabbage palms and berms above water were surveyed. No crested caracara were observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-02-16 Start Time: 0600 End Time: 0845 Monitor: Bill Cox Transect: G-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	Calm	100; very foggy	None
End	High 60s	0-5 mph E	100; very foggy	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Farm field was flooded. Cabbage palms and berms above water were surveyed. No crested caracara were observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-04-16 Start Time: 0915 End Time: 1115 Monitor: Bill Cox Transect: A-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	0-5 mph ESE	10	None
End	Mid 70s	5-15 mph S	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Checked all the oaks, cabbage palms, open farm fields, farm fields, berms, and ditches. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-04-16 Start Time: 0645 End Time: 0845 Monitor: Bill Cox Transect: A-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	0-5 mph ESE	10	None
End	Mid 70s	5-15 mph S	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Checked all the oaks, cabbage palms, and open farm fields. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-04-16 Start Time: 0645 End Time: 0845 Monitor: Dan Cavanaugh Transect: B-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	1-5 mph ESE	10	None
End	Low 70s	5-10 mph ESE	10	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-04-16 Start Time: 0850 End Time: 1124 Monitor: Dan Cavanaugh Transect: B-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	5-10 mph SE	10	None
End	Mid 70s	5-15 mph S	50	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	1059	Observed Adult Crested Caracara (ACC) No. 1 fly west then south, and then perch in farm field.
2	A	1107	ACC No. 2 flew in from the north.
3	A	1109	ACC Nos. 1 and 2 flew east into a ditch.
4	A	1116	ACC Nos. 1 and 2 flew south and perched in oak.
5	A	1118	ACC Nos. 1 and 2 flew east-northeast and perched on east side of berm.
6	A	1124	ACC Nos. 1 and 2 flew north out of view.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
1	A	1109	ACC No. 1 flew with carrion; was pursued by ACC No. 2

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-09-16 Start Time: 0850 End Time: 1300 Monitor: Dan Cavanaugh Transect: C-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	15-20 mph WNW	80	None
End	Mid 60s	5-15 mph WNW	50	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	1123	Two adult crested caracaras (ACC) flew in from the north and perched in the road.
2	A	1127	Both ACCs flew north and perched in a row crop.
3	A	1141	Both ACCs flew south and perched in a farm field road.
4	A	1148	Both ACCs flew east and perched on a berm.
5	A	1154	Both ACCs flew south and perched in a ditch out of view.
6	A	1158	ACC No. 1 flew south from the ditch and perched in a pine.
7	A	1214	ACC No. 1 flew west down the farm road, then north out of view.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
1	A	1103	ACC No. 1 observed preening ACC No. 2.
2	A	1300	Observed three ACCs in Transect A. Two males appeared to be pursuing a female.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-09-16 Start Time: 0645 End Time: 0845 Monitor: Dan Cavanaugh Transect: C-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	15-20 mph NW	80	None
End	Low 60s	15-20 mph WNW	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-09-16 Start Time: 0915 End Time: 1115 Monitor: Bill Cox Transect: D-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	5-10 mph NW	90	None
End	Mid 60s	5-15 mph WNW	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0915-1115	Observed cabbage palms, oaks, open and low farm pastures, ditches, and berms. No crested caracara were observed. Observed crested caracara flying in Transects A and B.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-09-16 Start Time: 0630 End Time: 0845 Monitor: Bill Cox Transect: D-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	5-10 mph NW	90	None
End	Mid 60s	5-15 mph WNW	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0630-0845	Observed cabbage palms, oaks, open and low farm pastures, ditches, and berms. No crested caracara were observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-11-16 Start Time: 0915 End Time: 1115 Monitor: Bill Cox Transect: F-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 40s	Calm-5 mph NE	25	None
End	Mid 50s	5-13 mph NE	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Observed cabbage palms, oaks, open field, ditches, and berms. No crested caracara were observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-11-16 Start Time: 0630 End Time: 0840 Monitor: Bill Cox Transect: F-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 40s	Calm-5 mph NE	25	None
End	Mid 50s	5-13 mph NE	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Observed cabbage palms, oaks, open field, ditches, and berms. No crested caracara were observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-11-16 Start Time: 0820 End Time: 1020 Monitor: Kristina Shope Transect: H-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 40s	Calm	15	None
End	High 50s	2 mph N	15	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-11-16 Start Time: 0600 End Time: 0800 Monitor: Kristina Shope Transect: H-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 40s	Calm	60	None
End	Mid 40s	Calm	15	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-16-16 Start Time: 0632 End Time: 1032 Monitor: Dan Cavanaugh Transect: E-1/E-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	0-5 mph N	100	Light
End	Low 70s	0-5 mph NE	50	Light

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0832	Observed one Adult Crested Caracara (ACC) perched on berm.
	A	0835	ACC No. 1 flew east and perched near carrion.
2	A	0840	ACC No. 1 flew across Oil Well Grade Road to the west and perched on berm.
3	A	0845	ACC No. 1 flew east and perched in pine.
4	A	0908	ACC No. 1 flew west and perched on ground near carrion.
5	A	0914	ACC No. 1 flew south towards Transect F and out of sight.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0846	Observed vultures flew in and chased ACC No. 1 from carrion and began consuming meat.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-16-16 Start Time: 0630 End Time: 0830 Monitor: William R. Cox Transect: G-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	100	Light
End	High 60s	Calm	75	Light

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0630-0830	Surveyed cabbage palms, oaks, pasture, ditches, and berms. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-16-16 Start Time: 0915 End Time: 1145 Monitor: William R. Cox Transect: G-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	0-5 mph NE	75	Light
End	Low 70s	0-5 mph NE	50	Light

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0915	Observed one Adult Crested Caracara flying over cypress island from the north and out of sight to the east.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0915-1145	Surveyed cabbage palms, oaks, pasture, ditches, and berms.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-18-16 Start Time: 0840 End Time: 1215 Monitor: Kristina Shope Transect: A-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 50s	1 mph N	Clear	None
End	High 60s	Calm	Clear	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0840	Adult Crested Caracara (ACC) No. 1 flew northwest and landed in a large pine.
2	A	0845	ACC No. 1 headed southwest out of sight in the woods.
3	A	0900	ACC No. 1 flew back to wooded area and disappeared as I approached.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0900-0950	Walked to ditch/tree line in search of caracara; none observed. Observed raccoon and otter. Walked to other side of tree line in search of caracara or nest; none observed.
	A	1000	ACC No. 1 briefly observed to the southwest above wooded area.
		1040-1215	Area of last caracara sighting was searched as well as farm field located west of the transect.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02/18/16 Start Time: 0630 End Time: 0830 Monitor: Kristina Shope Transect: A-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid-50s	1 mph N	None	None
End	High 50s	1 mph N	None	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	?	0625	Observed possible crested caracara fly to the west.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description
			No crested caracara activities were observed.

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Observed one potential crested caracara in flight.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-18-16 Start Time: 0835 End Time: 1035 Monitor: Dan Cavanaugh Transect: B-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 50s	0-5 mph N	Clear	None
End	High 60s	0-5 mph N	Clear	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0906	Observed black vultures soaring overhead. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-18-16 Start Time: 0630 End Time: 0830 Monitor: Dan Cavanaugh Transect: B-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	1-5 mph N	Clear	None
End	High 50s	5-10 mph NNE	Clear	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-23-16 Start Time: 0630 End Time: 0830 Monitor: Dan Cavanaugh Transect: C-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	100	None
End	Low 70s	Calm	100	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-23-16 Start Time: 0836 End Time: 1100 Monitor: Dan Cavanaugh Transect: C-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	Calm	95	None
End	Mid 70s	Calm	100	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0911	Adult Crested Caracara (ACC) No. 1 flew in from the west and perched in the field to feed on dead soft-shell turtle.
2	A	0941	ACC No. 1 flew south, perched in pine with carrion and proceeded to feed.
3	A	1019	ACC No. 1 flew south and perched on berm.
4	A	1033	ACC No. 1 flew north, then south, then west out of sight.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
1	A	0921	ACC No. 1 attempted to chase off turkey vulture.
		0926-1023	Rain fell for just under an hour.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-23-16 Start Time: 0915 End Time: 1115 Monitor: Bill Cox Transect: D-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	95	None
End	Low 70s	Calm	100	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Surveyed cabbage palms, oaks, snags, canal, cattle ponds, and pasture. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-23-16 Start Time: 0620 End Time: 0830 Monitor: Bill Cox Transect: D-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	95	None
End	Low 70s	Calm	100	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Surveyed farm field, ditches, berms, and trees along the berm. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-25-16 Start Time: 0620 End Time: 0830 Monitor: Bill Cox Transect: F-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	5-10 mph NNW	20	None
End	Low 60s	5-10 mph NNW	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Surveyed farm fields, canals, ditches, berms, and cabbage palms. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-25-16 Start Time: 0900 End Time: 1100 Monitor: Bill Cox Transect: F-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	5-10 mph NNW	20	None
End	Low 60s	5-10 mph NNW	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Surveyed farm fields, canals, ditches, berms, and cabbage palms. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-25-16 Start Time: 0625 End Time: 0825 Monitor: Dan Cavanaugh Transect: H-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	1-5 mph NNW	20	None
End	High 50s	5-10 mph NNW	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 02-25-16 Start Time: 0830 End Time: 1030 Monitor: Dan Cavanaugh Transect: H-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 50s	5-10 mph NNW	30	None
End	Low 60s	5-10 mph NNW	40	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0912	Observed vultures soaring to the west. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-01-16 Start Time: 0620 End Time: 0820 Monitor: Dan Cavanaugh Transect: E-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	Calm	30	None
End	Mid 60s	Calm	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0620-0820	Observed vultures at 0640 soaring to the north. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-01-16 Start Time: 0830 End Time: 1030 Monitor: Dan Cavanaugh Transect: E-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	30	None
End	Low 70s	Calm	20	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0830-1030	Observed vultures perched on berm on the north side of the field. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-01-16 Start Time: 0915 End Time: 1120 Monitor: Bill Cox Transect: G-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	Calm	25	None
End	Mid 60s	5-10 mph ESE	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Observed cabbage palms, oaks, pine, cow pasture, ditches, canals, and berms for crested caracara and their nests. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-01-16 Start Time: 0620 End Time: 0820 Monitor: Bill Cox Transect: G-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	Calm	25	None
End	Mid 60s	5-10 mph ESE	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
			Observed cabbage palms, oaks, pine, cow pasture, ditches, canals, and berms for crested caracara and their nests. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-03-16 Start Time: 0620 End Time: 0830 Monitor: William R. Cox Transect: A-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	Calm	90	None
End	High 60s	Calm	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0620-0830	Searched cabbage palms, oaks, ditches, berms, and farm fields for crested caracara and nests. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-03-16 Start Time: 0930 End Time: 1130 Monitor: William R. Cox Transect: A-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	5-10 mph ESE	70	None
End	Mid 70s	5-10 mph ESE	70	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0930-1130	Searched cow pasture, cow ponds, cabbage palms, and oaks for crested caracara and their nests. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-03-16 Start Time: 0835 End Time: 1035 Monitor: Dan Cavanaugh Transect: B-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	5-10 mph ENE	50	None
End	Mid 60s	5-10 mph E	20	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0840	Observed vultures soaring to the west. No crested caracara were heard or observed.
		0930	Observed black vulture landing north in row crop. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-03-16 Start Time: 0627 End Time: 0827 Monitor: Dan Cavanaugh Transect: B-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	5-10 mph ENE	20	None
End	Mid 70s	5-10 mph E	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0627-0827	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-08-16 Start Time: 0900 End Time: 1150 Monitor: Dan Cavanaugh Transect: C-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 70s	5-10 mph E	30	None
End	High 70s	15-20 mph ESE	100	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	1003	Observed three Adult Crested Caracara (ACC) flying south and out of sight.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		1003	ACC No. 1 was observed chasing ACC No. 2.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-08-16 Start Time: 0620 End Time: 0850 Monitor: Dan Cavanaugh Transect: C-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	40	None
End	Mid 70s	5-10mph E	30	None

Flight Data

Flight No.	Age A/IM	Time	Description
1	A	0708	Observed one Adult Crested Caracara (ACC) No. 1 flying from the west and perched on an oak.
2	A	0712	ACC No. 1 flew into row crop.
3	A	0805	ACC No. 1 flew and perched in oak to the west.
4	A	0805	ACC No. 2 flew and perched in oak to the west.
5	A	0810	ACC No. 1 flew and perched in oak to the north. Lost visual.
6	A	0810	ACC No. 2 flew and perched in oak to the north. Lost visual.

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
1	A	0716	ACC No. 2 perched in row corp. ACC No. 1 and ACC No. 2 forage in row crop.
2	A	0810	Attempted to locate ACC No. 1 and ACC No. 2 after perching in oak. Both ACCs were gone once repositioned. Unable to determine direction in which they left.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-08-16 Start Time: 0620 End Time: 0830 Monitor: William R. Cox Transect: D-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	Calm	30	None
End	High 50s	Calm	40	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0620-0830	Searched the agricultural fields, ditches, berms, canals, cabbage palms, and oaks for crested caracara and their nests. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-08-16 Start Time: 0910 End Time: 1115 Monitor: William R. Cox Transect: D-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	5-10 mph SE	50	None
End	High 60s	5-10 mph SE	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0910-1115	Searched the cattle pasture, pond, ditches, berms, canal, cabbage palms, and oaks for crested caracara and their nest. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-10-16 Start Time: 0615 End Time: 0830 Monitor: William R. Cox Transect: F-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	25	None
End	Low 70s	Calm	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0615-0830	Surveyed open farm fields, canals, ditches, berms, cabbage palms, and oak trees. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-10-16 Start Time: 0900 End Time: 1100 Monitor: William R. Cox Transect: F-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 70s	5-10 mph ESE	40	None
End	High 70s	5-10 mph ESE	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0900-1100	Surveyed open farm fields, canals, ditches, berms, cabbage palms, and oak trees. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-10-16 Start Time: 0620 End Time: 0820 Monitor: Dan Cavanaugh Transect: H-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	0-5 mph E	50	None
End	Low 70s	0-5 mph E	20	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0620-0820	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-10-16 Start Time: 0830 End Time: 1030 Monitor: Dan Cavanaugh Transect: H-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	0-5 mph E	20	None
End	High 70s	15-20 mph SE	70	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0830-1030	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-15-16 Start Time: 0706 End Time: 0906 Monitor: Dan Cavanaugh Transect: E-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	0-5 mph E	100	Heavy fog
End	Mid 70s	0-5 mph WSW	100	Light fog

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0706-0906	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-15-16 Start Time: 0912 End Time: 1112 Monitor: Dan Cavanaugh Transect: E-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	0-5 mph E	100	Heavy fog
End	Mid 70s	0-5 mph WSW	60	Light fog

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0912-1112	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-15-16 Start Time: 0615 End Time: 0830 Monitor: William R. Cox Transect: G-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	0-5 mph WSW	100	Light fog
End	Mid 70s	0-5 mph W	60	

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0615-0830	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-15-16 Start Time: 0930 End Time: 1130 Monitor: William R. Cox Transect: G-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 70s	Calm	90	None
End	Low 80s	5-10 mph ESE	75	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0930-1130	Searched the cow pasture, ditches, canals, berms, cabbage palms, and oaks. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-17-16 Start Time: 0945 End Time: 1145 Monitor: William R. Cox Transect: A-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 70s	Calm	25	None
End	Low 80s	0-5 mph ESE	25	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0945-1145	Searched the farm fields, cabbage palms, oaks, canals, ditches, and berms for crested caracara. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-17-16 Start Time: 0710 End Time: 0915 Monitor: William R. Cox Transect: A-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	Calm	Foggy	None
End	Mid 70s	0-5 mph ESE	Foggy	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0710-0915	Searched the pasture, cabbage palms, oaks, ponds, and ditches for crested caracara. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-17-16 Start Time: 0913 End Time: 1113 Monitor: Dan Cavanaugh Transect: B-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	Calm	100	None
End	Mid 80s	0-5 mph	20	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0913-1113	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-17-16 Start Time: 0710 End Time: 0910 Monitor: Dan Cavanaugh Transect: B-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	100	None
End	High 60s	Calm	100	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0710-0910	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-22-16 Start Time: 0710 End Time: 0910 Monitor: Dan Cavanaugh Transect: C-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 40s	5-10 mph NNE	30	None
End	Low 50s	5-10 mph NNE	10	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0710-0910	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-22-16 Start Time: 0920 End Time: 1120 Monitor: Dan Cavanaugh Transect: C-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 50s	5-10 mph NNE	10	None
End	Mid 60s	10-15 mph NE	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0920-1120	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-22-16 Start Time: 0945 End Time: 1200 Monitor: William R. Cox Transect: D-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 50s	5 mph N	25	None
End	Mid 60s	5-15 mph NE	30	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0945-1200	Observed farm fields and their ditches, canals, berms, cabbage palms, and oaks. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-22-16 Start Time: 0655 End Time: 0900 Monitor: William R. Cox Transect: D-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 40s	5 mph N	25	None
End	Low 50s	5-15 mph NE	25	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0655-0900	Observed a large number of cabbage palms, canals, ditches, cattle ponds, and cow pasture. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-24-16 Start Time: 0650 End Time: 0900 Monitor: William R. Cox Transect: F-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	Calm	80	None
End	Mid 70s	5-15 mph SSE	80	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0650-0900	Observed farm fields, ditches, canals, berms, cabbage palms, and oaks. Observed black turkey vultures feeding on carrion. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-24-16 Start Time: 0940 End Time: 1150 Monitor: William R. Cox Transect: F-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	90	None
End	High 70s	5-15 mph SSE	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0940-1150	Observed farm fields, ditches, canals, berms, cabbage palms, and oaks. Observed black turkey vultures feeding on carrion. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-24-16 Start Time: 0915 End Time: 1115 Monitor: Dan Cavanaugh Transect: H-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	5-10 mph ESE	90	None
End	Low 70s	10-15 mph ESE	100	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0915-1115	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-24-16 Start Time: 0710 End Time: 0910 Monitor: Dan Cavanaugh Transect: H-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	Calm	80	None
End	High 60s	5-10 mph ESE	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0710-0910	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-29-16 Start Time: 0910 End Time: 1110 Monitor: Dan Cavanaugh Transect: E-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 70s	Calm	80	None
End	Low 80s	Calm	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0910-1110	Observed 20± vultures perched on ground in row crops to the west. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-29-16 Start Time: 0700 End Time: 0905 Monitor: Dan Cavanaugh Transect: E-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	Calm	80	None
End	Mid 80s	Calm	80	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0700-0905	Observed vultures flying to the north. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-29-16 Start Time: 0945 End Time: 1145 Monitor: William R. Cox Transect: G-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 70s	0-5 mph NE	90	None
End	High 70s	0-5 mph NE	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0945-1145	Observed cow pasture, ditches, canals, berms, cattle pond, oaks, and cabbage palms. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-29-16 Start Time: 0650 End Time: 0900 Monitor: William R. Cox Transect: G-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	Calm	80	None
End	Mid 70s	Calm	80	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0650-0900	Observed cow pasture, ditches, canals, berms, cattle pond, oaks, and cabbage palms. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-31-16 Start Time: 0650 End Time: 0900 Monitor: William R. Cox Transect: A-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	0-10 mph ESE	100 (+ foggy)	None
End	Low 70s	0-5 mph E	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0650-0900	Observed farm field, fence posts, ditches, canals, berms, cabbage palms, and pines. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-31-16 Start Time: 1000 End Time: 1200 Monitor: William R. Cox Transect: A-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 70s	0-10 mph ESE	100 (+ foggy)	None
End	Low 80s	0-5 mph E	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		1000-1200	Observed cow pasture, fence posts, oaks, ditches, cattle ponds, and cabbage palms. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-31-16 Start Time: 0700 End Time: 0900 Monitor: Dan Cavanaugh Transect: B-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 60s	0-10 mph ESE	100	None
End	Low 70s	0-5 mph E	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0700-0900	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 03-31-16 Start Time: 0915 End Time: 1115 Monitor: Dan Cavanaugh Transect: B-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	0-5 mph E	90	None
End	Low 80s	5-10 mph SE	90	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0915-1115	Observed black vultures kettling to the east. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 04-05-16 Start Time: 0645 End Time: 0850 Monitor: Dan Cavanaugh Transect: C-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 60s	0-5 mph ENE	20	None
End	Low 70s	5-10 mph N	60	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0645-0850	Observed vultures on ground to the east on berm. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 04-05-16 Start Time: 0910 End Time: 1110 Monitor: Dan Cavanaugh Transect: C-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	5-10 mph N	20	None
End	High 70s	5-10 mph N	40	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0910-1110	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 04-05-16 Start Time: 0645 End Time: 0900 Monitor: William R. Cox Transect: D-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 50s	Calm	20	None
End	Mid 60s	0-10 mph NE	50	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0645-0900	Observed agricultural field and associated ditches, canals, berms, cabbage palms, pines, and oaks. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 04-05-16 Start Time: 0945 End Time: 1200 Monitor: William R. Cox Transect: D-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	0-5 mph NE	50	None
End	Low 80s	0-10 mph NE	75	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0945-1200	Observed cattle pasture, ditches, canals, cow ponds, berm, and large area of cabbage palm. No crested caracara were heard or observed in Transect D.
		1100	Observed crested caracara at 1100 flying in Transect E.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 04-07-16 Start Time: 0900 End Time: 1115 Monitor: William R. Cox Transect: F-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	0-10 mph WSW	30	None
End	High 70s	0-10 mph WSW	40	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0900-1115	Observed agricultural fields, ditches, canals, berms, cabbage palms, pines, and oaks. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 04-07-16 Start Time: 0640 End Time: 0845 Monitor: William R. Cox Transect: F-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	High 50s	Calm	10	None
End	Mid 60s	Calm	20	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0640-0845	Observed agricultural fields, ditches, canals, berms, cabbage palms, pines, and oaks. No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 04-07-16 Start Time: 0905 End Time: 1105 Monitor: Dan Cavanaugh Transect: H-1

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Low 70s	Calm	20	None
End	High 70s	0-10 mph WSW	40	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0905-1105	No crested caracara were heard or observed.

RURAL LANDS WEST
CARACARA MONITORING
FIELD DATA FORM

Date: 04-07-16 Start Time: 0655 End Time: 0855 Monitor: Dan Cavanaugh Transect: H-2

Weather Data

Time	Temperature	Wind Speed	% Cloud Cover	Rain
Start	Mid 60s	Calm	10	None
End	Low 70s	Calm	20	None

Flight Data

Flight No.	Age A/IM	Time	Description

Nesting Data: Observed Activity

(Perching, Preening, Courtship, Feeding, Nest Building, Incubation, Head Color Change, Head Throwback, Diving)

No.	Age A/IM	Time	Description

General Observations

(Caracara reaction to passing planes, trains, trucks, pedestrians, other birds, etc.)

No.	Age A/IM	Time	Description
		0655-0855	No crested caracara were heard or observed.

APPENDIX F

CRESTED CARACARA NESTING SEASON SURVEY OBSREVATION AERIAL MAPS

SCALE: 1" = 800'

~OIL WELL ROAD~

TRANSECT "E"

E-1

E-2

TRANSECT E

E-1 OBSERVATION STATION 1
0630-0830

E-2 OBSERVATION STATION 2
0836-1036

LEGEND:

- ADULT CARACARA #1 FLIGHT PATH
- ADULT CARACARA #2 FLIGHT PATH
- ADULT CARACARA #3 FLIGHT PATH
- GROUND
- PERCH TREE

E-1 OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	0946	ACC # 1
2	0948	ACC # 1
3	0957	ACC # 1
4	1000	ACC # 1

E-2 OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	0714	ACC # 1
2	0726	ACC # 2
3	0801	ACC # 3
4	0808	ACC # 3
5	0814	ACC # 3

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No.ERP SSAI5 TO PAI I22915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F_TRANSECT E_AERIAL_WITH_CRESTED_CARACARA_OBSERVATIONS.DWG TAB: E (1-20-16) JUN 21, 2017 - 4:22PM PLOTTED BY: THONES

DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

13620 Metropolis Avenue
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PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
JANUARY 20, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT E

TRANSECT A

A-1 OBSERVATION STATION 1
0850-1100

A-2 OBSERVATION STATION 2
0630-0845

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	0820	ACC # 1
2	0821	ACC # 1
3	0823	ACC # 1
4	0825	ACC # 1

LEGEND:

ADULT CARACARA #1 FLIGHT PATH

ADULT CARACARA #2 FLIGHT PATH

* PERCH TREE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSAI5 TO PAI I22915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F_TRANSECT A AERIAL WITH CRESTED CARACARA OBSERVATIONS.DWG TAB: A (1-22-16) JUN 21, 2017 - 4:18PM PLOTTED BY: THONES

DRAWN BY	DATE
F.L./T.S.	5/26/16
REVIEWED BY	DATE
D.C.	5/26/16
REVISED	DATE
H.H.	3/2/17

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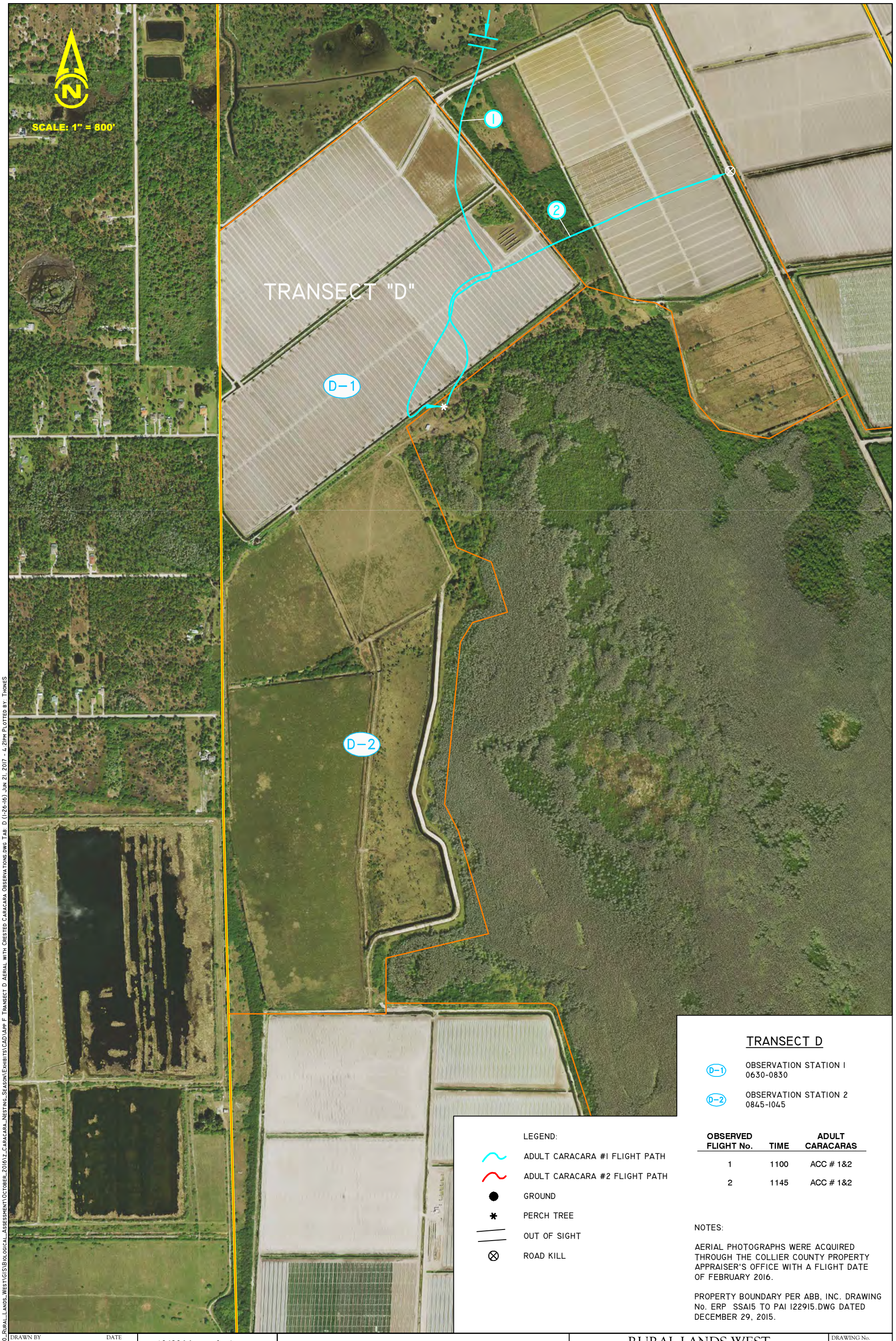
PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
JANUARY 22, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT A



TRANSECT D

D-1 OBSERVATION STATION 1
0630-0830

D-2 OBSERVATION STATION 2
0845-1045

LEGEND:

- ADULT CARACARA #1 FLIGHT PATH
- ADULT CARACARA #2 FLIGHT PATH
- GROUND
- PERCH TREE
- OUT OF SIGHT
- ROAD KILL

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	1100	ACC # 1&2
2	1145	ACC # 1&2

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSAI5 TO PAI I22915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F_TRANSECT D AERIAL WITH CRESTED CARACARA OBSERVATIONS.DWG TAB: D (1-26-16) JUN 21, 2017 - 4:21PM PLOTTED BY: THONES

DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

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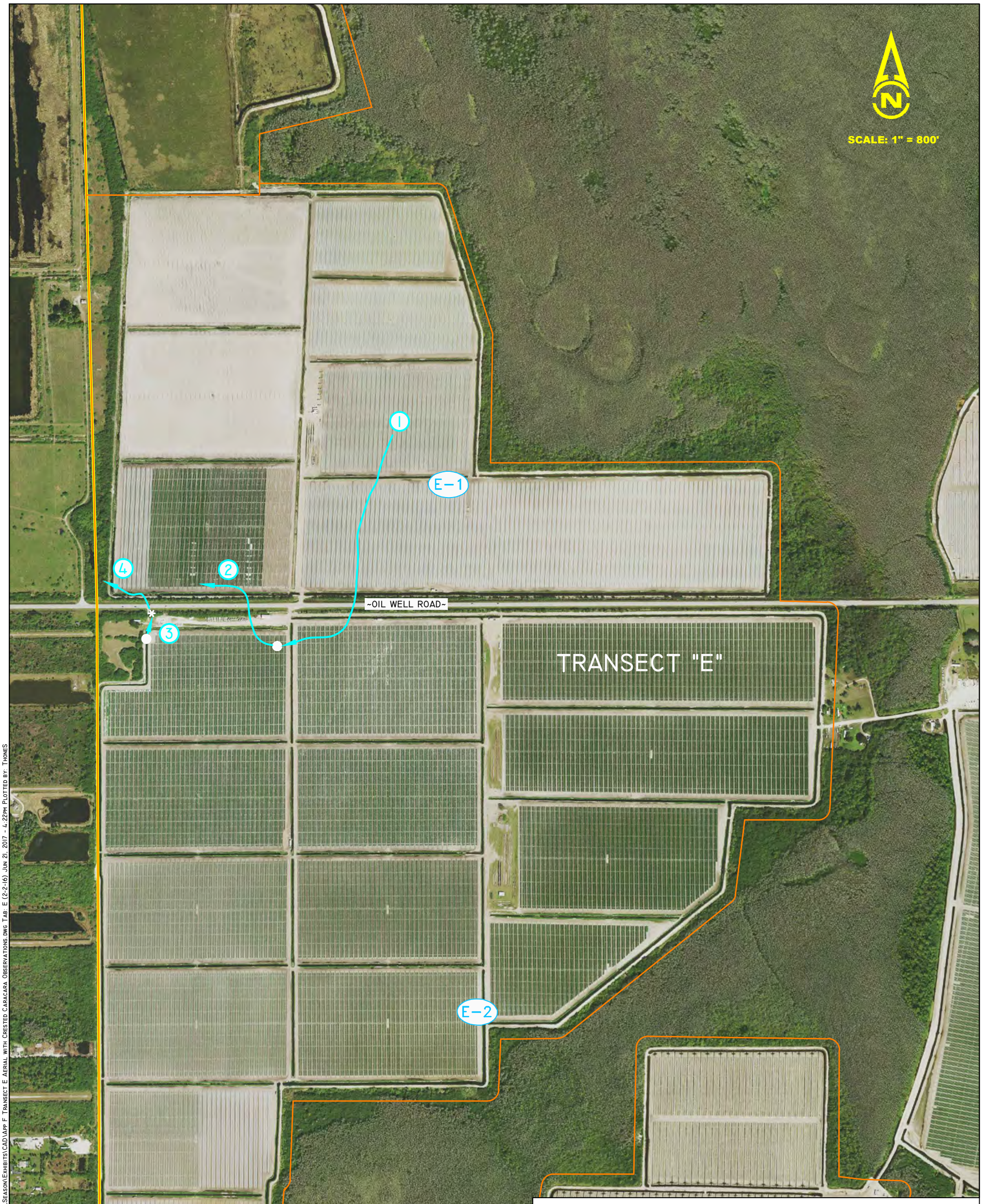
RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
JANUARY 26, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT D



TRANSECT E

		OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
E-1	OBSERVATION STATION 1 0645-0845	1	0856	ACC # 1
		2	0917	ACC # 1
E-2	OBSERVATION STATION 2 0920-1135	3	0942	ACC # 1
		4	0948	ACC # 1

LEGEND:

- ADULT CARACARA #1 FLIGHT PATH
- ADULT CARACARA #2 FLIGHT PATH
- GROUND
- PERCH TREE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSA15 TO PA1 122915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F_TRANSECT E_AERIAL_WITH_CRESTED_CARACARA_OBSERVATIONS.DWG TAB: E (2-2-16) JUN 21, 2017 - 4:22PM PLOTTED BY: THONES

DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

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PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON
SURVEY OBSERVATIONS
FEBRUARY 2, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT E

SCALE: 1" = 800'

TRANSECT "B"

P/L

B-1

B-2

1

2

3

4

5

6

OIL WELL GRADE RD

TRANSECT B

B-1 OBSERVATION STATION 1
0645-0845

B-2 OBSERVATION STATION 2
0850-1124

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	1059	ACC # 2
2	1107	ACC # 1
3	1109	ACC # 1&2
4	1116	ACC # 1&2
5	1118	ACC # 1&2
6	1124	ACC # 1&2

LEGEND:

ADULT CARACARA #1 FLIGHT PATH

ADULT CARACARA #2 FLIGHT PATH

GROUND

PERCH TREE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSAI5 TO PAI I22915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F TRANSECT B AERIAL WITH CRESTED CARACARA OBSERVATIONS.DWG TAB: B (2-4-16) JUN 21, 2017 - 4:19PM PLOTTED BY: THONES

DRAWN BY	DATE
F.L./T.S.	5/26/16
REVIEWED BY	DATE
D.C.	5/26/16
REVISED	DATE
H.H.	3/2/17

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PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
FEBRUARY 4, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT B

SCALE: 1" = 800'

P/L

TRANSECT "C"

C-1

C-2

TRANSECT C

C-1 OBSERVATION STATION 1
0850-1300

C-2 OBSERVATION STATION 2
0645-0845

LEGEND:

ADULT CARACARA #1 FLIGHT PATH

ADULT CARACARA #2 FLIGHT PATH

GROUND

PERCH TREE

OUT OF SIGHT

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	1123	ACC # 1&2
2	1127	ACC # 1&2
3	1141	ACC # 1&2
4	1148	ACC # 1
5	1154	ACC # 2
6	1158	ACC # 1
7	1214	ACC # 1

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSA15 TO PAI 122915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F_TRANSECT_C_AERIAL_WITH_CRESTED_CARACARA_OBSERVATIONS.DWG TAB: C (2-9-16 JUN 21, 2017 - 4:20PM PLOTTED BY: THONES

DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

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RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
FEBRUARY 9, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT C

TRANSECT E

E-1 OBSERVATION STATION 1
0632-1032

E-2 OBSERVATION STATION 2
0632-1032

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	0835	ACC # 1
2	0840	ACC # 1
3	0845	ACC # 1
4	0908	ACC # 1
5	0914	ACC # 1

LEGEND:

- ADULT CARACARA #1 FLIGHT PATH
- ADULT CARACARA #2 FLIGHT PATH
- GROUND
- PERCH TREE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSAI5 TO PAI I22915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F TRANSECT E AERIAL WITH CRESTED CARACARA OBSERVATIONS.DWG TAB: E (2-16-16) JUN 21, 2017 - 4:23PM PLOTTED BY: THONES

DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

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RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
FEBRUARY 16, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT E

SCALE: 1" = 800'

G–2

TRANSECT "G"

G–1

TRANSECT G

G–1 OBSERVATION STATION 1
0630-0830

G–2 OBSERVATION STATION 2
0915-1145

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	0915	ACC # 1

LEGEND:

ADULT CARACARA #1 FLIGHT PATH

OUT OF SIGHT

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSA15 TO PAI 122915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F_TRANSECT G AERIAL WITH CRESTED CARACARA OBSERVATIONS.DWG TAB: G (2-16-16) JUN 21, 2017 - 4:23PM PLOTTED BY: THONES

DRAWN BY	DATE
F.L./T.S.	5/26/16
REVIEWED BY	DATE
D.C.	5/26/16
REVISED	DATE
H.H.	3/2/17

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Consulting Ecologists

RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON
SURVEY OBSERVATIONS
FEBRUARY 16, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT G

TRANSECT A

A-1	OBSERVATION STATION 1 0840-1215
A-2	OBSERVATION STATION 2 0630-0830

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	0840	ACC # 1
2	0845	ACC # 1
3	0900	ACC # 1

LEGEND:

- ADULT CARACARA #1 FLIGHT PATH
- ADULT CARACARA #2 FLIGHT PATH
- * PERCH TREE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSA15 TO PA1 122915.DWG DATED DECEMBER 29, 2015.

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DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

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RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
FEBRUARY 18, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT A

TRANSECT C

		OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
C-1	OBSERVATION STATION 1 0630-0830	1	0911	ACC # 1
		2	0941	ACC # 1
C-2	OBSERVATION STATION 2 0836-1100	3	1019	ACC # 1
		4	1033	ACC # 1

LEGEND:

ADULT CARACARA #1 FLIGHT PATH

* PERCH TREE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSA15 TO PA I22915.DWG DATED DECEMBER 29, 2015.

DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

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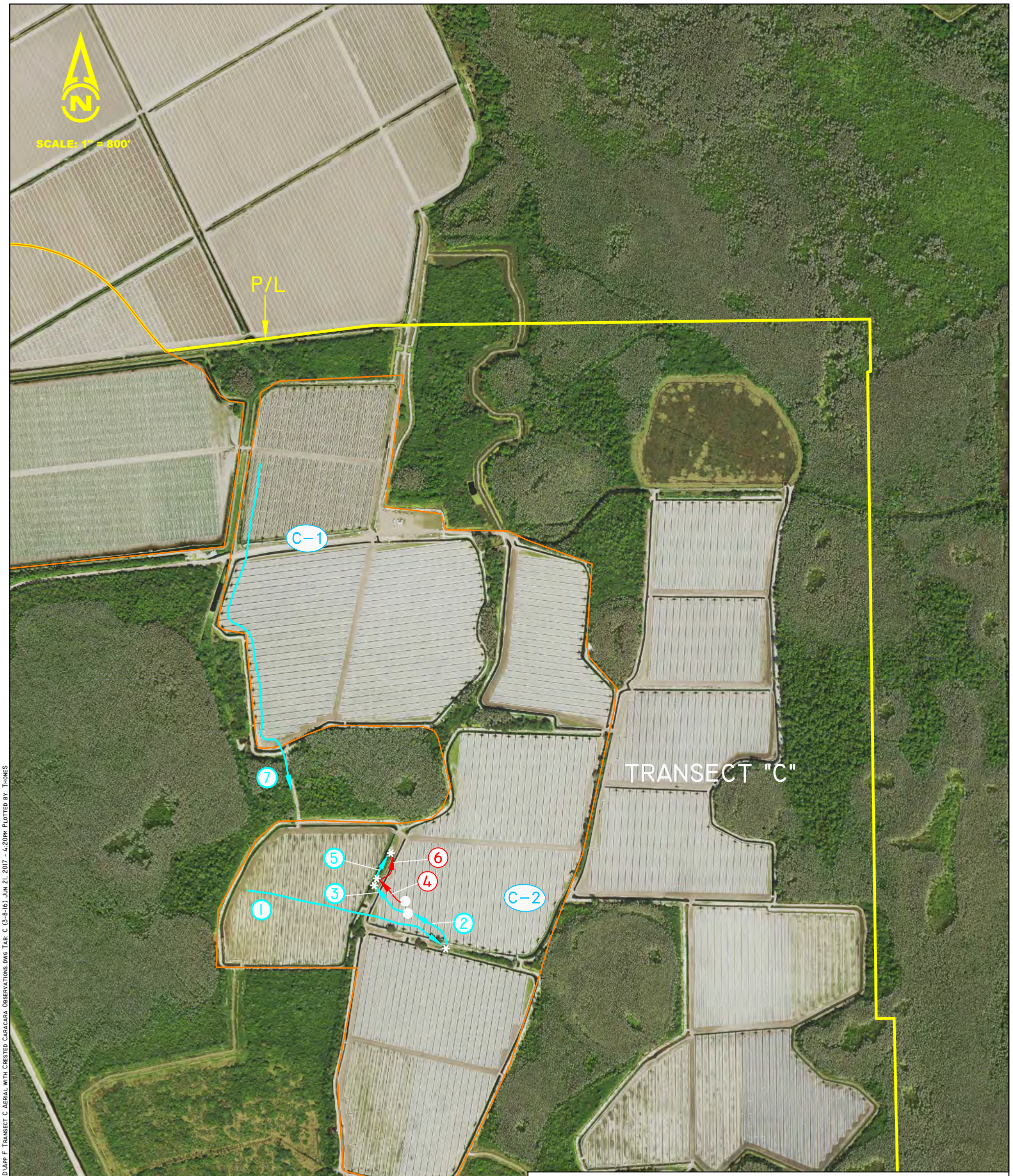
PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
FEBRUARY 23, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT C

J:\2005\05cem1481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016\Z_Caracara_Nesting_Season\Exhibits\CAD\App F_Transect C_Aerial with Crested Caracara Observations.dwg Tab: C (2-23-16) Jun 21, 2017 - 4:20pm Plotted by: Thones



TRANSECT C

C-1	OBSERVATION STATION 1 0900-1150
C-2	OBSERVATION STATION 2 0620-0850

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	0708	ACC # 1
2	0712	ACC # 1
3	0805	ACC # 1
4	0805	ACC # 2
5	0810	ACC # 1
6	0810	ACC # 2
7	1003	ACC # 1,2&3

LEGEND:

- ADULT CARACARA #1 FLIGHT PATH
- ADULT CARACARA #2 FLIGHT PATH
- GROUND
- PERCH TREE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSA15 TO PAI 122915.DWG DATED DECEMBER 29, 2015.

DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

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RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
MARCH 8, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT C

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F_TRANSECT_C_AERIAL WITH CRESTED CARACARA OBSERVATIONS.DWG TAB: C (3-8-16) JUN 21, 2017 - 4:20PM PLOTTED BY: THONES

TRANSECT D

D-1 OBSERVATION STATION 1
0645-0900

D-2 OBSERVATION STATION 2
0945-1200

LEGEND:

ADULT CARACARA #1 FLIGHT PATH

OUT OF SIGHT

OBSERVED FLIGHT No.	TIME	ADULT CARACARAS
1	1100	ACC # 1

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. ERP SSAI5 TO PAI I22915.DWG DATED DECEMBER 29, 2015.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_CARACARA_NESTING_SEASON\EXHIBITS\CAD\APP F_TRANSECT D AERIAL WITH CRESTED CARACARA OBSERVATIONS.DWG TAB: D (4-5-16) JUN 21, 2017 - 4:21PM PLOTTED BY: THONES

DRAWN BY	F.L./T.S.
DATE	5/26/16
REVIEWED BY	D.C.
DATE	5/26/16
REVISED	H.H.
DATE	3/2/17

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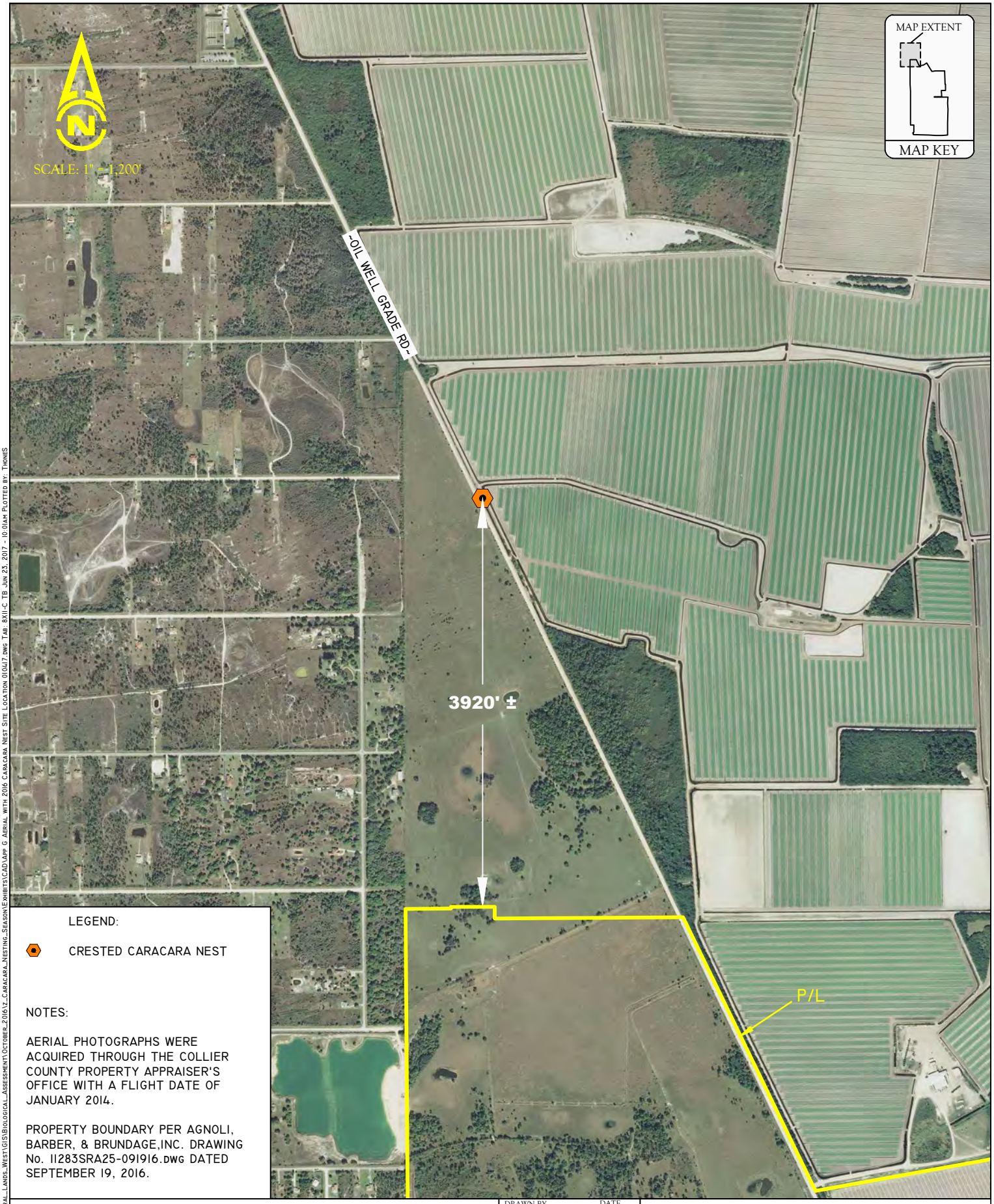
RURAL LANDS WEST
CRESTED CARACARA NESTING SEASON SURVEY OBSERVATIONS
APRIL 5, 2016

DRAWING No. 05CEM1481

SHEET No. TRANSECT D

APPENDIX G

AERIAL WITH 2016 CRESTED CARACARA NEST SITE LOCATION



LEGEND:

CRESTED CARACARA NEST

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

APPENDIX G. AERIAL WITH 2016 CRESTED CARACARA NEST SITE LOCATION
RURAL LANDS WEST

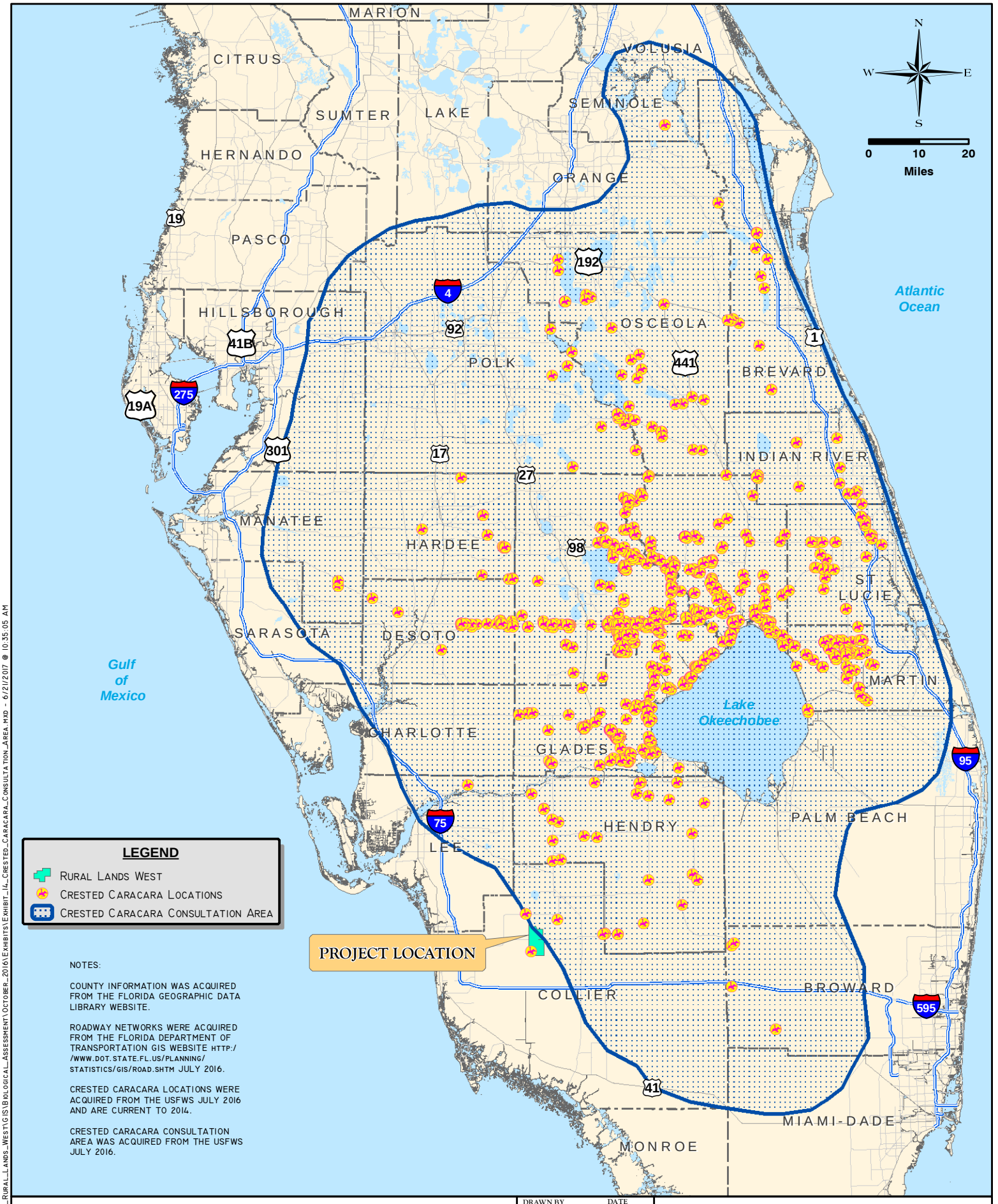
DRAWN BY	F.L./T.S.	DATE	7/11/16
REVIEWED BY	D.C.	DATE	7/11/16
REVISED	H.H.	DATE	3/6/17

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

J:\2005\05ce#18100_Rural_Lands_West\GIS\Biological_Assessment\October_2016\Z_Caracara_Nesting_Season\Exhibits\CAD\App G Aerial with 2016 Caracara Nest Site Location 010417.dwg Tab: 8x11-C TB Jun 23, 2017 - 10:01am Plotted by: Thones

EXHIBIT 14

CRESTED CARACARA CONSULTATION AREA AND NEST LOCATIONS



NOTES:

COUNTY INFORMATION WAS ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA DEPARTMENT OF TRANSPORTATION GIS WEBSITE HTTP://WWW.DOT.STATE.FL.US/PLANNING/STATISTICS/GIS/ROAD.SHTM JULY 2016.

CRESTED CARACARA LOCATIONS WERE ACQUIRED FROM THE USFWS JULY 2016 AND ARE CURRENT TO 2014.

CRESTED CARACARA CONSULTATION AREA WAS ACQUIRED FROM THE USFWS JULY 2016.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_14_CRESTED_CARACARA_CONSULTATION_AREA.MXD - 6/21/2017 @ 10:35:05 AM

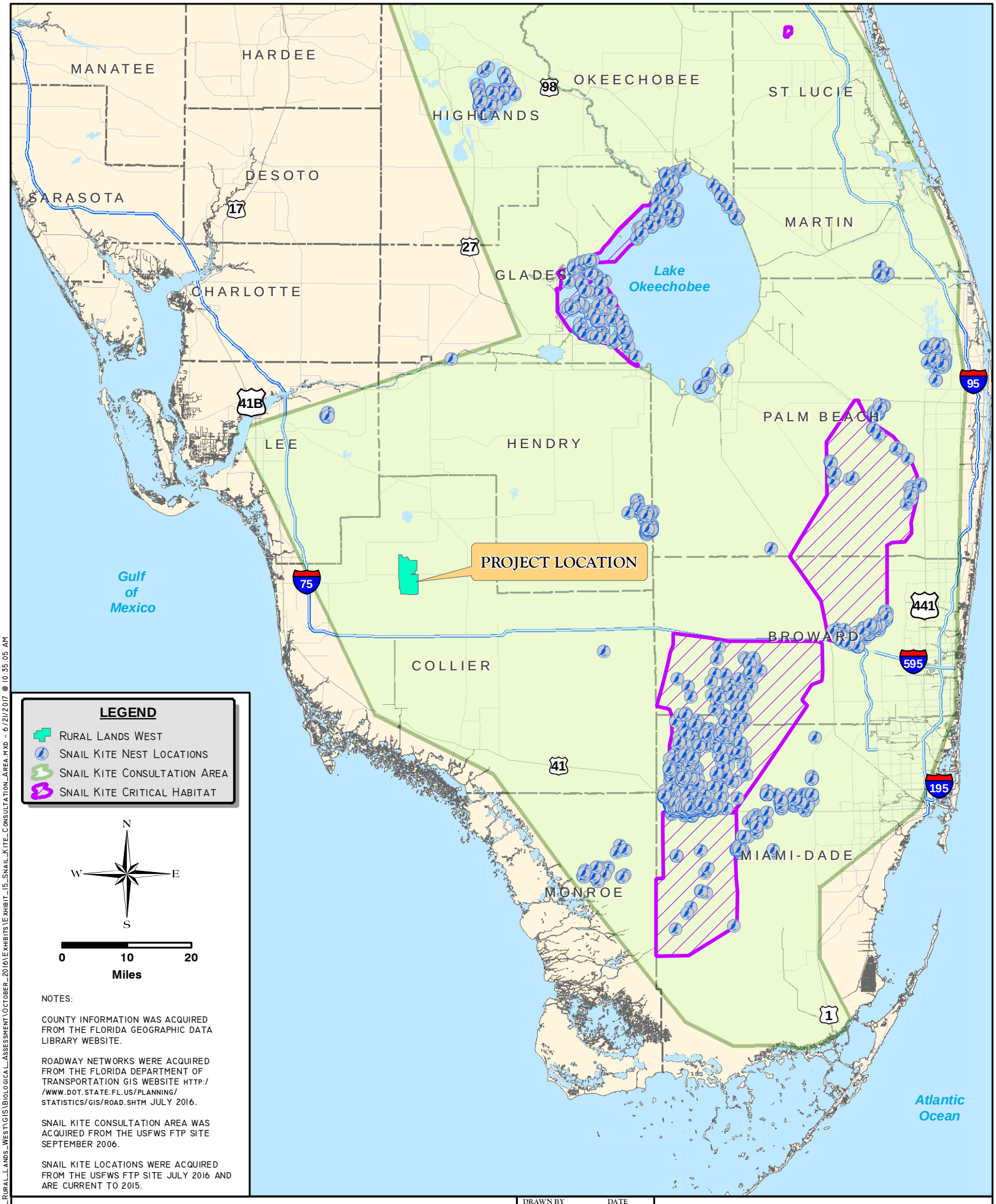
EXHIBIT 14. CRESTED CARACARA CONSULTATION AREA AND NEST LOCATIONS RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

EXHIBIT 15

EVERGLADE SNAIL KITE CONSULTATION AREA WITH CRITICAL HABITAT AREAS AND NEST LOCATIONS



NOTES:

COUNTY INFORMATION WAS ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA DEPARTMENT OF TRANSPORTATION GIS WEBSITE HTTP://WWW.DOT.STATE.FL.US/PLANNING/STATISTICS/GIS/ROAD.SHTM JULY 2016.

SNAIL KITE CONSULTATION AREA WAS ACQUIRED FROM THE USFWS FTP SITE SEPTEMBER 2006.

SNAIL KITE LOCATIONS WERE ACQUIRED FROM THE USFWS FTP SITE JULY 2016 AND ARE CURRENT TO 2015.

J:\2005\05CEHI48\100_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_15_SNAIL_KITE_CONSULTATION_AREA.MXD - 6/21/2017 @ 10:35:05 AM

EXHIBIT 15. EVERGLADES SNAIL KITE CONSULTATION AREA WITH CRITICAL HABITAT AREAS AND NEST LOCATIONS RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists

EXHIBIT 16

BIG CYPRESS STEWARDSHIP DISTRICT
RCW NESTING AND NON-NESTING SEASONS SURVEY REPORT

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING AND NON-NESTING SEASONS
FORAGING SURVEY REPORT

June 2009

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INTRODUCTION

The following report documents the red-cockaded woodpecker (*Picoides borealis*) nesting season foraging survey and the non-nesting season foraging survey for the Big Cypress Stewardship District (Project). The surveys were conducted according to the U.S. Fish and Wildlife Service (USFWS) guidelines in the Draft Red-Cockaded Woodpecker South Florida Survey Protocol (USFWS 2004).

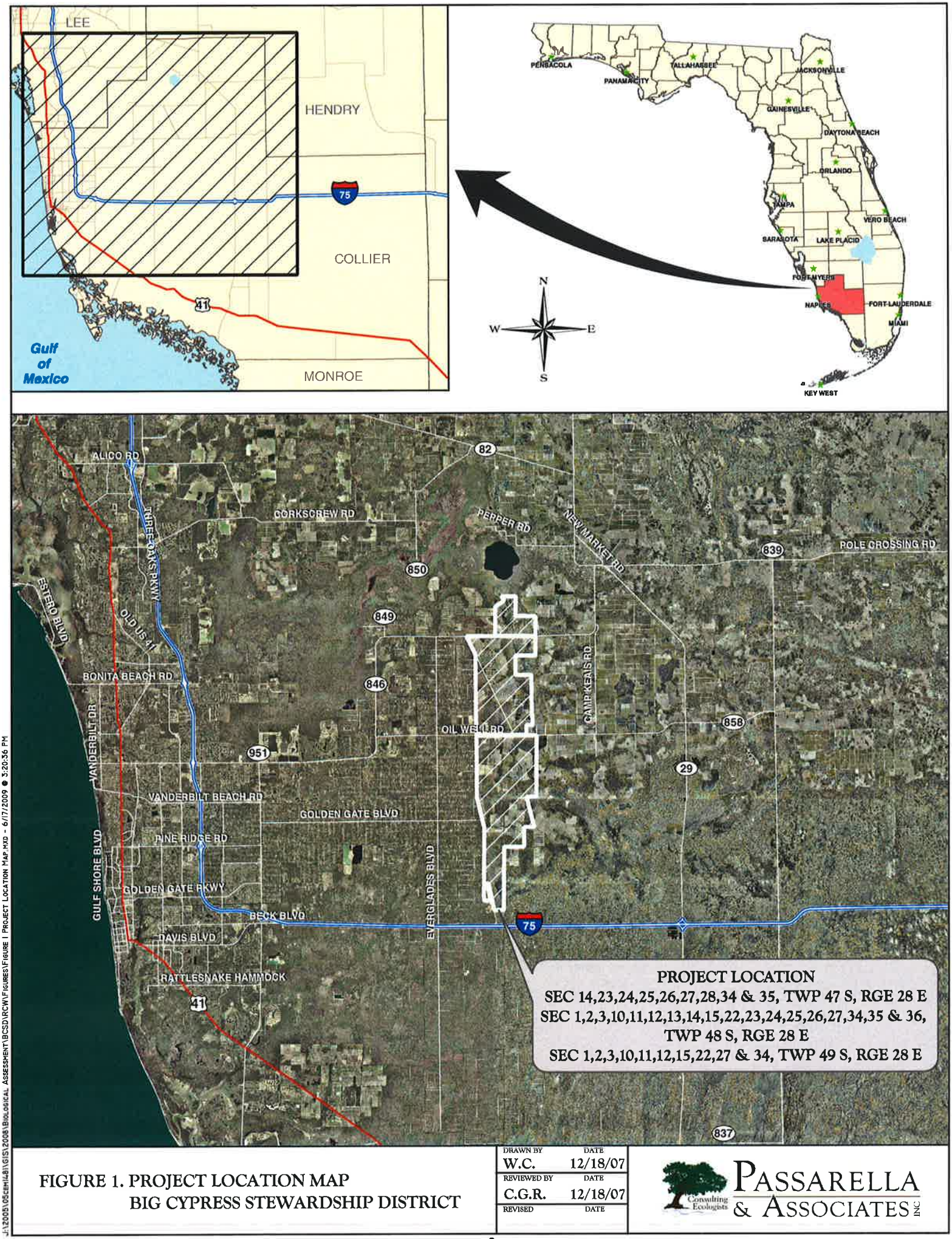
The Project site totals 22,210± acres and is located in Section 14, 23, 24, 25, 26, 27, 28, 34, and 35; Township 47 South; Range 28 East; Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; and Sections 1, 2, 3, 10, 11, 12, 15, 22, 27, and 34; Township 49 South; Range 28 East; Collier County (Figure 1). The Project site is located east of Golden Gate Estates in eastern Collier County. The site is bisected at the north end by Immokalee Road and through the middle by Oil Well Road. The Project's surrounding land uses are a mixture of row crops and pasture; undeveloped, forested land; and residential development. The Project site is bounded by Golden Gate Estates on the west and Camp Keais Strand on the east.

Vegetation mapping for the Project was conducted using 2004 Collier County rectified aerial photographs. Wetland lines were flagged in the field and survey located. Groundtruthing to map the vegetative communities was conducted between December 2006 and February 2007. The Florida Land Use, Cover and Forms Classification System (FLUCFCS) (Florida Department of Transportation 1999) was utilized to map the vegetation communities. Mapping was based on Level III FLUCFCS with Level IV used to denote hydrologic conditions and disturbance. "E" codes were used to show levels of exotic invasion (i.e., Brazilian pepper (*Schinus terebinthifolius*) and melaleuca (*Melaleuca quinquenervia*)). AutoCAD Map 3D 2009 software was used to determine the acreage of each mapping area, produce summaries, and generate the final FLUCFCS map (Figure 2). Due to rotation of vegetation crops, some fields may be used for pasture during interim periods of crop rotation. As such, the FLUCFCS map reflects conditions that were present on the Project site at the time fieldwork was conducted for the mapping effort, and areas mapped as pasture may be in row crops in subsequent years.

A total of 86 vegetative associations and land uses (i.e., FLUCFCS codes) were identified on the Project. Agriculture is the dominant land use type on the Project site. Cropland and Pastureland (FLUCFCS Codes 210) and Row Crops (FLUCFCS Code 214) account for 43.2 percent of the Project site. Slash pine (*Pinus elliottii*) habitats including Pine Flatwoods, Disturbed (FLUCFCS Code 4119); Other Pine, Disturbed (FLUCFCS Code 4199); Mixed Hardwood-Conifer, Disturbed (FLUCFCS Code 4349); Pine/Cypress/Cabbage Palm, Disturbed (FLUCFCS Code 6249); and Hydric Pine, Disturbed (FLUCFCS Code 6259) total 12.0 percent of the Project site.

BIOLOGY OF THE RED-COCKADED WOODPECKER

The red-cockaded woodpecker lives and breeds within old growth pine forests. The red-cockaded woodpecker forages preferentially in stands of live pines with trees that average a diameter of ten inches or greater (USFWS 1985). Dense pine stands or stands primarily



J:\2005\05CEH\GIS\2008\BIOLOGICAL ASSESSMENT\BCSD\RCW\FIGURES\FIGURE 1 PROJECT LOCATION MAP.MXD - 6/17/2009 @ 3:20:36 PM

FIGURE 1. PROJECT LOCATION MAP
BIG CYPRESS STEWARDSHIP DISTRICT

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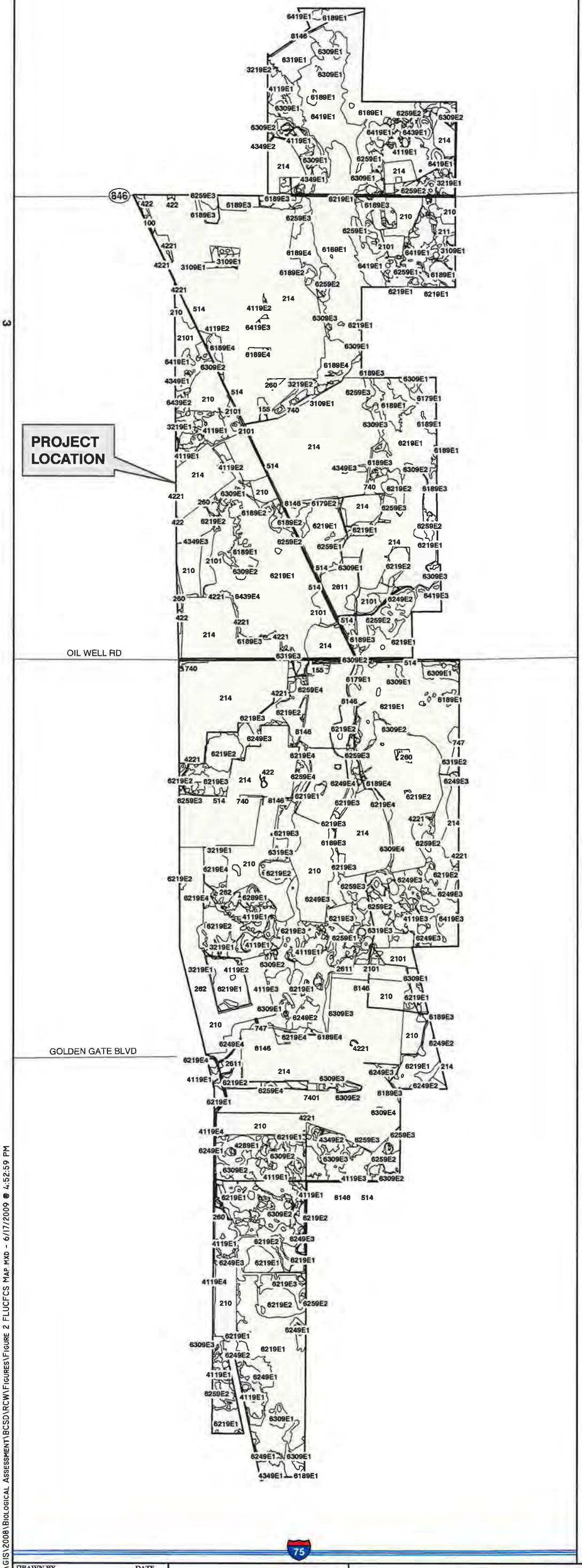
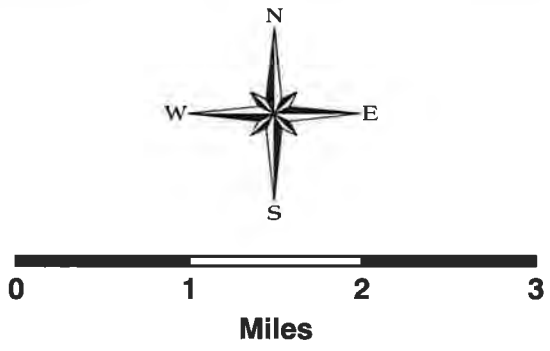


Legend:

BIG CYPRESS STEWARDSHIP DISTRICT

FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
100	RESIDENTIAL	12.51 Ac.±	0.1%
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	26.24 Ac.±	0.1%
210	CROPLAND AND PASTURELAND	1858.12 Ac.±	8.4%
2101	CROPLAND AND PASTURELAND, HYDRIC	360.75 Ac.±	1.6%
211	IMPROVED PASTURE	16.50 Ac.±	0.1%
214	ROW CROPS	7374.01 Ac.±	33.2%
260	RURAL OPEN LAND	53.53 Ac.±	0.2%
2611	FALLOW CROP LAND, HYDRIC	153.07 Ac.±	0.7%
262	LOW PASTURE, HYDRIC	30.18 Ac.±	0.1%
3109 E1	DRY PRAIRIE, DISTURBED (0-24% EXOTICS)	63.41 Ac.±	0.3%
3109 E3	DRY PRAIRIE, DISTURBED (50-75% EXOTICS)	5.32 Ac.±	0.0%
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	99.30 Ac.±	0.4%
3219 E2	PALMETTO PRAIRIE, DISTURBED (25-49% EXOTICS)	23.68 Ac.±	0.1%
3219 E3	PALMETTO PRAIRIE, DISTURBED (50-75% EXOTICS)	0.25 Ac.±	0.0%
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	779.95 Ac.±	3.5%
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	149.29 Ac.±	0.7%
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	140.60 Ac.±	0.6%
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	30.61 Ac.±	0.1%
4199 E1	OTHER PINE, DISTURBED (0-24% EXOTICS)	0.47 Ac.±	0.0%
4199 E2	OTHER PINE, DISTURBED (25-49% EXOTICS)	1.87 Ac.±	0.0%
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	8.99 Ac.±	0.0%
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.58 Ac.±	0.0%
422	BRAZILIAN PEPPER	49.87 Ac.±	0.2%
4221	BRAZILIAN PEPPER, HYDRIC	124.67 Ac.±	0.6%
424	MELALEUCA	0.10 Ac.±	0.0%
4241	MELALEUCA, HYDRIC	7.10 Ac.±	0.0%
4279 E1	LIVE OAK, DISTURBED (0-24% EXOTICS)	1.94 Ac.±	0.0%
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.13 Ac.±	0.0%
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	55.85 Ac.±	0.3%
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±	0.0%
4289 E3	CABBAGE PALM, DISTURBED (50-75% EXOTICS)	7.14 Ac.±	0.0%
4299 E2	WAX MYRTLE, DISTURBED (25-49% EXOTICS)	2.73 Ac.±	0.0%
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	99.91 Ac.±	0.4%
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	57.24 Ac.±	0.3%
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	17.99 Ac.±	0.1%
4349 E4	MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	1.29 Ac.±	0.0%
514	DITCH	96.10 Ac.±	0.4%
525	CATTLE POND	3.07 Ac.±	0.0%
530	RESERVOIR	1.47 Ac.±	0.0%
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	78.67 Ac.±	0.4%
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	12.04 Ac.±	0.1%
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	8.23 Ac.±	0.0%
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	1100.97 Ac.±	5.0%
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	69.27 Ac.±	0.3%
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	302.61 Ac.±	1.4%
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	262.42 Ac.±	1.2%
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	3279.79 Ac.±	14.8%
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	1053.87 Ac.±	4.7%
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	482.26 Ac.±	2.2%
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	145.83 Ac.±	0.7%
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	163.76 Ac.±	0.7%
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	174.55 Ac.±	0.8%
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	224.89 Ac.±	1.0%
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	55.23 Ac.±	0.2%
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	161.98 Ac.±	0.7%
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	297.65 Ac.±	1.3%
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	217.66 Ac.±	1.0%
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	77.34 Ac.±	0.3%
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	20.07 Ac.±	0.1%
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.90 Ac.±	0.0%
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	6.89 Ac.±	0.0%
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±	0.0%
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	323.92 Ac.±	1.5%
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	402.25 Ac.±	1.8%
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	271.93 Ac.±	1.2%
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	19.59 Ac.±	0.1%
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	112.95 Ac.±	0.5%
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	33.41 Ac.±	0.2%
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	98.44 Ac.±	0.4%
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	630.19 Ac.±	2.8%
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	22.00 Ac.±	0.1%
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	34.49 Ac.±	0.2%
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	15.63 Ac.±	0.1%
6439 E1	WET PRAIRIE, DISTURBED (0-24% EXOTICS)	60.16 Ac.±	0.3%
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	24.94 Ac.±	0.1%
6439 E3	WET PRAIRIE, DISTURBED (50-75% EXOTICS)	17.38 Ac.±	0.1%
6439 E4	WET PRAIRIE, DISTURBED (76-100% EXOTICS)	5.22 Ac.±	0.0%
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	3.44 Ac.±	0.0%
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.65 Ac.±	0.0%
740	DISTURBED LAND	66.15 Ac.±	0.3%
7401	DISTURBED LAND, HYDRIC	13.70 Ac.±	0.1%
742	BORROW AREA	1.62 Ac.±	0.0%
743	SPOIL	1.12 Ac.±	0.0%
747	BERM	23.33 Ac.±	0.1%
8146	UNPAVED ROAD	106.99 Ac.±	0.5%
832	ELECTRICAL POWER TRANSMISSION LINE	4.35 Ac.±	0.0%
	TOTAL	22209.76 Ac.±	100.0%



NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

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BIG CYPRESS STEWARDSHIP DISTRICT
FLUCFCS MAP

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J:\2005\05CEM1481\GIS\2008\BIOLOGICAL ASSESSMENT\BCSD\RCW\FIGURES\FIGURE 2 FLUCFCS MAP.MXD - 6/17/2009 @ 4:52:59 PM

composed of hardwoods are avoided. Red-cockaded woodpeckers feed primarily on insects including beetles, ants, grubs, and caterpillars. A smaller percent of the diet may consist of seasonal fruits, berries, and seeds.

The red-cockaded woodpecker roosts and nests in cavities excavated in live pine trees. Cavity trees are typically at least 60-80 years old and usually weakened by a fungal infection known as red-heart disease (McFarlane 1992, Ehrlich *et al.* 1988). Cavities are typically constructed on the main trunk just below the lowest branches. Numerous resin wells are maintained around the cavity entrance. The resin wells may help defend against ground dwelling predators and insect damage.

Red-cockaded woodpeckers live in family groups composed of a mated pair, offspring of the year, and unmated male helpers. The group's cavity trees are aggregated in clusters that typically occupy an area of about ten acres (USFWS 1985). Groups are highly territorial and may defend an area nearly 200 acres in size (McFarlane 1992, Ehrlich *et al.* 1988, USFWS 1985). Red-cockaded woodpeckers are cooperative breeders and one or more non-breeding males may assist the breeding pair in brooding, feeding, and territorial defense. Egg laying typically occurs during April, May, and June (USFWS 1985). Clutch size is typically two to five eggs (Ehrlich *et al.* 1988, USFWS 1985). Both sexes are involved in incubating and feeding. The time from egg laying to fledging is approximately 40 days (USFWS 1985).

SURVEY METHODOLOGY

The surveys were conducted according to the USFWS Draft Red-Cockaded Woodpecker South Florida Survey Protocol (USFWS 2004). The nesting season foraging survey was conducted for 14 days between May 24 and June 15, 2007. Suitable red-cockaded woodpecker foraging habitat on the Project site was identified, and six areas (Transects A – F) were designated for the nesting season foraging surveys. According to the South Florida Survey Protocol, the time-of-day requirements for foraging surveys are one hour prior to sunrise to four hours past sunrise or when local weather conditions are not favorable. Nesting season foraging surveys for the Project generally began around 6:30 a.m. (sunrise) and ended by 9:30 a.m. (three hours past sunrise).

The non-nesting season foraging survey was conducted for 14 days between October 15 and November 9, 2007. Suitable red-cockaded woodpecker foraging habitat on the Project site was identified, and six areas (Transects B – G) were designated for the non-nesting season foraging surveys. The October 15 through November 1 foraging surveys generally began at 7:30 a.m. (sunrise) and ended 10:30 a.m. (three hours past sunrise). Due to daylight savings time ending, the November 7 – 9 surveys were conducted from approximately 6:30 a.m. (sunrise) to 9:30 a.m. (three hours past sunrise).

The nesting season and non-nesting season foraging surveys were conducted by qualified ecologists traversing suitable habitat by foot. At regular intervals, the ecologist would stop, look, and listen for red-cockaded woodpecker activity. Transects were recorded on aerial photographs and wildlife observations were recorded. High quality compact disk (CD) recordings of red-cockaded woodpecker vocal calls were used. At the observation stations, red-cockaded

woodpecker vocalizations were broadcast at full volume for one minute in opposite directions using a hand-held Sony CD player. Visual observations were aided by binoculars. Relative weather conditions were also recorded for each survey period.

RESULTS

No red-cockaded woodpeckers were heard or observed during the May - June 2007 nesting season foraging surveys. Daily field observations for the nesting season surveys are attached as Appendix A. Maps showing the survey transects and observation station numbers are provided as Appendix B.

No red-cockaded woodpeckers were heard or observed during the October - November 2007 non-nesting season foraging surveys. Daily field observations for the non-nesting season surveys are attached as Appendix C. Maps showing the survey transects and observation station numbers are provided as Appendix D.

Cavity dwellers including downy woodpeckers (*Picoides pubescens*), great-crested flycatchers (*Myiarchus crinitus*), pileated woodpeckers (*Dryocopus pileatus*), northern flicker (*Colaptes auratus*), hairy woodpecker (*Picoides villosus*) and red-bellied woodpeckers (*Melanerpes carolinus*) were observed during the nesting season and non-nesting season foraging surveys. No cavities in live pine trees have been observed on the Project site.

Other listed species that were either heard and/or observed on the Project site during the survey included the Florida sandhill crane (*Grus canadensis*), white ibis (*Eudocimus albus*), tri-colored heron *(Egretta tricolor*), wood stork (*Mycteria americana*), little blue heron (*Egretta caerulea*), roseate spoonbill (*Platalea ajaja*), Florida black bear (*Ursus americanus*), Big Cypress fox squirrel (*Sciurus niger avicennia*), and Florida panther (*Puma concolor coryi*) sign.

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APPENDIX A

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY FIELD OBSERVATIONS

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 24, 2007
Survey Transect: A
Start time of survey: 0610 **Weather conditions:** Clear skies, calm winds, and temperatures in the high 60's.

End time of survey: 0915 **Weather conditions:** Clear skies, winds 0-10 mph east, and temperatures in the low to mid 70's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0610	Heard Northern cardinal, mourning dove, and red-shouldered hawk.
2	0630	Heard red-bellied woodpecker, white-eyed vireo, and red-shouldered hawk. Observed a deer.
3	0640	Heard mourning dove, cattle, red-shouldered hawk, deer snorting, and great-crested flycatcher. Observed swallow-tailed kite.
4	0700	Heard cattle, Carolina wren, red-shouldered hawk, white-eyed vireo, red-bellied woodpecker, and Northern cardinal.
5	0736	Heard cattle, mourning doves, Eastern meadowlarks in pasture, Northern cardinal, red-bellied woodpecker, and sandhill cranes in distance to the north.
6	0800	Heard mourning dove. Heard and observed Eastern towhee, red-bellied woodpecker, blue jay, and two red-shouldered hawks.
7	0820	Heard Eastern meadowlark. Heard and observed gray squirrel, red-bellied woodpecker, and Northern cardinal.
8	0840	Heard red-shouldered hawk, red-bellied woodpecker, Eastern towhee, and Northern cardinal. Heard and observed tree swallows.
9	0900	Observed turkey vulture soaring. Heard Eastern towhee and Northern cardinal.
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 24, 2007
Survey Transect: B
Start time of survey: 0640 **Weather conditions:** Clear skies, calm winds, and temperatures in the low 70's.

End time of survey: 0940 **Weather conditions:** Sunny skies, winds 3-10 mph, and temperatures in the low 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0640	Heard and observed pileated woodpecker and fish crows. Heard red-shouldered hawk, Carolina wren, and mourning doves.
2	0700	Observed mourning doves. Heard and observed pileated woodpecker, fish crows, boat-tailed grackles, and red-shouldered hawk.
3	0720	Heard red-shouldered hawk, Carolina wren, and sandhill cranes in distance to the south. Observed red-bellied woodpecker.
4	0735	Observed broad winged hawk, pileated woodpeckers, and mourning doves. Heard Cuban tree frogs and red-shouldered hawk.
5	0750	Heard white-eyed vireo. Heard and observed Northern mockingbird and red-bellied woodpecker. Observed four white-tailed deer.
6	0812	Observed red-shouldered hawk, tree swallows, and Northern cardinal. Heard red-bellied woodpeckers.
7	0830	Heard and observed red-bellied woodpeckers, Northern cardinal, Northern mockingbird, and pine warbler.
8	0848	Observed pileated woodpecker, common grackles, and Northern cardinal.
9	0900	Heard white-eyed vireo. Observed red-bellied woodpecker and tree swallows.
10	0915	Heard and observed gray squirrel, Northern cardinals, and Northern mockingbirds.
11	0930	Observed red-shouldered hawk, red-bellied woodpecker, mourning dove, and black vultures soaring overhead.
	0940	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 24, 2007
Survey Transect: C
Start time of survey: 0635 **Weather conditions:** Clear skies, calm winds, and temperatures in the high 60's.

End time of survey: 0930 **Weather conditions:** Clear skies, winds 0-5 mph south, and temperatures in the mid 70's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0635	Heard and observed great-crested flycatcher to the south, red-bellied woodpecker to the southeast, and Northern cardinal to the northwest. Heard mourning dove to the northwest, sandhill cranes to the south, red-shouldered hawk to the north, and Carolina wren to the east.
2	0654	Heard Carolina wren to the east, mourning dove to the southwest, Northern cardinal to the north, red-bellied woodpecker to the south, and blue jay to the southeast. Observed common ground dove to the south.
3	0712	Heard common ground dove and red-bellied woodpecker to the south, mourning dove to the west, Carolina wren to the northeast, Northern cardinal to the northwest, and white-eyed vireo and blue jay to the east.
4	0729	Heard red-bellied woodpecker to the northwest, white-eyed vireo to the south, Carolina wren to the southwest, pine warbler to the east, and mourning dove to the west. Heard and observed three swallow tail kites circling to the northwest.
5	0747	Heard and observed three downy woodpeckers to the north, great-crested flycatcher and swallow tail kite perched in pine to the northwest and 11 swallow tail kites circling to the south. Heard Carolina wren and pine warbler to the east, and Northern cardinal and red-bellied woodpecker to the south.
6	0805	Heard and observed red-bellied woodpecker to the south, and swallow tail kite circling then perching to the south. Heard Carolina wren to the east, mourning dove to the northeast, and great-crested flycatcher to the north.
7	0821	Heard and observed five swallow tail kites circling to the north and south, and Northern cardinal to the northwest. Heard red-bellied woodpecker and downy woodpecker to the west, and blue jay to the southeast.

Station	Time	Field Notes
8	0836	Heard and observed four swallow tail kites circling to the north and west. Observed snag with large-opening cavity to the southwest. Heard Northern cardinal to the west, red-bellied woodpecker and Carolina wren to the east, and downy woodpecker to the northwest.
9	0854	Heard and observed red-bellied woodpecker and Carolina wren to the east, and two downy woodpeckers to the south. Heard common ground dove to the east, mourning dove to the northeast, and Northern cardinal to the north.
10	0908	Heard and observed red-bellied woodpecker in cavity in snag to the south, Northern cardinal to the southwest, and swallow tail kite circling to the south. Heard mourning dove to the southwest, and Carolina wren to the north.
11	0922	Heard and observed red-bellied woodpecker to the north, and swallow tail kite circling to the southwest. Heard blue-gray gnatcatcher and Carolina wren to the north, and mourning dove to the northeast.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 24, 2007
Survey Transect: D
Start time of survey: 0720 **Weather conditions:** Clear skies, wind 0-5 mph, and temperatures in the low 70's.

End time of survey: 0930 **Weather conditions:** Clear skies, winds 5-10 mph, and temperatures in the high 70's and humid.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0720	Heard and observed mourning dove, blue jay, and red-bellied woodpecker.
2	0730	Heard and observed mourning dove. Heard red-bellied woodpecker, Northern cardinal, and blue-gray gnatcatcher.
3	0742	Heard and observed red-bellied woodpecker. Heard Northern cardinal and blue-gray gnatcatcher.
4	0755	Heard and observed red-winged blackbird. Heard red-bellied woodpecker. Observed black vulture.
5	0810	Heard and observed swallow tail kite, mourning dove, and red-bellied woodpecker. Heard Northern cardinal and white-eyed vireo.
6	0823	Observed swallow tail kite and black vulture. Heard and observed red-bellied woodpecker. Heard Northern cardinal.
7	0836	Observed black vulture. Heard mourning dove, Northern cardinal, and red-bellied woodpecker.
8	0850	Heard Northern cardinal and red-bellied woodpecker. Observed black vulture.
9	0900	Heard and observed red-bellied woodpecker. Observed black vulture, swallow tail kite, and red-winged blackbird.
10	0915	Observed swallow tail kite, mourning dove, and black vulture. Heard mourning dove and red-bellied woodpecker.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 24, 2007
Survey Transect: E
Start time of survey: 0635 **Weather conditions:** Clear skies, no wind, and temperature in the low 70's.

End time of survey: 0935 **Weather conditions:** Clear skies, winds 5-10 mph east, and temperature in the low 80's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0635	Heard and observed downy woodpecker fly east and forage on live pine, and great-crested flycatcher. Heard red-bellied woodpecker, boat-tailed grackle, pileated woodpecker, Northern cardinal, mourning dove, and red-shouldered hawk to the east.
2	0657	Heard pileated woodpecker and Northern cardinal. Heard and observed mourning dove and red-bellied woodpecker fly southeast and foraging on pine snag.
3	0716	Heard and observed downy woodpecker foraging on live pine. Observed pileated woodpecker fly west. Heard Northern cardinal, mourning dove, great-crested flycatcher, and red-bellied woodpecker.
4	0742	Heard white-eyed vireo, blue jay, Northern cardinal, and downy woodpecker. Heard and observed red-bellied woodpecker fly east and forage on pine snag.
5	0812	Heard great-crested flycatcher, Northern cardinal, and mourning dove. Heard and observed pileated woodpecker fly west.
6	0838	Heard downy woodpecker to the east and red-shouldered hawk. Observed black vultures.
7	0907	Heard pileated woodpecker to the west, red-bellied woodpecker to the north, and red-shouldered hawk. Observed ground dove.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 24, 2007
Survey Transect: F
Start time of survey: 0630 **Weather conditions:** Clear skies, low fog, calm winds, and temperatures in the mid 60's and humid.

End time of survey: 0930 **Weather conditions:** Clear skies, calm winds, and temperatures in the mid 70's.

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Observed Carolina wren and red-bellied woodpecker.
2	0650	Observed Northern cardinal.
3	0715	Observed Carolina wren. Heard great-crested flycatcher.
4	0735	Heard white-eyed vireo.
5	0800	Observed red-shouldered hawk. Heard downy woodpecker.
6	0820	Heard purple martin. Observed white-eyed vireo and turkey.
7	0845	Heard Carolina wren, blue jay, and purple martin.
8	0905	Observed red-shouldered hawk and common yellow throat warbler.
9	0930	Observed Northern cardinal. Heard Carolina wren and red-bellied woodpecker.
	0930	End of survey. No red-cockaded woodpecker heard or observed during the survey.
		Panther tracks and panther scrapes observed throughout survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 25, 2007
Survey Transect: A
Start time of survey: 0600 **Weather conditions:** Clear skies, calm winds, and temperature in the mid to upper 60's.

End time of survey: 0900 **Weather conditions:** Clear skies, winds 5-15 mph and temperature in the mid to upper 70's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0600	Heard chuck-wills-widow, rooster, mourning dove, Eastern meadowlark, and Northern bobwhite.
2	0620	Heard Northern mockingbird, red-bellied woodpecker, and Carolina wren. Observed common nighthawk.
3	0637	Heard rooster, Northern cardinal, sandhill cranes to the north, and mourning doves. Heard and observed Eastern towhee, and red-bellied woodpecker. Observed common nighthawk.
4	0655	Heard Eastern towhee, Eastern meadowlarks, and mourning doves. Heard and observed common grackles, Northern cardinal, and blue jays.
5	0716	Observed Eastern cottontail and boat-tailed grackles. Heard ground doves and Carolina wren.
6	0733	Heard and observed Northern cardinal. Heard distant sandhill cranes, downy woodpecker, red-bellied woodpecker, and blue jay.
7	0750	Heard Eastern meadowlark, cattle, Northern cardinals, red-bellied woodpecker, Carolina wren, Northern mockingbird, and blue jay.
8	0808	Heard red-bellied woodpecker, red-shouldered hawk, and Northern mockingbird.
9	0824	Heard and observed Northern cardinal and red-bellied woodpecker.
10	0840	Heard Eastern meadowlarks.
	0900	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 25, 2007
Survey Transect: B
Start time of survey: 0635 **Weather conditions:** Clear skies, winds 0-5 mph, and temperature in the mid 60's.

End time of survey: 0925 **Weather conditions:** Partly cloudy skies, winds 10-15 mph, and temperature in the low 80's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0635	Heard pileated woodpecker, red-shouldered hawk, and Northern cardinal. Observed swallow tail kite circling 20 feet overhead.
2	0654	Observed Northern cardinal. Heard blue jay, common ground dove, and mourning dove.
3	0706	Observed common ground doves and Eastern towhee. Heard red-bellied woodpecker and common yellow-throat.
4	0721	Observed red-bellied woodpecker and swallow tail kite flying northeast. Heard Northern cardinal and red-shouldered hawk.
5	0736	Observed downy woodpecker and pileated woodpecker. Heard Eastern towhee.
6	0751	Heard red-bellied woodpecker and Northern cardinal.*
7	0809	Observed Carolina wrens and red-bellied woodpecker. Heard red-shouldered hawk and Northern cardinal.
8	0828	Heard red-bellied woodpecker, red-shouldered hawk, and Northern cardinal. Observed downy woodpecker and blue-gray gnatcatcher.
9	0846	Heard red-shouldered hawk and Northern cardinal. Observed tree swallow.
10	0912	Heard mourning doves and Northern cardinal.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.
		* Winds increasing.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 25, 2007
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Clear skies, calm winds, and temperature in the mid 60's.

End time of survey: 0925 **Weather conditions:** Partly cloudy skies, winds 8-10 mph, and temperature in the high 70's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0630	Heard white-eyed vireos, whip-poor-will, and pileated woodpecker. Observed five white ibis flying west.
2	0646	Heard white-eyed vireo. Observed great crested flycatcher and mourning doves.
3	0705	Heard and observed red-bellied woodpecker and red-shouldered hawk. Heard Eastern towhee.
4	0722	Heard and observed boat-tailed grackles, red-bellied woodpecker, and mourning doves.
5	0739	Observed swallow tail kites flying low among pines, and red-bellied woodpecker. Heard white-eyed vireo and sandhill cranes in the distance to the west.
6	0755	Heard barred owl and Eastern towhee. Observed red-bellied woodpeckers.
7	0820	Observed pine warblers, blue-gray gnatcatcher, and downy woodpecker. Heard red-bellied woodpecker and Northern mockingbird.
8	0840	Observed red-shouldered hawk, fish crow, and red-bellied woodpecker. Heard and observed downy woodpeckers.
9	0856	Heard fish crow. Observed gray squirrel, red-bellied woodpecker, ground doves, and turkey vultures soaring.
10	0910	Observed blue-gray gnatcatcher and three white-tailed deer. Heard and observed Northern cardinal, red-bellied woodpecker, red-shouldered hawk, and pine warbler.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 25, 2007
Survey Transect: D
Start time of survey: 0715 **Weather conditions:** Sunny skies, calm winds, and temperature in the high 60's.

End time of survey: 0931 **Weather conditions:** Partly cloudy skies, winds 5-10 mph east, and temperature in the low 80's.

Observer: David Anthony

Station	Time	Field Notes
1	0715	Heard pileated woodpecker to the northeast, red-bellied woodpecker to the east, and Northern cardinal to the north.
2	0735	Heard and observed blue-gray gnatcatcher in cabbage palm to the north. Heard pileated woodpecker to the southeast, pine warbler to the east, and red-shouldered hawk to the south.
3	0755	Heard mourning dove and Northern cardinal to the southeast, blue-gray gnatcatcher to the northwest and northeast, and red-bellied woodpecker to the north and east.
4	0819	Heard pine warbler and blue-gray gnatcatcher to the northeast. Heard and observed red-bellied woodpecker in pine tree to the west and red-shouldered hawk flying west from pine tree.
5	0836	Heard red-bellied woodpecker to the west and Northern cardinal to the east.
6	0850	Heard and observed pileated woodpecker flying from slash pine to the southeast and red-bellied woodpecker flying north. Heard pine warbler to the south, Northern cardinal to the southeast, and blue-gray gnatcatcher to the west.
7	0908	Observed red-bellied woodpecker flying to the north. Heard mourning dove to the northeast.
8	0926	Heard mourning dove to the north and pine warbler to the southeast.
	0931	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 25, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Clear skies, no wind, and temperature in the mid 60's.

End time of survey: 0930 **Weather conditions:** Mostly sunny skies, winds 0-5 mph east-northeast, and temperature in the high 70's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0630	Heard and observed mourning dove and pileated woodpecker fly west and forage on pine snag. Heard white-eyed vireo and Northern cardinal.
2	0703	Heard mourning dove, blue jay, white-eyed vireo, downy woodpecker and ground dove. Heard and observed red-bellied woodpecker foraging on pine snags and pileated woodpecker foraging on live pine. Observed European starling.
3	0731	Heard downy woodpecker, red-shouldered hawk, Carolina wren, and red-bellied woodpecker. Heard and observed great-crested flycatcher and blue-gray gnatcatcher.
4	0752	Heard Carolina wren, pileated woodpecker to the south, and white-eyed vireo. Heard and observed red-bellied woodpecker foraging on pine snag to the east, Northern cardinal, and blue-gray gnatcatcher. Observed striped skunk.
5	0821	Heard blue-gray gnatcatcher and Northern cardinal. Observed red-shouldered hawk and Florida panther tracks. Heard and observed red-bellied woodpecker foraging on pine snags.
6	0846	Heard red-bellied woodpecker and Northern cardinal. Heard and observed red-shouldered hawk fly west. Observed turkey vultures.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 25, 2007
Survey Transect: F
Start time of survey: 0630 **Weather conditions:** Clear skies, calm winds, and temperature in the mid 60's and humid.

End time of survey: 0930 **Weather conditions:** Clear skies, calm winds, and temperature in the low 80's and humid.

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard Carolina wren and squirrel tree frog.
2	0650	Observed Northern cardinal and swallow tail kite.
3	0715	Heard mourning dove, and chuck-wills-widow.
4	0735	Observed white-eyed vireo, Carolina wren, and turkey.
5	0755	Observed turkey, black vultures, and Northern cardinal.
6	0820	Heard mourning dove, white-eyed vireo, and American crow.
7	0840	Observed ground dove, red-bellied woodpecker, and Northern flicker.
8	0905	Observed white-eyed vireo, brown thrasher, and turkey vulture.
9	0930	Heard downy woodpecker and blue jay. Observed Northern cardinal, mourning dove, and red-shouldered hawk.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2007
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Hazy skies, calm winds, and temperature in the mid 60's.

End time of survey: 0920 **Weather conditions:** Partly cloudy skies, slight breeze, and temperature in the low 80's.

Observer: Doug Holt

Station	Time	Field Notes
1	0630	Heard sandhill crane, Northern flicker, Carolina wren, and Eastern meadowlark.
2	0645	Heard common grackle, male Northern bobwhite, red-shouldered hawk, and Eastern towhee.
3	0700	Heard great-crested flycatcher, common grackle, pileated woodpecker, and male Northern bobwhite.
4	0715	Heard Northern cardinal, common grackle, Northern mockingbird, mourning dove, and Carolina wren.
5	0730	Heard common nighthawk, Eastern towhee, loggerhead shrike, Carolina wren, and red-bellied woodpecker.
6	0745	Heard Northern flicker, Eastern meadowlark, and common nighthawk. Observed unknown cotton rat foraging at base of saw palmetto bushes.
7	0800	Heard female Northern bobwhite, red-shouldered hawk, and pileated woodpecker. Observed common nighthawks flying over field to northeast.
8	0815	Heard Eastern towhee, red-bellied woodpecker, Carolina wren, and great-crested flycatcher.
9	0845	Heard red-shouldered hawk and pileated woodpecker.
10	0900	Heard Eastern towhee, Eastern meadowlark, Northern cardinal, and Northern mockingbird.
11	0915	Heard red-shouldered hawk and sandhill crane. Observed black vultures soaring overhead.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2007
Survey Transect: B
Start time of survey: 0620 **Weather conditions:** Clear skies, wind 0-5 mph east, and temperature in the high 60's.

End time of survey: 0930 **Weather conditions:** Clear skies, wind 10-15 mph east, and temperature in the low 80's.

Observer: Matthew Brosious

Station	Time	Field Notes
1	0620	Heard red-bellied woodpecker and mourning dove to the east, and great-crested flycatcher and common nighthawk to the north.
2	0635	Heard and observed great-crested flycatcher to the east. Heard pileated woodpecker to the southwest and Northern cardinal to the west.
3	0655	Heard common nighthawk and red-bellied woodpecker to the northwest. Observed Northern cardinal to the north and swallow-tail kite fly west.
4	0710	Heard mourning dove to the north, pileated woodpecker to the northwest, and Eastern towhee to the south.
5	0725	Heard red-bellied woodpecker to the south. Observed Northern cardinal to the northwest.
6	0750	Heard mourning dove to the south, turkey to the west, pileated woodpecker to the north, and downy woodpecker to the northeast. Observed red-shouldered hawk perched on pine snag to the west.
7	0810	Heard and observed downy woodpecker to the northwest. Observed mourning dove to the north. Heard Northern cardinal to the north and red-bellied woodpecker to the west.
8	0830	Heard Carolina wren to the east, red-shouldered hawk to the southwest, Northern cardinal to the northwest, and mourning dove to the northeast.
9	0850	Heard Northern cardinal to the east and Carolina wren to the southeast. Observed black vultures to the east.
10	0910	Wind increasing to 10-15 mph. Observed swallow-tail kite fly to the southwest. Heard Northern cardinal to the west.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2007
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Clear skies, calm winds, and temperature in the mid 60's.

End time of survey: 0930 **Weather conditions:** Partly cloudy skies, winds 0-5 mph north, and temperature in the mid 70's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0630	Heard and observed downy woodpecker to the north, blue jay to the southwest, great-crested flycatcher to the northwest, and red-bellied woodpecker to the northeast. Heard mourning dove and pileated woodpecker to the northeast and Northern cardinal to the east.
2	0653	Heard and observed Carolina wren to the north. Heard mourning dove to the west, great-crested flycatcher to the north, and downy woodpecker to the northwest. Observed swallow tail kite to the west.
3	0713	Observed common ground dove to the north. Heard mourning dove to the south, Carolina wren to the northeast, red-bellied woodpecker to the north, and great-crested flycatcher, blue jay, and Northern cardinal to the east.
4	0728	Observed turkey to the west. Heard and observed swallow tail kite circling to the south. Heard mourning dove to the southeast, and Northern cardinal to the southwest.
5	0742	Heard and observed five swallow tail kites perched in pine to the south and red-bellied woodpecker to the south. Heard mourning dove to the south and Northern cardinal to the southeast.
6	0759	Heard and observed five swallow tail kites circling to the north, red-bellied woodpecker to the northeast, and Northern cardinal to the south. Heard red-shouldered hawk to the south.
7	0816	Heard mourning dove to the northeast, red-shouldered hawk to the southeast, red-bellied woodpecker and great-crested flycatcher to the northwest, and Northern cardinal to the southwest. Heard and observed swallow tail kites circling to the south.

Station	Time	Field Notes
8	0832	Heard and observed two pileated woodpeckers to the northeast and red-bellied woodpecker to the southeast. Heard mourning dove to the south, red-shouldered hawk to the northeast, and Northern cardinal to the northwest.
9	0857	Heard and observed red-shouldered hawk to the west and swallow tail kite circling overhead. Observed black vultures circling to the southwest, and mourning dove fly overhead to the south. Heard red-bellied woodpecker to the north and Carolina wren to the west.
10	0913	Heard red-bellied woodpecker and mourning dove to the west, Northern cardinal and blue jay to the north, and great-crested flycatcher to the northwest.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2007
Survey Transect: D
Start time of survey: 0633 **Weather conditions:** Partly cloudy skies, calm winds, and temperature in the high 60's.

End time of survey: 0933 **Weather conditions:** Partly cloudy skies, calm winds, and temperature in the high 70's.

Observer: David Anthony

Station	Time	Field Notes
1	0633	Heard pileated woodpecker to the northeast, mourning dove to the northwest, and red-shouldered hawk to the southeast. Heard and observed pine warbler on cabbage palm to the east and downy woodpecker on pine tree to the northeast.
2	0648	Heard pileated woodpecker to the east, red-shouldered hawk to the southeast, and mourning dove to the west.
3	0710	Heard black whiskered vireo to the north and red-bellied woodpecker to the west. Observed red-shouldered hawk flying north.
4	0725	Heard red-bellied woodpecker to the west, red-shouldered hawk to the south, and mourning dove to the southeast.
5	0739	Heard pine warbler to the west and northeast, red-shouldered hawk to the east, and Northern cardinal to the south.
6	0757	Heard mourning dove to the west and Northern cardinal to the south.
7	0815	Heard and observed red-bellied woodpecker flying east. Heard pine warbler to the east.
8	0828	Heard Northern cardinal to the east.
9	0846	Heard red-shouldered hawk to the southwest.
10	0901	Heard red-bellied woodpecker to the south.
11	0920	Heard mourning dove to the west.
	0933	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Clear skies, no wind, and temperature in the low to mid 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy skies, no wind, and temperature in the low 80's.

Observer: Mike Myers

Station	Time	Field Notes
1	0630	Heard mourning dove to the north and common yellow throat to the south. Observed red-shouldered hawk flying to the east.
2	0650	Heard mourning dove and blue jay to the south. Observed two barred owls fly from pines to the north, red-bellied woodpecker foraging on snag to the north, and two great-crested flycatchers perched in pines to the north.
3	0710	Heard red-bellied woodpecker and mourning dove to the north, and pine warbler to the east.
4	0730	Heard and observed Carolina wren to the north. Observed gray squirrel foraging in pine to the west. Heard Northern cardinal, pileated woodpecker, and blue jay to the south.
5	0745	Heard mourning dove to the southeast and Northern cardinal to the west. Heard and observed two red-bellied woodpeckers to the north.
6	0800	Heard red-bellied woodpecker to the northwest, mourning dove to the north, and Carolina wren to the west.
7	0815	Heard mourning dove to the west and red-bellied woodpecker to the south. Observed brown thrasher fly to the north.
8	0830	Observed common ground doves and seven wild turkeys foraging in open 740 area, and turkey vulture flying north. Heard Northern cardinal and two Carolina wren to the east, and red-bellied woodpecker to the west.
9	0845	Heard downy woodpecker to the north. Observed turkey vulture soaring to the west.

Station	Time	Field Notes
10	0900	Heard Northern cardinal and red-shouldered hawk to the north. Observed four turkey vultures soaring to the west and swallow tail kite fly to the east.
11	0915	Observed bobwhite quail running into pepper to the north and swallow tail kite and black vulture flying west. Heard Carolina wren to the south and west and red-bellied woodpecker to the south and southeast.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2007
Survey Transect: F
Start time of survey: 0630 **Weather conditions:** Clear skies, no wind, and temperature in the high 60's.

End time of survey: 0930 **Weather conditions:** Partly cloudy skies, wind 0-5 mph east, and temperature in the high 70's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0630	Heard blue-gray gnatcatcher, pileated woodpecker, and Northern cardinal.
2	0650	Heard red-shouldered hawk and downy woodpecker. Heard and observed blue-gray gnatcatcher and Northern cardinal. Observed swallow-tail kite flying north.
3	0712	Heard pileated woodpecker to the east. Heard and observed Carolina wren, Northern cardinal, blue-gray gnatcatcher, great-crested flycatcher, and downy woodpecker foraging on sabal palm.
4	0730	Heard and observed red-bellied woodpecker working on cavity on pine snag and downy woodpecker fly north. Heard red-shouldered haw, Northern cardinal, pileated woodpecker, and great-crested flycatcher.
5	0755	Heard and observed red-bellied woodpecker foraging on cypress, blue jays, and mourning dove. Heard Northern cardinal and Carolina wren.
6	0823	Heard and observed red-bellied woodpecker and downy woodpecker foraging on live pines, blue jay, and Northern cardinal.
7	0851	Heard and observed blue jay, great-crested flycatcher, and pileated woodpecker fly east. Heard Northern cardinal, red-bellied woodpecker, and mourning dove.
8	0921	Heard and observed downy woodpecker fly south, Carolina wren, and pileated woodpecker on live pine, then fly west. Heard blue-gray gnatcatcher and Northern cardinal.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2007
Survey Transect: A
Start time of survey: 0605 **Weather conditions:** Partly cloudy skies, calm winds, and temperature in the low 70's.

End time of survey: 0905 **Weather conditions:** Partly cloudy skies, winds 5-15 mph east, and temperature in the mid to upper 70's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0605	Heard Eastern meadowlarks, mourning dove, and cattle.
2	0620	Heard rooster, downy woodpecker, red-bellied woodpecker, mourning dove, sandhill cranes, cattle, and Eastern towhee. Heard and observed common nighthawks.
3	0639	Heard downy woodpecker, red-bellied woodpecker, mourning doves, cattle, common grackles, blue jays, Northern cardinal, and sandhill cranes in distance to the south. Observed Carolina wren and black vulture.
4	0702	Heard mourning dove, Northern cardinal, Eastern towhee, common grackle, and red-bellied woodpecker. Heard and observed common nighthawk, pileated woodpecker, and Carolina wren. Observed several black vultures perched in pine.
5	0722	Heard and observed mourning doves. Observed Eastern towhee. Heard red-bellied woodpecker and pine warbler.
6	0744	Heard Northern cardinal, downy woodpecker, cattle, red-bellied woodpecker, pine warbler, and common grackles.
7	0806	Heard great-crested flycatcher and red-bellied woodpecker. Heard and observed Northern cardinal and gray squirrel. Observed several black vultures perched in pine.
8	0826	Heard red-bellied woodpecker, Northern cardinal, and downy woodpecker.
9	0845	Heard and observed red-bellied woodpeckers, Eastern meadowlark, Northern mockingbird, and Northern bobwhite.
	0905	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2007
Survey Transect: B
Start time of survey: 0615 **Weather conditions:** Clear skies, no wind, and temperature in the high 60's.

End time of survey: 0915 **Weather conditions:** Partly cloudy skies, wind 10-15 mph east, temperature in the low 80's.

Observer: Matthew Brosious

Station	Time	Field Notes
1	0615	Heard Northern cardinal to the south and Carolina wren to the North.
2	0630	Heard mourning dove and blue-gray gnatcatcher to the north, and red-bellied woodpecker to the northwest. Heard and observed Northern mockingbird to the south.
3	0645	Heard Carolina wren to the east, red-bellied woodpecker to the northwest, and downy woodpecker to the southwest. Observed great-crested flycatcher to the northwest.
4	0705	Heard and observed great-crested flycatcher to the northwest and downy woodpecker on pine tree to the west.
5	0720	Heard blue-gray gnatcatcher and Northern cardinal to the west, mourning dove to the east, and Carolina wren to the north. Heard and observed common nighthawk flying to the west.
6	0745	Heard red-shouldered hawk and common ground dove to the west. Winds increasing to 10-15 mph east.
7	0810	Heard common ground dove to the west and great-crested flycatcher to the northeast.
8	0835	Heard Northern cardinal to the east and red-bellied woodpecker to the southeast.
9	0855	Heard and observed red-bellied woodpecker fly to the east. Observed swallow-tail kite flying to the northwest.
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2007
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the mid 60's.

End time of survey: 0925 **Weather conditions:** Partly cloudy, breezy, and temperature in the mid 70's.

Observer: Doug Holt

Station	Time	Field Notes
1	0630	Heard common grackle, Northern cardinal, pileated woodpecker, and Northern flicker.
2	0650	Heard great-crested flycatcher, mourning dove, and red-shouldered hawk. Observed boat-tailed grackle flying overhead.
3	0710	Heard Northern cardinal, Eastern towhee, mourning dove, and red-shouldered hawk.
4	0730	Heard blue-gray gnatcatcher, red-bellied woodpecker, Northern mockingbird, and great-crested flycatcher.
5	0755	Heard Eastern meadowlark, sandhill crane, Northern cardinal, male Northern bobwhite, common grackle, and mourning dove.
6	0810	Heard Northern cardinal and red-shouldered hawk.
7	0830	Heard mourning dove, Northern mockingbird, great-crested flycatcher, and Carolina wren.
8	0850	Heard blue-gray gnatcatcher, red-shouldered hawk, Northern cardinal, mourning dove, pileated woodpecker, and Northern flicker.
9	0915	Heard Northern cardinal, blue-gray gnatcatcher, red-shouldered hawk, pileated woodpecker, red-bellied woodpecker, and Northern mockingbird.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2007
Survey Transect: D
Start time of survey: 0630 **Weather conditions:** Partly cloudy skies, no wind, and temperature in the low 70's.

End time of survey: 0920 **Weather conditions:** Partly cloudy skies, wind 5-10 mph, and temperature in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0630	Heard and observed swallow-tail kite and red-shouldered hawk. Heard mourning dove, red-bellied woodpecker, and Northern cardinal.
2	0642	Heard and observed Northern cardinal. Heard red-bellied woodpecker and red-shouldered hawk.
3	0658	Observed swallow-tail kite. Heard mourning dove, Northern cardinal, and red-bellied woodpecker.
4	0712	Heard Northern cardinal, red-bellied woodpecker, great-crested flycatcher, mourning dove, and downy woodpecker.
5	0728	Heard and observed red-bellied woodpecker. Heard mourning dove and Northern cardinal.
6	0742	Heard mourning dove, red-shouldered hawk, red-bellied woodpecker, and white-eyed vireo.
7	0755	Heard Northern cardinal, red-bellied woodpecker, and great-crested flycatcher.
8	0810	Heard and observed downy woodpecker and red-bellied woodpecker.
9	0825	Heard and observed red-shouldered hawk. Heard Northern cardinal.
10	0838	Observed black vulture. Heard Northern cardinal and mourning dove.
11	0850	Heard red-bellied woodpecker, Northern cardinal, and mourning dove.
12	0900	Observed swallow-tail kite and black vulture. Heard red-shouldered hawk and red-bellied woodpecker.
13	0910	Observed red-shouldered hawk and swallow-tail kite. Heard red-bellied woodpecker.
14	0918	Observed black vulture and swallow-tail kite. Heard Northern cardinal.
	0928	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Partly cloudy skies, no wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy skies, moderate wind, and temperature in the low 80's.

Observer: Shane Johnson

Station	Time	Field Notes
1	0630	Heard red-bellied woodpecker, white-eyed vireo, Carolina wren, blue-gray gnatcatcher, and mourning dove. Heard and observed red-shouldered hawk.
2	0640	Heard mourning dove, red-bellied woodpecker, and pileated woodpecker.
3	0650	Heard and observed white-eyed vireo. Heard mourning dove, red-bellied woodpecker, Carolina wren, and red-shouldered hawk.
4	0700	Heard and observed great-crested flycatcher. Heard red-shouldered hawk, downy woodpecker, and pine warbler.
5	0710	Heard Northern cardinal, Carolina wren, downy woodpecker, and mourning dove.
6	0720	Heard Carolina wren, mourning dove, and red-bellied woodpecker.
7	0730	Heard mourning dove, red-bellied woodpecker, and white-eyed vireo.
8	0740	Heard red-bellied woodpecker, Carolina wren, downy woodpecker, and mourning dove. Observed ground dove.
9	0750	Heard downy woodpecker, Carolina wren, and great-crested flycatcher.
10	0800	Heard and observed red-bellied woodpecker. Heard great-crested flycatcher, downy woodpecker, and mourning dove.
11	0810	Heard pine warbler. Heard and observed great-crested flycatcher, mourning dove, and red-bellied woodpecker.
12	0820	Heard Carolina wren, blue-gray gnatcatcher, and red-bellied woodpecker.

Station	Time	Field Notes
13	0830	Heard pileated woodpecker, Carolina wren, and red-bellied woodpecker.
14	0840	Heard red-bellied woodpeckers and blue-gray gnatcatcher. Heard and observed Northern cardinal.
15	0850	Heard red-bellied woodpecker, blue-gray gnatcatcher, and Carolina wren. Heard and observed red-shouldered hawk.
16	0900	Heard blue-gray gnatcatcher and red-bellied woodpecker.
17	0910	Heard white-eyed vireo, downy woodpecker, and red-bellied woodpecker.
18	0920	Heard Carolina wren and white-eyed vireo.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2007
Survey Transect: F
Start time of survey: 0640 **Weather conditions:** Partly cloudy skies, no wind, and temperature in the upper 70's.

End time of survey: 0930 **Weather conditions:** Sunny skies, breezy, and temperature in the mid 80's.

Observer: Ken Passarella

Station	Time	Field Notes
1	0640	Heard mourning dove, red-shouldered hawk, Carolina wren, and red-bellied woodpecker.
2	0655	Observed hairy woodpecker foraging on dead pine and common nighthawk fly overhead. Heard mourning dove, blue jay, and Carolina wren.
3	0710	Observed red-bellied woodpecker foraging on pine, blue jay on cabbage palm, two blue-gray gnatcatchers on pines, and raccoon in pine. Heard Carolina wren.
4*	0725	Heard crow and Carolina wren.
5*	0740	Heard crow. Observed great-crested flycatcher in pine.
6*	0755	Heard Carolina wren and motorcycle on test track. Observed blue-gray gnatcatcher on cypress.
7	0810	Observed pine warblers foraging on pines. Heard motorcycle on test track.
8*	0825	Heard red-bellied woodpecker and motorcycle on test track.
9*	0840	Heard red-shouldered hawk.
10	0855	Heard red-bellied woodpecker, blue-gray gnatcatcher, Carolina wren, and motorcycle on test track.
11	0910	Heard Carolina wren and motorcycle on test track.
12	0925	Heard motorcycle on test track and red-bellied woodpecker.
	0930	End of survey. No red-cockaded woodpecker heard or observed during the survey.
		*Pine flatwoods burned. Large fire breaks cut through woods.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 31, 2007
Survey Transect: A
Start time of survey: 0610 **Weather conditions:** Partly cloudy, wind 0-5 mph, and temperature in the low 70's.

End time of survey: 0910 **Weather conditions:** Overcast, wind 0-10 mph, and temperature in the upper 70's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0610	Heard Northern cardinal and Carolina wren.
2	0622	Heard Northern cardinal, mourning dove, barred owl, Carolina wren, and red-bellied woodpecker.
3	0645	Heard mourning dove, Eastern meadowlark, red-bellied woodpecker, and cattle.
4	0700	Heard red-shouldered hawk. Heard and observed mourning doves, Carolina wren, and common grackles.
5	0723	Heard and observed great-crested flycatcher and downy woodpecker. Heard red-bellied woodpecker, pileated woodpecker, Carolina wren, mourning doves, and ground doves.
6	0750	Heard and observed Northern cardinal, red-bellied woodpecker, and Northern mockingbird. Heard cattle and Eastern meadowlark in the distance.
7	0814	Heard and observed two red-bellied woodpeckers and mourning doves. Heard Carolina wren, ground doves, Northern bobwhite, cattle, Eastern meadowlarks, Eastern towhee, and sandhill cranes to the southeast.
8	0845	Heard blue jay, Northern mockingbirds, mourning doves, pine warbler, and downy woodpecker.
	0910	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 31, 2007
Survey Transect: B
Start time of survey: 0628 **Weather conditions:** Partly cloudy skies, light rain, light wind, and temperature in the low 70's.

End time of survey: 0920 **Weather conditions:** Partly cloudy, light wind, and temperature in the mid 70's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0628	Observed barred owl. Herd Northern cardinal, Carolina wren, and red-bellied woodpecker.
2	0641	Observed Northern cardinal. Heard red-shouldered hawk and red-bellied woodpecker.
3	0653	Observed common ground doves. Heard red-bellied woodpecker, Eastern towhee, and Northern cardinal.
4	0707	Observed swallow-tail kite flying northwest. Heard red-shouldered hawk, downy woodpecker, and Carolina wren.
5	0700	Observed common ground dove, Northern cardinal, and downy woodpecker. Heard blue-gray gnatcatcher.
6	0735	Observed Northern cardinal. Heard red-shouldered hawk, red-bellied woodpecker, and swallow-tail kite to the north.
7	0752	Observed red-bellied woodpecker and Northern cardinal. Heard swallow-tail kite to the north and green tree frog.
8	0805	Observed red-bellied woodpecker and red-shouldered hawk. Heard swallow-tail kite to the north and Carolina wren.
9	0828	Heard and observed swallow-tail kite circling 30 feet overhead to the north. Heard red-bellied woodpecker. Observed gray squirrel.
10	0844	Observed downy woodpecker and Northern cardinal. Heard red-bellied woodpecker.
11	0859	Heard red-bellied woodpecker and Northern cardinal.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 31, 2007
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloudy skies, light rain, no wind, and temperature in the low 70's.

End time of survey: 0925 **Weather conditions:** Mostly cloudy skies, wind 5-10 mph southwest, and temperature in the high 70's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0630	Heard Northern cardinal, mourning dove, red-bellied woodpecker, red-shouldered hawk, and red-winged blackbird.
2	0645	Heard and observed Northern cardinal and red-shouldered hawk. Heard mourning dove.
3	0700	Heard and observed Northern cardinal. Heard mourning dove, red-shouldered hawk, and blue-gray gnatcatcher. Observed Carolina wren.
4	0712	Heard and observed Northern cardinal, Carolina wren, and blue-gray gnatcatcher. Heard mourning dove and red-bellied woodpecker.
5	0724	Heard mourning dove, Northern cardinal, and red-shouldered hawk.
6	0735	Heard and observed Northern cardinal. Heard mourning dove.
7	0748	Heard mourning dove, Florida sandhill cranes, Northern cardinal, and red-shouldered hawk.
8	0800	Heard mourning dove and Florida sandhill cranes. Heard and observed Northern cardinal. Observed swallow-tail kite.
9	0813	Heard and observed red-bellied woodpecker. Heard Northern cardinal, mourning dove, and red-shouldered hawk.
10	0826	Heard red-shouldered hawk, Northern cardinal, red-bellied woodpecker, blue-gray gnatcatcher, and mourning dove.
11	0840	Heard Northern cardinal, white-eyed vireo, blue-gray gnatcatcher, and mourning dove. Observed cattle egret and red-bellied woodpecker.
12	0852	Heard and observed red-bellied woodpecker. Observed black vulture. Heard red-shouldered hawk.

Station	Time	Field Notes
13	0902	Heard Northern cardinal and red-shouldered hawk. Heard and observed red-bellied woodpecker.
14	0912	Heard Northern cardinal. Heard and observed red-bellied woodpecker.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 31, 2007
Survey Transect: D
Start time of survey: 0640 **Weather conditions:** Mostly cloudy skies, little to no wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Mostly cloudy skies, 0-5 mph east, and temperature in the high 70's.

Observer: Alicia Kruse

Station	Time	Field Notes
1	0700	Heard Carolina wren, blue jay, and mourning dove. Heard and observed red-shouldered hawk. Observed two white-tailed deer.
2	0720	Heard Northern mockingbird, Northern cardinal, and red-bellied woodpecker.
3	0734	Observed black vulture. Heard and observed Northern cardinal. Heard blue jay, white-eyed vireo, and Northern parula.
4	0755	Heard red-bellied woodpecker, mourning dove, and Eastern towhee. Heard and observed red-shouldered hawk.
5	0811	Heard Northern cardinal and red-bellied woodpecker. Observed red-shouldered hawk.
6	0823	Heard mourning dove, red-bellied woodpecker, and American crows.
7	0830	Heard downy woodpecker and Eastern towhee.
8	0842	Heard Northern parula, white-eyed vireo, and Carolina wren.
9	0851	Heard mourning dove and Northern cardinal. Observed black vulture.
10	0904	Observed ten cattle egrets and turkey vulture.
11	0916	Heard mourning dove, red-bellied woodpecker, and Northern mockingbird. Observed black vulture.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 31, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Mostly cloudy skies, calm winds, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Mostly cloudy skies, moderate winds, and temperature in the high 70's.

Observer: Debbie Tyson

Station	Time	Field Notes
1	0630	Heard and observed downy woodpecker. Heard red-bellied woodpecker, blue-gray gnatcatcher, northern cardinal, blue jay, white-eyed vireo, and red-shouldered hawk.
2	0650	Heard blue jay, red-bellied woodpecker, downy woodpecker, and blue-gray gnatcatcher. Heard and observed pine warbler.
3	0710	Heard downy woodpecker and red-bellied woodpecker.
4	0725	Heard blue jay, mourning dove, Northern cardinal, blue-gray gnatcatcher, and white-eyed vireo. Inspected for red-cockaded woodpecker cavities, none observed.
5	0755	Heard and observed red-shouldered hawk and Northern cardinal. Heard downy woodpecker, blue jay, and mourning dove.
6	0820	Observed gray squirrel and great-crested flycatcher. Heard blue-gray gnatcatcher.
7	0835	Heard red-bellied woodpecker and blue-gray gnatcatcher. Observed red-shouldered hawk.
8	0855	Heard red-bellied woodpecker and blue-gray gnatcatcher.
9	0910	Heard Northern cardinal and red-bellied woodpecker.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 31, 2007
Survey Transect: F
Start time of survey: 0630 **Weather conditions:** Cloudy skies, light rain, no wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Mostly cloudy, wind 0-5 mph northeast, and temperature in the low 80's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0630	Heard Northern cardinal, blue-gray gnatcatcher, and red-shouldered hawk.
2	0651	Heard white-eyed vireo, Northern cardinal, and downy woodpecker to the east.
3	0717	Heard red-shouldered hawk, Northern cardinal, downy woodpecker, red-bellied woodpecker, and pileated woodpecker to the south. Observed mourning dove and downy woodpecker foraging on pines.
4	0751	Heard Northern cardinal, blue jay, and blue-gray gnatcatcher. Heard and observed red-bellied woodpeckers foraging on pine snags and mourning doves.
5	0813	Heard and observed Carolina wren, blue jays, and mourning dove. Heard red-bellied woodpecker, downy woodpecker, and fish crow.
6	0836	Heard downy woodpecker to the south, Carolina wren, and mourning dove. Heard and observed red-bellied woodpecker foraging on pine snags and great-crested flycatcher.
7	0905	Heard and observed pileated woodpeckers fly north and red-bellied woodpeckers fly east and forage on pines. Heard Northern cardinal, Carolina wren, and mourning dove.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 1, 2007
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Overcast, light rain, calm winds, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Overcast, calm winds, and temperature in the mid 70's.

Observer: Doug Holt

Station	Time	Field Notes
1	0630	Heard Eastern meadowlark, Northern cardinal, and Northern mockingbird. Observed loggerhead shrike perched on fence.
2	0645	Heard great-crested flycatcher and male Northern bobwhite.
3	0700	Heard pileated woodpecker, Northern cardinal, and Eastern towhee.
4	0715	Heard mourning dove, blue jay, and Carolina wren.
	0730	Survey suspended due to heavy rain. Survey resumed at 0800.
5	0800	Heard red-shouldered hawk, blue jay, great-crested flycatcher, and Northern cardinal.
6	0815	Heard Eastern towhee and common grackle. Observed common night hawk flying and calling overhead.
7	0830	Heard Eastern meadowlark and blue jay. Observed black vultures perched in snag.
8	0845	Heard red-shouldered hawk and common nighthawk. Observed cattle egrets flying overhead.
9	0900	Heard mourning doves, Northern cardinal, and Carolina wren. Observed common ground dove trail.
10	0915	Heard Northern cardinal and Northern mockingbird.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 1, 2007
Survey Transect: B
Start time of survey: 0637 **Weather conditions:** Overcast, light rain, wind 0-5 mph northeast, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Overcast, wind 0-5 mph northeast, and temperature in the mid 70's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0637	Heard and observed two common nighthawks circling to the northwest. Heard red-bellied woodpecker to the southeast, mourning dove to the north, Northern cardinal to the east, red-shouldered hawk to the north, and Carolina wren to the northeast.
2	0652	Heard and observed pileated woodpecker to the northeast. Heard downy woodpecker, Carolina wren, and great-crested flycatcher to the east, and red-bellied woodpecker and blue-gray gnatcatcher to the southeast.
3	0707	Heard red-bellied woodpecker and Northern cardinal to the east, blue-gray gnatcatcher to the southwest, and red-shouldered hawk to the west.
	0722	Survey suspended due to rain. Resumed at 0730.
4	0730	Heard Northern cardinal to the northwest and red-bellied woodpecker to the north.
5	0746	Heard Northern cardinal to the east, Carolina wren to the northeast, common ground dove to the northwest, and red-shouldered hawk to the north. Observed mourning doves fly overhead to the east.
6	0803	Heard common ground dove to the south, Carolina wren and Northern cardinal to the north, and red-bellied woodpecker to the northwest. Observed swallow-tail kite circling to the east.
7	0820	Heard red-bellied woodpecker and common ground dove to the east, and Northern cardinal to the north.
8	0840	Heard and observed red-bellied woodpecker to the northeast and Northern cardinal to the south. Heard blue-gray gnatcatcher to the northeast, mourning dove to the north, and common ground dove to the east.

Station	Time	Field Notes
9	0901	Heard red-bellied woodpecker to the south, Northern cardinal to the southwest, and mourning dove to the east.
10	0914	Heard and observed Northern cardinal to the north, mourning dove to the west, and Eastern towhee to the east. Heard red-bellied woodpecker to the west, common ground dove to the southwest, and blue-gray gnatcatcher to the southeast.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 1, 2007
Survey Transect: C
Start time of survey: 0615 **Weather conditions:** Cloudy skies, light rain, no wind, and temperature in the low 70's.

End time of survey: 0925 **Weather conditions:** Cloudy skies, wind 0-5 mph south, and temperature in the high 70's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0615	Heard mourning dove, Northern cardinal, barred owl, and red-bellied woodpecker. Observed red-shouldered hawk. Heard and observed Carolina wren.
2	0628	Heard Northern cardinal, mourning dove, red-shouldered hawk, and red-bellied woodpecker.
3	0640	Heard barred owl, red-shouldered hawk, mourning dove, and red-bellied woodpecker. Observed Northern cardinal.
4	0653	Heard and observed Northern cardinal and mourning dove. Heard common ground dove, red-bellied woodpecker, red-shouldered hawk, and Carolina wren.
5	0705	Heard mourning dove, Northern cardinal, and red-bellied woodpecker.
6	0718	Observed mourning dove and red-shouldered hawk.
7	0732	Observed swallow-tail kite and cattle egret. Heard Northern cardinal and red-bellied woodpecker.
8	0745	Observed swallow-tail kite. Heard Northern cardinal and red-bellied woodpecker.
9	0800	Heard and observed red-bellied woodpecker and Northern cardinal. Heard mourning dove.
10	0815	Heard and observed downy woodpecker, Northern cardinal, blue jay, and swallow-tail kite. Heard mourning dove and red-shouldered hawk.
11	0828	Heard and observed Northern cardinal and swallow-tail. Heard mourning dove and great-crested flycatcher.

Station	Time	Field Notes
12	0840	Heard mourning dove, Carolina wren, red-shouldered. Observed swallow-tail kite and red-bellied woodpecker. Heard and observed Northern cardinal.
13	0855	Heard and observed Northern cardinal. Heard mourning dove and red-bellied woodpecker. Observed black vulture.
14	0907	Heard and observed Northern cardinal and red-bellied woodpecker. Observed swallow-tail. Heard mourning dove.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 1, 2007
Survey Transect: D
Start time of survey: 0634 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the low 70's.

End time of survey: 0934 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the low 70's.

Observer: David Anthony

Station	Time	Field Notes
1	0634	Heard red-bellied woodpecker to the east, pine warbler to the northeast, Northern cardinal to the northwest, and mourning dove to the south.
2	0654	Heard blue-gray gnatcatcher to the east, red-bellied woodpecker to the northwest, and mourning dove to the south.
3	0718	Heard Northern cardinal to the northwest, Northern flicker to the southwest, and Carolina wren to the west.
4	0735	Heard red-bellied woodpecker to the northwest, red-shouldered hawk to the west, pine warbler to the southeast, and Northern cardinal to the east.
5	0748	Heard pileated woodpecker to the south and red-shouldered hawk to the northwest.
6	0811	Heard mourning dove to the southwest and red-bellied woodpecker to the west.
7	0831	Heard Northern cardinal to the south and mourning dove to the southwest.
8	0846	Heard pileated woodpecker to the southwest and blue-gray gnatcatcher to the east.
9	0905	Heard Carolina wren to the east and red-bellied woodpecker to the northeast.
10	0923	Heard red-bellied woodpecker to the south.
	0934	End of survey. No red-cockaded woodpeckers were heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 1, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Cloudy skies, light rain, no wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Cloudy skies, wind 0-5 mph east, and temperature in the low 70's.

Observer: Shane Johnson

Station	Time	Field Notes
1	0630	Heard great-crested flycatcher, Northern cardinal, and Carolina wren.
2	0640	Heard white-eyed vireo, pine warbler, and Northern cardinal.
3	0655	Heard mourning dove, red-bellied woodpecker, and Carolina wren.
4	0710	Heard great-crested flycatcher, red-bellied woodpecker, blue jay, mourning dove, and Carolina wren.
5	0725	Heard downy woodpecker, pileated woodpecker, Carolina wren, and blue-gray gnatcatcher.
6	0745	Heard and observed Northern cardinal. Heard Carolina wren and downy woodpecker.
7	0800	Heard Northern flicker, downy woodpecker, pine warbler, Carolina wren, and red-bellied woodpecker.
8	0815	Heard mourning dove, Carolina wren, and red-bellied woodpecker.
9	0830	Heard white-eyed vireo, mourning dove, and Carolina wren.
10	0845	Heard Carolina wren, blue jay, blue-gray gnatcatcher, Northern cardinal, red-bellied woodpecker, and pine warbler.
11	0900	Heard white-eyed vireo, red-bellied woodpecker, and Northern cardinal.
12	0915	Heard and observed red-shouldered hawk. Hard blue-gray gnatcatcher, red-bellied woodpecker, and Northern cardinal.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 1, 2007
Survey Transect: F
Start time of survey: 0635 **Weather conditions:** Cloudy skies, moderate rain, calm winds, and temperature in the mid 70's.

End time of survey: 0943 **Weather conditions:** Cloudy skies, light rain, wind variable 0-5 mph, and temperature in the mid 70's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0635	Heard downy woodpecker and great-crested flycatcher.
2	0657	Heard and observed great-crested flycatcher. Heard Northern cardinal and white-eyed vireo.
3	0720	Heard and observed blue jay and red-bellied woodpecker foraging on pine snag. Heard Northern cardinal and Carolina wren.
4	0745	Heard and observed mourning dove and pileated woodpecker fly west. Heard Northern cardinal and blue-gray gnatcatcher.
5	0807	Heard and observed red-shouldered hawk and red-bellied woodpecker fly from snag to pines. Heard white-eyed vireo, Northern cardinal, and blue-gray gnatcatcher.
6	0831	Heard Northern cardinal and pileated woodpecker. Heard and observed red-bellied woodpecker foraging on pine snag.
7	0852	Heard pileated woodpecker and blue jay. Heard and observed red-bellied woodpecker fly west. Observed gray squirrels.
	0943	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2007
Survey Transect: A
Start time of survey: 0625 **Weather conditions:** Foggy skies, calm winds, and temperature in the mid 60's.

End time of survey: 0935 **Weather conditions:** Clear skies, wind 0-5 mph, and temperature in the high 70's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0625	Heard Eastern meadowlarks, pileated woodpecker, and common grackles. Observed two white ibis flying north.
2	0645	Heard white-eyed vireo, barred owl, and pileated woodpecker. Observed common ground doves and Northern mockingbird.
3	0700	Heard and observed Northern cardinal and mourning dove.
4	0718	Observed Northern mockingbird and common ground doves. Heard and observed red-bellied woodpecker and Eastern towhee.
5	0735	Heard white-eyed vireo and barred owl. Observed common ground doves.
6	0757	Observed black vulture flying, boat-tailed grackle, red-bellied woodpecker, and raccoon.
7	0818	Observed pileated woodpecker and Northern cardinal.
8	0835	Heard and observed Eastern meadowlark, red-bellied woodpecker, and red-shouldered hawk. Observed black vultures.
9	0855	Observed blue jay, mourning dove, loggerhead shrike, and Northern mockingbirds.
10	0910	Heard Eastern meadowlarks. Observed Northern cardinal.
11	0923	Heard and observed Carolina wren, Eastern meadowlarks, red-shouldered hawk, and common grackle.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2007
Survey Transect: B
Start time of survey: 0621 **Weather conditions:** Clear skies with some fog, calm winds, and temperature in the mid 60's.

End time of survey: 0930 **Weather conditions:** Clear skies, wind 0-5 mph southwest, and temperature in the mid 70's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0621	Heard and observed red-bellied woodpecker and Carolina wren to the north and Northern cardinal to the northwest. Heard red-shouldered hawk to the east, mourning dove and pileated woodpecker to the west, and great-crested flycatcher to the northwest.
2	0636	Heard and observed red-bellied woodpecker to the west. Observed pileated woodpecker to the west. Heard Northern cardinal to the northeast, mourning dove to the south, great-crested flycatcher to the southwest, red-shouldered hawk to the southeast, and Carolina wren to the east.
3	0651	Heard and observed Northern cardinal to the west. Heard Carolina wren, common ground dove, and pileated woodpecker to the northwest, red-bellied woodpecker to the east, and mourning dove to the west.
4	0705	Heard ground dove to the west, Northern cardinal to the north, red-bellied woodpecker to the southeast, and great-crested flycatcher and blue-gray gnatcatcher to the northwest.
5	0723	Heard and observed tufted titmouse to the northeast. Heard red-bellied woodpecker to the northeast, mourning dove to the southwest, Northern cardinal to the northwest, common ground dove to the south, blue-gray gnatcatcher to the north, and Carolina wren to the east.
6	0735	Heard mourning dove to the west, Northern cardinal to the east, common ground dove to the southwest, red-bellied woodpecker to the north, and red-shouldered hawk to the northeast.
7	0750	Heard and observed swallow-tail kite perched on pine to the north. Heard Carolina wren to the southwest, red-bellied woodpecker and mourning dove to the east, red-shouldered hawk to the southeast, Northern cardinal to the south, and downy woodpecker to the northwest.

Station	Time	Field Notes
8	0805	Heard and observed red-shouldered hawk to the northwest. Heard Carolina wren and downy woodpecker to the southeast, Northern cardinal to the south, and red-bellied woodpecker to the southwest.
9	0826	Heard and observed red-bellied to the east. Observed red-shouldered hawk fly to the southwest. Heard common ground dove to the northeast and Northern cardinal to the south.
10	0841	Heard and observed Northern cardinal to the southwest and red-bellied woodpecker to the north. Heard red-shouldered hawk to the south and downy woodpecker to the east.
11	0857	Heard Northern cardinal to the northeast, red-shouldered hawk to the southeast, mourning dove to the north, red-bellied woodpecker to the northwest, and blue-gray gnatcatcher and Carolina wren to the north.
12	0912	Observed three swallow tail kites circling overhead and downy woodpecker to the west. Heard Carolina wren to the east and red-shouldered hawk to the south.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2007
Survey Transect: C
Start time of survey: 0634 **Weather conditions:** Foggy, no wind, and temperature in the mid 60's.

End time of survey: 0918 **Weather conditions:** Clear skies, light wind, and temperature in the low 80's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0634	Heard red-bellied woodpecker, blue-gray gnatcatcher, and red-shouldered hawk.
2	0657	Heard Northern cardinal, mourning dove, and Carolina wren.
3	0710	Heard pine warbler, Carolina wren, and red-bellied woodpecker.
4	0723	Observed common yellowthroat and Northern cardinal. Heard pine warbler and common ground dove.
5	0736	Heard pine warbler. Observed Northern cardinal and common yellowthroat.
6	0752	Heard Northern cardinal, pine warbler, and red-shouldered hawk.
7	0807	Heard Northern cardinal. Observed mourning dove and red-shouldered hawk.
8	0823	Heard Northern cardinal, common ground dove, and downy woodpecker. Observed red-bellied woodpecker.
9	0837	Observed downy woodpecker, Northern cardinal, and swallow-tail kite flying south.
10	0854	Heard Carolina wren, blue jay, and downy woodpecker. Observed red-bellied woodpecker and red-shouldered hawk.
11	0906	Observed pileated woodpecker and Northern cardinal.
	0918	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2007
Survey Transect: D
Start time of survey: 0620 **Weather conditions:** Mostly cloudy skies, foggy, little to no wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy skies, wind 0-5 mph east, and temperature in the mid 80's.

Observer: Alicia Kruse

Station	Time	Field Notes
1	0637	Observed red-shouldered hawk, barred owl, and marsh rabbit. Heard red-bellied woodpecker, Northern mockingbird, Northern cardinal, and mourning dove.
2	0652	Heard and observed Northern cardinal and downy woodpecker. Observed mourning dove. Heard pileated woodpecker and Carolina wren.
3	0707	Heard and observed two red-bellied woodpeckers and mourning dove. Heard downy woodpecker, white-eyed vireo, and Northern parula.
4	0723	Heard and observed red-bellied woodpecker and Carolina wren. Heard Northern mockingbird, Eastern towhee, and mourning dove.
5	0740	Heard red-bellied woodpecker, mourning dove, pine warbler, blue jay, and Northern cardinal.
6	0756	Observed two ground doves. Heard and observed pileated woodpecker, red-bellied woodpecker, and blue-gray gnatcatcher.
7	0813	Heard and observed Northern flicker. Heard red-shouldered hawk, American crow, and downy woodpecker.
8	0829	Heard and observed red-shouldered hawk. Heard Northern cardinal.
9	0841	Heard red-bellied woodpecker, Northern cardinal, and blue jay.
10	0858	Heard Northern cardinal, red-bellied woodpecker, and blue-gray gnatcatcher.
11	0909	Heard mourning dove and Northern cardinal.
12	0922	Heard and observed downy woodpecker. Observed black vulture and red-shouldered hawk. Heard mourning dove.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Overcast with light fog, calm wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Clear skies, light wind, and temperature in the mid 80's.

Observer: Debbie Tyson

Station	Time	Field Notes
1	0630	Heard and observed downy woodpecker. Heard red-bellied woodpecker and Northern cardinal.
2	0645	Heard and observed great-crested flycatcher. Heard blue-gray gnatcatcher, red-bellied woodpecker, Northern cardinal, and downy woodpecker.
3	0700	Heard Northern cardinal and red-bellied woodpecker.
4	0720	Observed mourning and red-bellied. Heard white-eyed vireo, Northern cardinal, and blue-gray gnatcatcher.
5	0740	Heard and observed downy woodpecker. Heard mourning dove, red-bellied woodpecker, red-shouldered hawk, and pileated woodpecker.
6	0755	Observed red-bellied woodpecker and Northern cardinal. Heard downy woodpecker and mourning dove.
7	0815	Heard red-bellied woodpecker, red-shouldered hawk, blue jay, and mourning dove.
8	0830	Heard red-shouldered hawk, blue jay, mourning dove, and red-bellied woodpecker.
9	0855	Heard red-bellied woodpecker, mourning dove, Northern cardinal, and downy woodpecker.
10	0910	Heard red-bellied woodpecker and Northern cardinal.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2007
Survey Transect: F
Start time of survey: 0645 **Weather conditions:** Foggy, calm wind, and temperature in the mid 60's.

End time of survey: 0925 **Weather conditions:** Clear skies, calm wind, and temperature in the low 70's.

Observer: Doug Holt

Station	Time	Field Notes
1	0645	Heard red-shouldered hawk, American crow, pileated woodpecker, and Eastern towhee.
2	0700	Heard Eastern towhee, American crow, and Northern cardinal.
3	0715	Heard blue-gray gnatcatcher, Eastern towhee, and Northern flicker. Observed downy woodpecker foraging on trunk of pine.
4	0730	Heard Eastern towhee, common grackle, and Northern cardinal.
5	0745	Heard Eastern towhee, common grackle, and Northern cardinal.
6	0800	Heard Carolina wren, Eastern towhee, and Northern mockingbird.
7	0815	Heard red-shouldered hawk, American crow, and pileated woodpecker. Observed barred owl perched in pine tree.
8	0830	Heard Eastern towhee, Northern flicker, Northern mockingbird, and American crow.
9	0845	Heard Northern cardinal and Carolina wren.
10	0900	Heard red-shouldered hawk and blue-gray gnatcatcher.
11	0915	Heard Eastern towhee, mourning dove, pileated woodpecker, and great-crested flycatcher.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 5, 2007
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Partly cloudy skies, fog, calm winds, and temperatures in the mid 60's.

End time of survey: 0930 **Weather conditions:** Mostly cloudy skies, southwest 0-5 mph winds, and temperatures in the mid 70's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0630	Heard red-bellied woodpecker to the west, Northern cardinal to the northwest, red-shouldered hawk to the northeast, pileated woodpecker to the north, blue-gray gnatcatcher to the east, mourning dove to the southwest, and white-eyed vireo to the south.
2	0648	Heard and observed downy woodpecker to the northeast. Heard red-bellied woodpecker and great-crested flycatcher to the northwest, blue-gray gnatcatcher and Northern cardinal to the north, mourning dove to the northeast, and Carolina wren to the south.
3	0705	Observed mourning dove to the north and great-crested flycatcher to the east. Heard and observed red-bellied woodpecker to the north. Heard common ground dove to the east, Northern cardinal to the south, blue-gray gnatcatcher to the west, and pileated woodpecker to the north.
4	0724	Heard and observed downy woodpecker to the north. Heard mourning dove and common ground dove to the west, and Northern cardinal and Carolina wren to the east.
5	0745	Heard and observed Northern cardinal to the northeast and mourning dove to the southeast. Heard Carolina wren and red-bellied woodpecker to the west, and red-shouldered hawk to the southwest.
6	0800	Observed two swallow-tail kites flying overhead and to the northwest. Heard red-bellied woodpecker to the northwest, Northern cardinal to the west, red-shouldered hawk to the north, and pileated woodpecker to the southwest.
7	0816	Heard and observed Northern cardinal to the west. Heard red-shouldered hawk to the east, Carolina wren to the south, and blue-gray gnatcatcher to the south.

Station	Time	Field Notes
8	0834	Heard red-shouldered hawk and Northern parula to the southwest, Northern cardinal to the east, blue-gray gnatcatcher to the south, and red-bellied woodpecker to the southeast.
9	0852	Observed swallow-tail kite circling to the west and red-shouldered hawk to the northwest. Heard and observed Northern cardinal to the southwest. Heard Northern parula to the east, blue-gray gnatcatcher to the south, and red-bellied woodpecker to the southwest.
10	0913	Observed red-shouldered hawk to the east. Heard Northern cardinal to the northwest and mourning dove to the east.
	0930	End of survey. No red-cockaded woodpecker heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 5, 2007
Survey Transect: C
Start time of survey: 0620 **Weather conditions:** Cloudy skies, foggy, little to no wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy, wind 0-5 mph west, and temperature in the mid 80's.

Observer: Alicia Kruse

Station	Time	Field Notes
1	0626	Heard and observed pine warbler and Northern cardinal. Heard mourning dove, red-bellied woodpecker, and Eastern meadowlark.
2	0645	Observed blue jay and pileated woodpecker. Heard red-shouldered hawk, mourning dove, and Northern cardinal.
3	0658	Heard and observed red-shouldered hawk. Heard Northern cardinal, mourning dove, red-bellied woodpecker, and Northern mockingbird.
4	0710	Heard and observed Eastern towhee and Northern cardinal. Heard red-bellied woodpecker, blue jay, and mourning doves.
5	0724	Heard and observed two Northern cardinals and red-bellied woodpecker. Heard mourning dove and great-crested flycatcher.
6	0736	Heard and observed three downy woodpeckers, red-bellied woodpecker, and two Northern cardinals. Observed swallow-tail kite.
7	0752	Heard and observed four American crows, three red-bellied woodpeckers, two Northern mockingbirds, four great-crested flycatchers, and blue jay. Heard Northern cardinal.
8	0810	Heard and observed eight swallow-tail kites perched in slash pine. Heard red-bellied woodpecker, Northern cardinal, downy woodpecker, and blue jay.
9	0833	Observed swallow-tail kite. Heard mourning dove and Northern cardinal.
10	0849	Observed two swallow-tail kites mating. Heard red-bellied woodpecker.
11	0902	Heard downy woodpecker, mourning dove, red-shouldered hawk, and Northern cardinal.

Station	Time	Field Notes
12	0917	Heard American crow, downy woodpecker, and blue-gray gnatcatcher. Observed red-shouldered hawk and two ground doves.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 5, 2007
Survey Transect: D
Start time of survey: 0639 **Weather conditions:** Clear skies, calm wind, and temperature in the low 70's.

End time of survey: 0939 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the mid 80's.

Observer: David Anthony

Station	Time	Field Notes
1	0639	Heard red-bellied woodpecker to the north, Northern cardinal to the south, mourning dove to the southwest, and pine warbler to the southeast.
2	0658	Heard and observed Northern cardinal on pepper bush to the south, downy woodpecker in cabbage palm to the southeast, and red-bellied woodpecker on pine tree to the south. Heard red-bellied woodpecker to the west, blue-gray gnatcatcher to the northwest, and common grackle to the north.
3	0718	Heard red-shouldered hawk to the north, red-bellied woodpecker to the west, and pileated woodpecker to the east.
4	0736	Heard pine warbler and red-shouldered hawk to the west and red-bellied woodpecker to the southeast.
5	0758	Heard great-crested flycatcher to the southeast, Northern cardinal to the east, and red-bellied woodpecker to the northeast.
6	0813	Heard mourning dove and red-shouldered hawk to the south and red-bellied woodpecker to the west.
7	0830	Heard black-whiskered vireo and blue-gray gnatcatcher to the southeast, Northern cardinal to the west, and pileated woodpecker to the south.
8	0851	Heard pileated woodpecker to the northeast.
9	0910	Heard red-headed woodpecker to the west.
10	0922	Heard Northern cardinal to the north and red-shouldered hawk to the south.
	0939	End of survey. No red-cockaded woodpeckers were heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 5, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Overcast, no wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Partly sunny, wind 0-5 mph west, and temperature in the low 80's.

Observer: Matthew Brosious

Station	Time	Field Notes
1	0630	Heard and observed red-shouldered hawk to the south. Heard Northern cardinal to the southwest and red-bellied woodpecker to the north.
2	0645	Heard and observed downy woodpecker to the north. Observed blue-gray gnatcatcher to the south. Heard Northern cardinal to the west, pine warbler to the northeast, and Carolina wren to the southwest.
3	0705	Heard and observed downy woodpecker to the west. Heard blue-gray gnatcatcher to the east, white-eyed vireo to the southeast, and red-bellied woodpecker to the south.
4	0725	Heard blue-gray gnatcatcher to the southeast, blue jay and red-bellied woodpecker to the south, and great-crested flycatcher to the northwest.
5	0750	Heard red-bellied woodpecker to the southwest, mourning dove to the west, and red-shouldered hawk to the northwest.
6	0805	Heard pine warbler to the west, red-bellied woodpecker to the northwest, and Northern cardinal to the south.
7	0820	Heard and observed Northern cardinal to the east.
8	0840	Heard white-eyed vireo to the northeast and red-bellied woodpecker to the southeast.
9	0900	Observed pileated woodpecker to the north. Heard and observed red-bellied woodpecker to the east and downy woodpecker to the south. Heard blue-gray gnatcatcher to the north.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 5, 2007
Survey Transect: F
Start time of survey: 0630 **Weather conditions:** Cloudy skies, foggy, calm winds and temperature in the mid 60's and humid.

End time of survey: 0935 **Weather conditions:** Mostly cloudy skies, wind variable 3-6 mph from west and northeast, and temperature in the mid 70's and humid.

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Observed Northern cardinal and Carolina wren.
2	0650	Heard mourning dove and barred owl.
3	0715	Heard red-bellied woodpecker and blue-gray gnatcatcher.
4	0740	Observed red-bellied woodpecker and mourning dove.
5	0810	Observed downy woodpecker, Carolina wren, and mourning dove.
6	0830	Observed swallow-tail kite and downy woodpecker.
7	0855	Heard red-bellied woodpecker and down woodpecker.
8	0915	Observed red-shouldered hawk and great-crested flycatcher. Heard red-bellied woodpecker.
9	0935	Observed red-bellied woodpecker, white-eyed vireo, and swallow-tail kites. Heard blue-gray gnatcatcher.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2007
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloudy skies, calm wind, and temperature in the mid 70's and humid.

End time of survey: 0915 **Weather conditions:** Cloudy skies, calm wind, and temperature in the low 80's and humid.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0630	Observed red-shouldered hawk and common grackle. Heard green tree frog and red-bellied woodpecker.
2	0650	Heard Northern cardinal and red-bellied woodpecker.
3	0705	Heard red-shouldered hawk, green tree frog, and Northern cardinal. Observed red-bellied woodpecker.
4	0717	Heard downy woodpecker and red-bellied woodpecker.
5	0731	Observed Northern cardinal, common grackle, and gray squirrel. Heard pileated woodpecker and red-bellied woodpecker.
6	0746	Observed Northern cardinal and raccoon. Heard red-bellied woodpecker.
7	0805	Heard Northern cardinal, Eastern meadowlark, and blue jay. Observed common ground doves.
8	0823	Observed blue, mourning dove, and red-shouldered hawk. Heard Carolina wren, red-bellied woodpecker, and downy woodpecker.
9	0837	Observed common ground dove and red-bellied woodpecker. Heard mourning dove, blue jay, and Carolina wren.
10	0849	Heard Eastern meadowlark and common ground dove.
11	0904	Observed red-bellied woodpecker and pine warbler. Heard Eastern meadowlark.
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2007
Survey Transect: B
Start time of survey: 0615 **Weather conditions:** Overcast, no wind, and temperature in the low 70's and humid.

End time of survey: 0915 **Weather conditions:** Overcast, light rain, wind 0-5 mph west, and temperature in the low 80's and humid.

Observer: Matthew Brosious

Station	Time	Field Notes
1	0615	Heard Northern cardinal to the north and south, and Carolina wren and blue-gray gnatcatcher to the north.
2	0630	Heard downy woodpecker to the south and red-shouldered hawk and red-bellied woodpecker to the east. Heard and observed Northern cardinal to the east.
3	0645	Heard and observed common nighthawk flying to the east. Heard Carolina wren to the east, red-bellied woodpecker to the southeast, and great-crested flycatcher to the northeast.
4	0705	Heard common ground dove to the south and Northern cardinal to the northwest.
5	0725	Heard Northern cardinal to the north, red-bellied woodpecker to the south, and red-shouldered hawk to the southwest.
6	0750	Heard great-crested flycatcher to the northeast and Northern cardinal to the east.
7	0810	Heard and observed Northern cardinal to the west and great-crested flycatcher to the northwest.
8	0830	Observed red-bellied woodpecker to the north. Heard Northern cardinal to the northeast and pileated woodpecker to the southwest.
9	0850	Heard great-crested flycatcher to the north and red-shouldered hawk to the south. Heard and observed red-bellied woodpecker to the southwest.
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2007
Survey Transect: C
Start time of survey: 0624 **Weather conditions:** Mostly cloudy skies, calm wind, and temperature in the mid 70's and humid.

End time of survey: 0920 **Weather conditions:** Overcast, wind 0-5 mph, and temperature in the mid 80's and humid.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0624	Heard and observed red-bellied woodpecker. Observed cattle egret. Heard Northern cardinal, white-eyed vireo, mourning dove, red-shouldered hawk, and green tree frog.
2	0641	Heard and observed Carolina wren. Heard red-shouldered hawk, green tree frog, red-bellied woodpecker, Northern cardinal, mourning dove, and white-eyed vireo.
3	0658	Heard and observed red-bellied woodpecker. Observed white-tailed deer, marsh rabbit, and blue jay. Heard mourning dove, Northern cardinal, green tree frog, Northern parula, Carolina wren, and common ground dove.
4	0710	Heard and observed Carolina wren and red-bellied woodpecker. Heard mourning dove, Northern cardinal, white-eyed vireo, and green tree frog.
5	0727	Heard and observed Northern cardinal. Heard red-bellied woodpecker, mourning dove, and green tree frog.
6	0744	Heard and observed red-shouldered hawk. Heard common ground dove and green tree frog.
7	0757	Heard and observed red-bellied woodpecker. Heard red-shouldered hawk, Northern cardinal, and green tree frog.
8	0812	Heard and observed Northern cardinal, red-bellied woodpecker, and common ground dove. Heard red-shouldered hawk and green tree frog.
9	0830	Heard and observed Northern cardinal. Heard red-bellied woodpecker, Northern parula, and green tree frog.

Station	Time	Field Notes
10	0844	Heard and observed Northern cardinal and downy woodpecker. Heard Northern parula, red-bellied woodpecker, green tree frog, and mourning dove. Began to thunder.
11	0855	Heard Northern cardinal, white-eyed vireo, blue jay, Cuban tree frog, and red-shouldered hawk.
12	0905	Heard and observed red-bellied woodpecker. Observed common ground dove. Heard Northern cardinal.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2007
Survey Transect: D
Start time of survey: 0635 **Weather conditions:** Cloudy skies, no wind, and temperature in the low 70's.

End time of survey: 0925 **Weather conditions:** Cloudy skies, light rain, slight breeze, and temperature in the low 80's. Storm moving in from the south.

Observer: Mike Myers

Station	Time	Field Notes
1	0635	Heard red-bellied woodpecker to the east and mourning dove to the south. Heard and observed an armadillo walk across the trail to the north.
2	0650	No wildlife heard or observed.
3	0710	Heard and observed red-bellied woodpecker perched in pine to the north. Heard red-shouldered hawk and blue jay to the west, and deer snort to the east.
4	0725	Heard mourning dove to the east and red-shouldered hawk to the north.
5	0745	Heard and observed two red-bellied woodpeckers foraging on pine snag to the west. Heard mourning dove to the west.
6	0800	Heard red-bellied woodpecker to the north, and mourning dove and Carolina wren to the west.
7	0820	Heard Carolina wren to the southeast.
8	0835	Heard red-bellied woodpecker to the east and mourning dove to the west.
9	0915	Heard and observed common grackle fly to the south and turkey vulture fly to the west. Heard Northern flicker to the north.
	0925	End of survey. No red-cockaded woodpecker heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Mostly cloudy, no wind, and temperature in the mid 70's.

End time of survey: 0930 **Weather conditions:** Cloudy skies, light rain, wind 0-5 mph southeast, and temperature in the high 70's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0630	Heard Northern cardinal, Carolina wren, great-crested flycatcher, red-bellied woodpecker, and mourning dove.
2	0649	Heard blue jay, great-crested flycatcher, and Northern cardinal. Heard and observed red-bellied woodpeckers foraging on live pines and mourning dove.
3	0711	Heard and observed mourning dove and red-shouldered hawk. Observed great egret flying south. Heard downy woodpecker and Northern cardinal.
4	0727	Heard and observed mourning dove and red-bellied woodpeckers foraging on live pines. Heard downy woodpecker and Northern cardinal.
5	0759	Heard and observed downy woodpecker and red-bellied woodpeckers foraging on live pines. Heard Northern cardinal, mourning dove, and great-crested flycatcher. Observed common ground dove.
6	0821	Heard and observed downy woodpecker foraging on pine snag. Heard Carolina wren, Northern cardinal, and red-bellied woodpecker.
7	0848	Heard and observed red-shouldered hawk. Observed ground dove. Heard blue-gray gnatcatcher, Northern cardinal, and blue jay.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2007
Survey Transect: F
Start time of survey: 0625 **Weather conditions:** Mostly cloudy, calm wind, and temperature in the mid 70's and humid.

End time of survey: 0935 **Weather conditions:** Cloudy, light rain and thunder, calm wind, and temperature in the low 80's and humid.

Observer: William R. Cox

Station	Time	Field Notes
1	0625	Observed Northern cardinal. Heard Carolina wren.
2	0650	Observed red-bellied woodpecker and swallow-tail kite.
3	0710	Heard downy woodpecker. Observed turkey.
4	0745	Heard Carolina wren. Observed great-crested flycatcher and ground dove.
5	0815	Observed downy woodpecker and turkey.
6	0835	Heard red-bellied woodpecker. Observed great-crested flycatcher.
7	0910	Observed red-bellied woodpecker and pileated woodpecker.
8	0935	Observed blue jay and Northern cardinal. Heard pileated woodpecker and downy woodpecker.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 7, 2007
Survey Transect: B
Start time of survey: 0628 **Weather conditions:** Mostly cloudy, light rain, calm wind, and temperature in the mid 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy, wind 0-5 mph east, and temperature in the low 80's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0630	Heard blue-gray gnatcatcher, Northern cardinal, and red-bellied woodpecker to the north, red-shouldered hawk and mourning dove to the west, and great-crested flycatcher to the northwest.
2	0644	Heard mourning dove and Northern cardinal to the northwest, Carolina wren to the north, and common nighthawk and downy woodpecker to the west.
3	0701	Heard common nighthawk to the northeast and Carolina wren to the southwest. Survey on hold due to rain. Survey resumed at 0710.
4	0721	Heard red-shouldered hawk to the south, Northern cardinal to the northwest, red-bellied woodpecker to the north, and mourning dove to the west.
5	0737	Heard Northern cardinal and mourning dove to the north, common ground dove to the northwest, Carolina wren to the south, and downy woodpecker to the southeast. Heard and observed blue-gray gnatcatcher to the southeast.
6	0751	Heard Carolina wren, red-shouldered hawk, and red-bellied woodpecker to the northeast, Northern cardinal to the north, mourning dove to the southeast, and common ground dove to the west. Heard and observed Eastern towhee to the northwest.
7	0808	Heard red-shouldered hawk to the south, red-bellied woodpecker to the northeast, common ground dove to the east, and Northern cardinal, pileated woodpecker and Carolina wren to the north.
8	0822	Heard red-bellied woodpecker to the northeast, downy woodpecker to the north, Carolina wren to the south, and Northern cardinal to the west.

Station	Time	Field Notes
9	0838	Heard Northern cardinal to the north, red-bellied woodpecker to the northwest, and Carolina wren to the southeast. Observed swallow-tail kite circling to the southeast.
10	0853	Heard and observed Northern cardinal to the northeast and red-bellied woodpecker to the south. Heard Carolina wren to the south, pileated woodpecker to the east, and blue-gray gnatcatcher to the northeast. Observed swallow-tail kite circling to the west and mourning dove fly overhead to the southwest.
11	0915	Heard Northern cardinal to the east, downy woodpecker to the north, blue-gray gnatcatcher to the northwest, and Carolina wren to the west.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 7, 2007
Survey Transect: C
Start time of survey: 0610 **Weather conditions:** Mostly cloudy, no wind, and temperature in the mid 70's.

End time of survey: 0923 **Weather conditions:** Clear skies, sunny, clouds 5-10 percent, and wind 0-5 mph southeast.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0610	Heard barred owl, Northern cardinal, mourning dove, red-bellied woodpecker, white-eyed vireo, and blue-gray gnatcatcher.
2	0623	Heard barred owl, mourning dove, Northern cardinal, red-bellied woodpecker, and blue-gray gnatcatcher. Observed cattle egret.
3	0635	Heard red-bellied woodpecker, Carolina wren, mourning dove, and Northern cardinal.
4	0647	Heard and observed red-bellied woodpecker and blue-gray gnatcatcher. Heard mourning dove and Northern cardinal.
	0700	Break for rain.
5	0715	Resumed survey. Heard blue-gray gnatcatcher and Northern cardinal.
6	0727	Heard mourning dove, Northern cardinal, and red-shouldered hawk. Observed black vulture.
7	0740	Heard mourning dove, red-shouldered hawk, and Northern cardinal. Observed blue-gray gnatcatcher, turkey vulture, and black vulture.
8	0752	Heard Northern cardinal, white-eyed vireo, mourning dove, and red-bellied woodpecker.
9	0805	Heard and observed Northern mockingbird and Northern cardinal. Heard mourning dove and red-shouldered hawk. `
10	0818	Heard and observed pileated woodpecker and Northern cardinal. Heard red-shouldered hawk and turkey.
11	0832	Heard and observed red-shouldered hawk and Northern cardinal. Observed turkey vulture and black vulture. Heard red-bellied woodpecker.

Station	Time	Field Notes
12	0845	Heard red-shouldered hawk, great-crested flycatcher, and blue-gray gnatcatcher. Heard and observed Northern cardinal.
13	0858	Heard Northern cardinal, red-shouldered hawk, and red-bellied woodpecker. Observed black vulture.
14	0910	Heard and observed red-bellied woodpecker. Heard Northern cardinal and red-shouldered hawk.
	0923	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 7, 2007
Survey Transect: D
Start time of survey: 0630 **Weather conditions:** Overcast, light rain, calm wind, and temperature in the low 70's.

End time of survey: 0935 **Weather conditions:** Partly cloudy skies, sunny, calm wind, and temperature in the mid 80's.

Observer: David Anthony

Station	Time	Field Notes
0630	1	Heard mourning dove to the east, Northern cardinal to the north, and pine warbler to the west.
0650	2	Heard Northern flicker to the north, mourning dove to the east, and blue-gray gnatcatcher to the northeast.
0720	3	Heard red-bellied woodpecker to the west, Northern cardinal to the southwest, and Carolina wren to the north.
0742	4	Observed Carolina wren in cypress tree to the south. Heard blue-gray gnatcatcher to the east and Northern flicker to the northeast. Heard Cuban tree frogs.
0801	5	Heard red-bellied woodpecker to the northwest.
0820	6	Heard Northern cardinal to the southeast and blue-gray gnatcatcher to the north.
0842	7	Heard Northern flicker to the southwest. Heard Cuban tree frogs.
0903	8	Heard and observed red-shouldered hawk flying southeast. Heard red-bellied woodpecker to the south.
0925	9	Observed turkey vulture flying south. Heard mourning dove to the south, black-whiskered vireo to the west, and Northern flicker to the northwest.
	0935	End of survey. No red-cockaded woodpeckers were heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 7, 2007
Survey Transect: F
Start time of survey: 0625 **Weather conditions:** Cloudy skies, humid with light rain, calm winds, and temperature in the mid 70's.

End time of survey: 0940 **Weather conditions:** Partly cloudy skies, humid, calm winds, and temperature in the low 80's.

Observer: William R. Cox

Station	Time	Field Notes
1	0625	Observed Northern cardinal. Heard Chuck will's widow.
2	0650	Observed great horned owl.
3	0815	Observed great crested flycatcher and mourning dove. Heard Carolina wren.
4	0840	Heard red-bellied woodpecker and white-eyed vireo.
5	0900	Observed Northern cardinal and swallow-tailed kites. Heard Carolina wren.
6	0925	Heard white-eyed vireo, downy woodpecker, and common yellowthroat. Observed blue jay.
7	0940	Heard Carolina wren and pine warbler. Observed red-bellied woodpecker.
	0940	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 8, 2007
Survey Transect: A
Start time of survey: 0615 **Weather conditions:** Mostly clear skies, fog, calm winds, and temperature in the mid 70's.

End time of survey: 0920 **Weather conditions:** Partly cloudy skies, winds 0-5 mph, and temperature in the low 80's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0615	Heard mourning dove, Northern mockingbird, red-shouldered hawk, and red-bellied woodpecker.
2	0627	Heard and observed red-shouldered hawk. Heard Carolina wren, mourning dove, red-bellied woodpecker, and pileated woodpecker. Observed great egret flying south.
3	0647	Observed red-shouldered hawk. Heard Carolina wren, red-bellied woodpecker, mourning dove, and downy woodpecker.
4	0720	Heard Florida sandhill cranes in marsh. Heard mourning doves, great crested flycatcher, and Eastern meadowlark.
5	0745	Heard red-bellied woodpecker and Eastern meadowlark.
6	0805	Heard Northern cardinal, mourning dove, and common ground dove. Heard and observed blue jay. Heard Eastern meadowlark. Observed Eastern cottontail. Heard Carolina wren, pileated woodpecker, and downy woodpecker.
7	0820	Heard common ground dove, mourning dove, and Northern cardinal. Observed Eastern towhee.
8	0840	Heard common ground doves, downy woodpecker, blue jay, and Eastern meadowlark. Observed two dogs.
9	0855	Heard Northern cardinal, Eastern meadowlark, mourning dove, and blue jay.
10	0910	Heard and observed Northern cardinal. Heard red-shouldered hawk and Eastern meadowlark.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 8, 2007
Survey Transect: B
Start time of survey: 0620 **Weather conditions:** Clear skies with low fog, calm winds, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy skies, winds 0-5 mph, and temperature in the low 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0620	Heard red-shouldered hawk and Northern cardinal. Observed white ibis flying to northeast.
2	0635	Heard and observed swallow-tailed kite flying, red-shouldered hawk, and red-bellied woodpecker. Heard Chuck-will's-widow.
3	0652	Observed wild turkeys, rabbit, blue-gray gnatcatcher, and Northern cardinal. Heard white-eyed vireo.
4	0713	Heard and observed red-bellied woodpecker, pine warblers, and Northern mockingbird. Observed rabbit and pileated woodpecker.
5	0735	Heard fish crow. Observed two white-tailed deer, red-shouldered hawk, red-bellied woodpecker, Northern flicker, and mourning doves.
6	0756	Observed swallow-tailed kite flying, turkey vultures soaring, and wild turkeys. Heard red-shouldered hawk and white-eyed vireo.
7	0812	Heard and observed blue jay, red-bellied woodpecker, and red-shouldered hawk. Observed rabbit and Northern cardinal.
8	0830	Observed feral hog with piglets, common grackles, turkey vultures, red-bellied woodpecker, and green anoles.
9	0856	Observed wild turkeys, swallow-tailed kite flying, great blue heron flying north, and blue-gray gnatcatcher.
10	0910	Heard and observed fish crow, red-bellied woodpecker, Northern flicker, and Northern cardinal.
	0923	Heard and observed red-shouldered hawk and red-bellied woodpecker. Observed black racer and Northern mockingbird.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 8, 2007
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Foggy skies, calm wind, and temperature in the mid 70's.

End time of survey: 0926 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the mid 80's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0630	Heard red-bellied woodpecker, white-eyed vireo, mourning dove, Northern cardinal, and green tree frog. Heard and observed red-shouldered hawk
2	0645	Heard and observed Northern cardinal and downy woodpecker. Heard red-bellied woodpecker, Eastern meadowlark, mourning dove, great crested flycatcher, and green tree frog.
3	0704	Heard Northern cardinal, green tree frog, mourning dove, Eastern meadowlark, and downy woodpecker. Heard and observed red-bellied woodpecker, great crested flycatcher, and common grackle.
4	0717	Heard mourning dove, blue jay, green tree frog, and red-bellied woodpecker.
5	0732	Observed great blue heron flying, cattle egret flying, and white ibis flying. Heard and observed Northern cardinal. Heard white-eyed vireo, blue jay, green tree frog, and red-bellied woodpecker.
6	0748	Heard common ground dove and green tree frog. Heard and observed Northern cardinal and red-bellied woodpecker.
7	0759	Heard red-bellied woodpecker, mourning dove, and green tree frog. Heard and observed Northern cardinal. Heard common ground dove.
8	0815	Heard and observed swallow-tailed kites flying. Heard Northern cardinal, red-bellied woodpecker, and common ground dove.
9	0831	Heard Cuban tree frog, Northern cardinal, red-bellied woodpecker, and mourning dove.

Station	Time	Field Notes
10	0845	Heard red-bellied woodpecker, Northern cardinal, and blue-gray gnatcatcher. Heard and observed downy woodpecker. Observed swallow-tailed kite.
11	0859	
12	0911	
	0926	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 8, 2007
Survey Transect: D
Start time of survey: 0625 **Weather conditions:** Cloud cover 10-15 percent, foggy, no wind, and temperature in the mid 70's.

End time of survey: 0923 **Weather conditions:** Sunny skies with 10-15 percent cloud cover, winds south 0-5 mph, and temperature in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0625	Heard red-bellied woodpecker, mourning dove, Northern cardinal, barred owl, and red-shouldered hawk.
2	0638	Heard and observed Northern cardinal and red-bellied woodpecker. Heard mourning dove.
3	0650	Heard and observed blue-gray gnatcatcher. Heard Northern cardinal, red-bellied woodpecker, mourning dove. Observed great crested flycatcher.
4	0702	Heard Northern cardinal, red-bellied woodpecker, pileated woodpecker, mourning dove, blue-gray gnatcatcher, and great crested flycatcher.
5	0715	Heard Northern cardinal and mourning dove. Observed pileated woodpecker. Heard red-shouldered hawk and red-bellied woodpecker.
6	0728	Observed duck?? and pileated woodpecker. Heard mourning dove, red-bellied woodpecker, and Northern cardinal.
7	0740	Heard mourning dove and Northern cardinal. Heard and observed red-bellied woodpecker and blue-gray gnatcatcher.
8	0752	Heard and observed blue-gray gnatcatcher and Northern cardinal. Heard mourning dove and red-bellied woodpecker.
9	0805	Heard and observed mourning dove. Heard Northern cardinal. Observed black vulture. Heard red-bellied woodpecker.
10	0817	Heard and observed red-bellied woodpecker. Heard red-shouldered hawk and Northern cardinal.
11	0830	Heard and observed red-shouldered hawk and great crested flycatcher. Heard red-bellied woodpecker.

Station	Time	Field Notes
12	0843	Heard and observed red-bellied woodpecker. Heard blue-gray gnatcatcher, mourning dove, and Northern cardinal.
13	0855	Heard and observed red-shouldered hawk and Northern cardinal. Heard blue-gray gnatcatcher and red-bellied woodpecker.
14	0910	Heard and observed common ground dove, Northern cardinal, and red-bellied woodpecker. Heard red-shouldered hawk and mourning dove.
		End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 8, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Partly cloudy skies, light rain, no wind, and temperature in the mid 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy skies, winds east at 0-5 mph, and temperature in the mid 80's.

Observer: Shane Johnson

Station	Time	Field Notes
1	0630	Heard Carolina wren, mourning dove, Northern cardinal, and great crested flycatcher.
2	0640	Heard and observed red-shouldered hawk. Heard Northern cardinal, Carolina wren, and mourning dove.
3	0650	Heard Northern cardinal, red-bellied woodpecker, pileated woodpecker, and blue-gray gnatcatcher. Observed mourning dove.
4	0700	Heard white-eyed vireo, Northern cardinal, barred owl, and great crested flycatcher. Heard and observed pine warbler and downy woodpecker.
5	0710	Heard red-bellied woodpecker, Northern cardinal, and Carolina wren. Heard and observed downy woodpecker.
6	0720	Heard and observed Northern cardinal and Carolina wren. Heard mourning dove, downy woodpecker, and red-bellied woodpecker.
7	0730	Heard red-bellied woodpecker, blue-gray gnatcatcher, Carolina wren, white-eyed vireo, Northern cardinal, and mourning dove.
8	0740	Heard white-eyed vireo, red-bellied woodpecker, Northern cardinal, and pine warbler. Observed blue jay, spotted skunk, and gray squirrel.
9	0750	Heard red-shouldered hawk, white-eyed vireo, blue jay, blue-gray gnatcatcher, and red-bellied woodpecker.
10	0800	Observed Northern cardinal and white-eyed vireo. Heard mourning dove and red-bellied woodpecker.
11	0810	Heard mourning dove, white-eyed vireo, pileated woodpecker, and red-bellied woodpecker.
12	0820	Heard Carolina wren, blue-gray gnatcatcher, and mourning dove.

Station	Time	Field Notes
13	0830	Heard mourning dove, white-eyed vireo, blue-gray gnatcatcher, and red-bellied woodpecker.
14	0840	Heard and observed red-bellied woodpecker, Carolina wren, and Northern cardinal. Observed common ground dove and white-tailed deer.
15	0850	Heard mourning dove, Carolina wren, blue-gray gnatcatcher, and Northern cardinal.
16	0900	Heard white-eyed vireo, blue-gray gnatcatcher, great-crested flycatcher, red-bellied woodpecker, and Carolina wren.
17	0910	Heard pine warbler, mourning dove, red-bellied woodpecker, and Northern cardinal.
18	0920	Heard and observed Northern cardinal, Carolina wren, and mourning dove.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 8, 2007
Survey Transect: F
Start time of survey: 0630 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy/sunny skies, calm wind, and temperature in the low 80's.

Observer: David Anthony

Station	Time	Field Notes
1	0630	Heard Northern flicker to the northwest, and Carolina wren and Cuban tree frogs to the east.
2	0651	Heard red-bellied woodpecker to the south and pine warbler to the east.
3	0711	Heard white-eyed vireo and blue jay to the west, and pine warbler to the southwest.
4	0733	Heard blue jay to the north, Northern cardinal to the west, and Northern flicker to the southwest.
5	0753	Heard white-eyed vireo.
6	0812	Heard blue jay to the west.
7	0833	No wildlife heard or observed.
8	0854	Heard pine warbler to the west and red-bellied woodpecker to the north.
9	0916	Heard Northern flicker to the north and blue jay to the east.
	0930	End of survey. No red-cockaded woodpeckers were heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2007
Survey Transect: A
Start time of survey: 0620 **Weather conditions:** Clear skies, calm wind, and temperature in the low 70's and humid.

End time of survey: 0925 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the low 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0620	Heard red-shouldered hawk and white-eyed vireo. Observed mourning dove.
2	0635	Heard and observed fish crow, white-eyed vireo, and Northern cardinal. Observed loggerhead shrike.
3	0653	Observed mourning dove, opossum, and red-shouldered hawk. Heard Carolina wren and Eastern meadowlark.
4	0712	Heard and observed red-shouldered hawk, red-bellied woodpecker, common grackles, and great blue heron flying east.
5	0730	Heard white-eyed vireo and fish crow. Observed red-bellied woodpecker, mourning doves, ground doves, and blue-gray gnatcatcher.
6	0755	Heard and observed boat-tailed grackles and red-bellied woodpecker. Observed two sandhill cranes and two white ibis in wetland.
7	0817	Heard and observed Northern mockingbird, red-bellied woodpecker, boat-tailed grackle, mourning dove, and Eastern meadowlark.
8	0835	Observed pileated woodpecker, Florida box turtle, and red-bellied woodpecker. Heard Eastern towhee and white-eyed vireo.
9	0850	Observed cattle egret flying, Northern cardinal, pine warblers, red-bellied woodpeckers, and turkey vultures soaring.
10	0911	Heard red-shouldered hawk, fish crow, white-eyed vireo, and Eastern meadowlark. Observed red-bellied woodpeckers, ground doves, black racer, and boat-tailed grackles.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2007
Survey Transect: B
Start time of survey: 0632 **Weather conditions:** Partly cloudy, light fog, calm wind, and temperature in the mid 70's and humid.

End time of survey: 0933 **Weather conditions:** Partly cloudy, calm wind, and temperature in the low 80's and humid.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0632	Heard red-bellied woodpecker and green tree frog.
2	0646	Heard Eastern towhee, red-bellied woodpecker, common ground dove, and Northern cardinal. Observed common nighthawk.
3	0705	Heard red-bellied woodpecker, Northern cardinal, mourning dove, pine warbler, and downy woodpecker.
4	0719	Heard downy woodpecker and Northern cardinal. Observed marsh rabbit.
5	0734	Heard common ground dove, blue jay, Northern cardinal, downy woodpecker, and green tree frog.
6	0749	Heard downy woodpecker, Eastern towhee, and blue jay. Observed Northern cardinal.
7	0806	Heard blue-gray gnatcatcher. Heard downy woodpecker and red-bellied woodpecker.
8	0821	Heard Eastern meadowlark. Observed swallow-tail kite flying southeast, marsh rabbit, and Northern cardinal.
9	0843	Observed red-shouldered hawk, Northern cardinal, and downy woodpecker.
10	0900	Heard Northern cardinal and downy woodpecker.
11	0917	Heard Northern cardinal. Observed swallow-tail kite flying west.
	0933	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2007
Survey Transect: C
Start time of survey: 0624 **Weather conditions:** Partly cloudy, calm wind, and temperature in the low 70's.

End time of survey: 0930 **Weather conditions:** Cloudy, calm wind, and temperature in the mid 80's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0624	Heard and observed seven swallow-tail kites. Heard Northern cardinal and red-bellied woodpecker.
2	0635	Heard and observed swallow-tail kites. Heard Northern cardinal, Cuban tree frog, great-crested flycatcher, red-bellied woodpecker, and red-shouldered hawk.
3	0645	Heard and observed red-shouldered hawk. Observed swallow-tail kites. Heard blue-gray gnatcatcher, Northern cardinal, mourning dove, red-bellied woodpecker, and white-eyed vireo.
4	0656	Heard and observed red-bellied woodpecker. Observed swallow-tail kite. Heard Northern cardinal, red-shouldered hawk, green tree frog, and mourning dove.
5	0705	Heard and observed red-bellied woodpecker. Heard red-shouldered hawk and green tree frog.
6	0715	Heard and observed Northern cardinal. Observed cattle egrets flying. Heard red-bellied woodpecker, mourning dove, red-shouldered hawk, and green tree frog.
7	0729	Heard Northern cardinal, red-bellied woodpecker, common ground dove, and green tree frog.
8	0743	Observed swallow-tail kites. Heard Northern cardinal, red-bellied woodpecker, common ground dove, and green tree frog.
9	0800	Heard and observed great-crested flycatcher. Heard Northern cardinal, green tree frog, and mourning dove.
10	0818	Heard and observed swallow-tail kites. Observed common ground dove. Heard Northern cardinal and green tree frog.

Station	Time	Field Notes
11	0830	Heard and observed red-bellied woodpecker. Heard Northern cardinal, red-shouldered hawk, green tree frog, and swallow-tail kite.
12	0846	Heard and observed Northern cardinal, common grackle, and mourning dove. Heard red-bellied woodpecker and green tree frog.
13	0903	Observed common ground dove. Heard red-bellied woodpecker.
14	0915	Heard and observed red-bellied woodpecker. Heard Northern cardinal, blue-gray gnatcatcher, squirrel tree frog, and common ground dove.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2007
Survey Transect: D
Start time of survey: 0630 **Weather conditions:** Partly cloudy, calm wind, and temperature in the mid 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy, calm wind, and temperature in the low 80's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0630	Heard and observed mourning dove and Carolina wren to the west and Northern cardinal to the north. Heard red-bellied woodpecker to the east.
2	0647	Heard and observed three swallow-tail kites circling and calling overhead and one juvenile perched in pine. Heard mourning dove to the east, red-bellied woodpecker to the southeast, and Northern cardinal to the northwest.
3	0705	Heard and observed red-bellied woodpecker to the southeast. Heard Northern cardinal to the east, red-shouldered hawk to the northeast, great-crested flycatcher to the southeast, and Northern parula to the south.
4	0719	Heard Carolina wren and swallow-tail kite to the west, red-bellied woodpecker to the north, two red-shouldered hawks to the east, and Northern parula to the south.
5	0733	Heard Northern cardinal and mourning dove to the west, red-shouldered hawk to the southeast, Carolina wren to the east, red-bellied woodpecker to the northwest, and Northern parula to the north.
6	0755	Observed red-shouldered hawk perched overhead. Heard and observed Carolina wren to the south. Heard mourning dove and red-bellied woodpecker to the east, Northern cardinal to the west, and pileated woodpecker to the south.
7	0812	Heard red-bellied woodpecker to the south, Northern cardinal to the east, and Carolina wren to the southeast.

Station	Time	Field Notes
8	0844	Heard and observed downy woodpecker to the west. Heard Carolina wren to the east, red-bellied woodpecker to the west, red-shouldered hawk to the northeast, mourning dove to the southwest, and swallow-tail kite to the northwest.
9	0901	Heard and observed red-bellied woodpecker to the north. Heard pine warbler and swallow-tail kite to the northeast, mourning dove to the north, and downy woodpecker to the southwest.
10	0916	Heard and observed red-bellied woodpecker to the southeast. Heard Carolina wren to the south, mourning dove to the north, Northern parula to the southwest, and Northern cardinal to the west.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Partly cloudy, calm wind, and temperature in the mid 70's.

End time of survey: 0930 **Weather conditions:** Partly cloudy, calm wind, and temperature in the mid 80's.

Observer: Debbie Tyson

Station	Time	Field Notes
1	0630	Heard and observed Northern cardinal. Heard red-bellied woodpecker.
2	0645	Heard red-bellied woodpecker, mourning dove, and Northern cardinal.
3	0710	Heard and observed Northern cardinal. Observed hog sign (rooting). Heard blue jay, red-shouldered hawk, and white-eyed vireo.
4	0725	Heard Northern cardinal, mourning dove, and blue-gray gnatcatcher.
5	0745	Heard and observed ground dove. Heard mourning dove, downy woodpecker, white-eyed vireo, and red-bellied woodpecker.
6	0800	Observed Northern cardinal. Heard blue-gray gnatcatcher, downy woodpecker, and red-bellied woodpecker.
7	0820	Heard red-bellied woodpecker, blue-gray gnatcatcher, mourning dove, and white-eyed vireo.
8	0835	Observed turkey vulture. Heard blue jay, mourning dove, and red-shouldered hawk.
9	0855	Observed Carolina wren. Heard Northern cardinal.
10	0910	Heard Carolina wren and red-shouldered hawk.
11	0920	Heard red-bellied woodpecker and pileated woodpecker.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2007
Survey Transect: F
Start time of survey: 0630 **Weather conditions:** Foggy, calm wind, and temperature in the mid 70's and humid.

End time of survey: 0940 **Weather conditions:** Partly cloudy, calm wind, and temperature in the low 80's and humid.

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard Northern cardinal and Carolina wren.
2	0650	Heard Northern cardinal, ground dove, and mourning dove.
3	0815	Observed swallow-tail kite. Heard mourning dove.
4	0840	Observed great-crested flycatcher. Heard pine warbler.
5	0900	Observed turkey and ground dove. Heard white-eyed vireo.
6	0920	Heard red-bellied woodpecker and Northern cardinal.
7	0940	Heard downy woodpecker and red-shouldered hawk.
	0940	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2007
Survey Transect: A
Start time of survey: 0625 **Weather conditions:** Partly cloudy skies, calm wind, and temperature around 70°.

End time of survey: 0920 **Weather conditions:** Partly cloudy skies, winds 0-5 mph, and temperature in the low 80's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0625	Heard Eastern meadowlark, mourning dove, Northern mockingbird, and cattle.
2	0640	Heard common grackle, Eastern meadowlark, red-bellied woodpecker, and Northern cardinal. Heard and observed mourning dove.
3	0700	Heard Eastern meadowlark, mourning dove, and Northern cardinal.
4	0725	Heard cattle. Heard and observed common nighthawk, mourning dove, Eastern meadowlark, and boat-tailed grackle. Heard and observed Northern cardinal and Eastern towhee.
5	0740	Heard red-bellied woodpecker, common ground dove, common grackle, and Eastern meadowlark.
6	0800	Heard Eastern meadowlark, red-shouldered hawk in distance, pileated woodpecker, red-bellied woodpecker, Carolina wren, and Northern cardinal.
7	0820	Heard and observed red-bellied woodpecker and downy woodpecker.
8	0830	Heard Carolina wren, Northern cardinal, and red-bellied woodpecker. Heard and observed downy woodpecker. Observed a cow lying under palmetto.
9	0845	Heard rooster to the west. Heard Northern cardinal. Heard and observed common grackle.
10	0900	Heard red-bellied woodpecker and Eastern meadowlark. Heard and observed Eastern towhee and blue jay.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2007
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the mid 70's.

End time of survey: 0930 **Weather conditions:** Mostly cloudy skies, calm wind, and temperature in the high 80's.

Observer: David Anthony

Station	Time	Field Notes
1	0630	Heard Northern cardinal to the northwest, Northern flicker to the southeast, mourning dove to the east, and red-shouldered hawk to the north.
2	0650	Heard red-shouldered hawk to the southeast, pine warbler to the northeast, blue-gray gnatcatcher to the east, and Northern cardinal to the southwest.
3	0711	Observed mourning dove in pine tree to the north. Heard red-bellied woodpecker to the north, common ground dove to the south, and Northern cardinal to the west.
4	0730	Heard and observed red-bellied woodpecker fly to the north. Heard blue-gray gnatcatcher to the north.
5	0758	Heard white-eyed vireo to the north, pine warbler to the south, and Northern flicker to the west.
6	0816	Heard Northern cardinal to the southeast.
7	0838	Heard blue-gray gnatcatcher to the south.
8	0857	Heard Northern cardinal and Northern flicker to the east.
9	0920	Heard Northern cardinal and blue-gray gnatcatcher to the south, pine warbler to the north, and Northern flicker to the northeast.
	0930	End of survey. No red-cockaded woodpecker were heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2007
Survey Transect: C
Start time of survey: 0625 **Weather conditions:** Clear skies, calm wind, and temperature in the low 70's and humid.

End time of survey: 0940 **Weather conditions:** Partly cloudy, wind 0-5 mph, and temperature in the low 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0625	Heard and observed red-shouldered hawk, two swallow-tail kites perched, and ground doves.
2	0644	Heard and observed swallow-tail kite, red-bellied woodpecker, and mourning doves. Heard chuck-wills-widow.
3	0705	Observed red-shouldered hawk perched, swallow-tail kite flying, red-bellied woodpecker, and rabbit. Heard pileated woodpecker and white-eyed vireo.
4	0727	Observed Northern mockingbird and pine warblers. Heard white-eyed vireo, fish crow, Northern cardinal, and red-shouldered hawk.
5	0750	Observed gray squirrel and three white-tailed deer. Heard and observed red-bellied woodpecker and downy woodpecker.
6	0816	Heard and observed pileated woodpecker, three swallow-tail kites flying, red-bellied woodpecker, boat-tailed grackles, and white ibis flying. Heard Cuban tree frog and white-eyed vireo.
7	0832	Observed Northern cardinal, brown thrasher, turkey vultures soaring, and gray squirrel.
8	0851	Observed red-bellied woodpecker, pileated woodpecker, mourning doves, and great-crested flycatcher. Heard white-eyed vireo.
9	0913	Observed two white-tailed deer (doe and young buck) and swallow-tail kite perched. Heard red-shouldered hawk and Northern mockingbird.
10	0930	Heard and observed red-shouldered hawk, blue jay, common grackles, and great egret flying.
	0940	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2007
Survey Transect: D
Start time of survey: 0637 **Weather conditions:** Clear skies, no wind, and a temperature of 69°F.

End time of survey: 0935 **Weather conditions:** Partly sunny, calm winds, and a temperature of 82°F.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0637	Heard red-shouldered hawk, mourning dove, red-bellied woodpecker, Northern cardinal, Carolina wren, and pileated woodpecker. Observed pileated woodpecker flying east and mourning dove.
2	0705	Heard blue-gray gnatcatcher, red-bellied woodpecker, mourning dove, downy woodpecker, great crested flycatcher, wild turkey, red-shouldered hawk, and pileated woodpecker. Observed blue-gray gnatcatcher, great crested flycatcher, wild turkey, and red-shouldered hawk.
3	0734	Heard Carolina wren, ground dove, blue-gray gnatcatcher, red-bellied woodpecker, mourning dove, and downy woodpecker. Observed red-bellied woodpecker foraging on live pines and downy woodpecker flying north.
4	0806	Heard downy woodpecker, mourning dove, Carolina wren, blue-gray gnatcatcher, red-bellied woodpecker, and pine warbler. Observed mourning dove, Carolina wren, and pine warbler.
5	0847	Heard red-shouldered hawk, great crested flycatcher, Carolina wren, mourning dove, red-bellied woodpecker, pileated woodpecker, blue jay, and downy woodpecker. Observed red-shouldered hawk, mourning dove, and downy woodpecker fly west.
6	0915	Heard Northern cardinal, Carolina wren, blue jay, red-bellied woodpecker, blue-gray gnatcatcher, and red-shouldered hawk. Observed Northern cardinal, red-bellied woodpecker foraging on pine snag, and blue-gray gnatcatcher chasing red-shouldered hawk.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2007
Survey Transect: E
Start time of survey: 0630 **Weather conditions:** Partly cloudy, no wind, and temperature in the upper 70's to low 80's.

End time of survey: 0930 **Weather conditions:** Mostly clear skies, no wind, and temperature in the upper 80's.

Observer: Mike Myers

Station	Time	Field Notes
1	0630	Heard mourning dove to the northwest and red-bellied woodpecker to the north and east.
2	0645	Heard Carolina wren to the east and mourning dove to the southwest.
3	0700	Heard and observed pine warbler foraging in pine to the west, common grackle fly to the west, and Northern cardinal to the north. Observed blue-gray gnatcatcher in dahoon holly to the west. Heard red-bellied woodpecker to the north and south.
4	0725	Heard and observed two immature red-shouldered hawks to the north, one perched in Brazilian pepper and the other feeding off ground. Heard Carolina wren to the north, Northern cardinal to the west, and red-bellied woodpecker to the southwest.
5	0745	Heard red-shouldered hawk to the southeast, red-bellied woodpecker to the east, great-crested flycatcher to the north.
6	0805	Observed six black vultures and one turkey vulture perched in pine snags to the south, and two Northern cardinals fly to the west.
7	0820	Observed rabbit foraging in trail to the west. Heard red-shouldered hawk to the south.
8	0845	Observed mourning dove perched in pine snag to the west. Heard red-bellied woodpeckers to the north and south and Northern cardinal and mourning dove to the north.
9	0900	Heard mourning doves to the southeast.
10	0915	Heard and observed mourning dove to the south and two fly to the west. Heard Carolina wren to the east, red-bellied woodpecker to the west, and pileated woodpecker to the south.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2007
Survey Transect: F
Start time of survey: 0625 **Weather conditions:** Partly cloudy, calm wind, and temperature in the mid 70's and humid.

End time of survey: 0930 **Weather conditions:** Partly cloudy, calm wind, and temperature in the low 80's and humid.

Observer: William R. Cox

Station	Time	Field Notes
1	0625	Observed ground doves. Heard Northern cardinal.
2	0650	Observed blue jay and white-eyed vireo. Heard Carolina wren.
3	0815	Observed red-bellied woodpecker, blue jay, and Northern cardinal.
4	0830	Observed mourning dove. Heard Carolina wren and common yellowthroat.
5	0850	Observed ground doves and turkey. Heard blue jay.
6	0910	Observed downy woodpecker. Heard blue-gray gnatcatcher.
7	0930	Observed swallow-tail kite, red-bellied woodpecker, and Northern cardinal. Heard downy woodpecker.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2007
Survey Transect: A
Start time of survey: 0639 **Weather conditions:** Mostly cloudy skies, calm wind, and temperature in the mid 70's.

End time of survey: 0920 **Weather conditions:** Cloudy/hazy skies, light wind 0-5 mph, and temperature in the upper 70's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0639	Heard Eastern meadowlark, Northern mockingbird, Northern bobwhite, pine warbler, and brown-headed nuthatch.
2	0656	Heard Northern cardinal, red-bellied woodpecker, blue jay, and Eastern meadowlark.
3	0716	Heard red-bellied woodpecker and Eastern meadowlark.
4	0732	Observed downy woodpecker, Northern mockingbird, and loggerhead shrike.
5	0746	Heard red-bellied woodpecker, pine warbler, and common grackle. Observed Northern cardinal.
6	0804	Heard Northern cardinal. Observed red-shouldered hawk and blue jay.
7	0818	Heard blue-gray gnatcatcher and Eastern towhee. Observed red-shouldered hawk.
8	0834	Heard downy woodpecker. Observed Northern cardinal, red-bellied woodpecker, and mourning dove.
9	0848	Heard red-bellied woodpecker, mourning dove, and Northern cardinal.
10	0905	Heard white-eyed vireo and Carolina wren. Observed blue jay and Northern cardinal.
	0920	End of survey. No red-cockaded woodpeckers were heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2007
Survey Transect: B
Start time of survey: 0629 **Weather conditions:** Clear skies, calm wind, and temperature in the mid 70's.

End time of survey: 0918 **Weather conditions:** Overcast, calm winds, and temperature in the low 80's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0629	Heard Northern cardinal, mourning dove, white-eyed vireo, and red-shouldered hawk.
2	0640	Heard Northern cardinal, mourning dove, blue-gray gnatcatcher, white-eyed vireo, red-bellied woodpecker, and green tree frog.
3	0652	Heard Northern cardinal, white-eyed vireo, common ground dove, and mourning dove.
4	0705	Observed common ground dove. Heard and observed Northern cardinal, blue-gray gnatcatcher, common grackle, and Carolina wren. Heard white-eyed vireo, red-bellied woodpecker, and green tree frog.
5	0723	Heard and observed Northern cardinal. Heard downy woodpecker and green tree frog.
6	0735	Heard and observed downy woodpecker and gray squirrel. Heard Northern cardinal and green tree frog.
7	0745	Heard and observed downy woodpecker. Heard mourning dove and green tree frog.
8	0755	Heard and observed red-bellied woodpecker, Northern cardinal, and downy woodpecker. Heard mourning dove, green tree frog, and Cuban tree frog.
9	0815	Observed common ground dove. Heard Northern cardinal, green tree frog, and Northern parula.
10	0826	Heard and observed common grackle. Heard Northern cardinal, Northern parula, red-bellied woodpecker, red-shouldered hawk, swallow-tail kite, and green tree frog.

Station	Time	Field Notes
11	0840	Observed swallow-tail kites. Heard Northern cardinal, Northern parula, and green tree frog.
12	0850	Heard Northern cardinal, green tree frog, mourning dove, red-bellied woodpecker, and blue-gray gnatcatcher.
13	0904	Heard Northern cardinal, red-shouldered hawks, swallow-tail kites, and green tree frog. Heard and observed downy woodpecker.
	0918	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2007
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Mostly cloudy, calm winds, and temperatures in the low 70's.

End time of survey: 0925 **Weather conditions:** Mostly cloudy, slight breeze, and temperatures in the low 80's.

Observer: Doug Holt

Station	Time	Field Notes
1	0630	Heard Northern cardinal, fish crow, and red-shouldered hawk. Observed brown thrasher perched on saw palmetto.
2	0645	Heard pileated woodpecker, red-bellied woodpecker, and Northern cardinal.
3	0700	Heard red-shouldered hawk, American crow, swallow-tailed kite, and Northern cardinal.
4	0715	Heard Eastern meadowlark, mourning dove, and red-shouldered hawk.
5	0730	Heard Northern cardinal and mourning dove. Observed turkey vulture overhead.
6	0745	Heard mourning dove, Northern mockingbird, Eastern towhee, and Northern bobwhite.
7	0800	Heard Northern flicker, pileated woodpecker, and mourning dove.
8	0815	Heard red-shouldered hawk and common grackle. Observed swallow-tailed kite perched in pine snag.
9	0830	Heard common grackle, red-shouldered hawk, Eastern towhee, and fish crow.
10	0845	Heard red-bellied woodpecker, Northern cardinal, and mourning dove.
11	0900	Heard mourning dove and red-shouldered hawk. Observed swallow-tailed kite soaring overhead.
12	0915	Heard red-bellied woodpecker, mourning dove, and Northern mockingbird.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2007
Survey Transect: D
Start time of survey: 0630 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the low 70's.

End time of survey: 0938 **Weather conditions:** Partly cloudy/sunny skies, no wind, and temperature in the high 70's.

Observer: David Anthony

Station	Time	Field Notes
1	0630	Heard and observed downy woodpecker on pine tree to the southeast and Northern flicker on slash pine to the northwest. Heard mourning dove to the southwest, pine warbler and Northern flicker to the east, and Northern cardinal to the northeast.
2	0652	Heard and observed Northern cardinal on cabbage palm to the south. Heard red-bellied woodpecker to the east and Northern flicker to the northeast.
3	0717	Heard mourning dove to the west, downy woodpecker to the southwest, blue jay to the southeast, and Carolina wren to the north.
4	0738	Heard Northern cardinal to the west and red-shouldered hawk to the northeast.
5	0800	Observed ducks flying southeast. Heard Northern flicker to the south.
6	0820	Heard red-shouldered hawk to the east and Cuban tree frogs and pine warbler to the south.
7	0843	Heard blue jay to the southeast and Northern flicker to the east.
8	0908	Heard mourning dove to the east and blue jay to the north.
9	0928	Heard Northern cardinal to the north and Northern flicker to the south.
	0938	End of survey. No red-cockaded woodpeckers were heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2007
Survey Transect: E
Start time of survey: 0620 **Weather conditions:** Mostly clear skies, no wind, and temperature in the high 60's.

End time of survey: 0930 **Weather conditions:** Mostly clear skies, variable wind 0-5 mph, and temperature in the mid 80's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0620	Heard downy woodpecker, Northern cardinal, and mourning dove. Observed great-crested flycatcher and white-tailed deer (mother and fawn).
2	0645	Heard Carolina wren and Northern cardinal. Heard and observed red-bellied woodpeckers foraging on live pines, pileated woodpecker fly to the east, and downy woodpecker fly to the southeast.
3	0712	Heard Carolina wren, Northern cardinal, and pileated woodpecker. Heard and observed downy woodpecker foraging on pines.
4	0743	Heard and observed Carolina wren, great-crested flycatcher, and Northern cardinal. Heard red-bellied woodpecker, downy woodpecker, blue jay, and pileated woodpecker.
5	0808	Heard and observed red-bellied woodpecker foraging on pine snag. Heard Carolina wren.
6	0851	Heard and observed Carolina wren, great-crested flycatcher, and red-bellied woodpecker fly to the west. Heard downy woodpecker, white-eyed vireo, and blue-gray gnatcatcher.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2007
Survey Transect: F
Start time of survey: 0620 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the mid 70's and humid.

End time of survey: 0940 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the low 80's and humid.

Observer: William R. Cox

Station	Time	Field Notes
1	0620	Heard Northern cardinal.
2	0640	Heard Carolina wren. Observed blue jay.
3	0700	Heard downy woodpecker. Observed Northern cardinal.
4	0725	Heard red-bellied woodpecker and common yellow-throat.
5	0750	Heard Carolina wren. Observed downy woodpecker.
6	0820	Heard blue-gray gnatcatcher and American crow. Observed Carolina wren and Northern cardinal.
7	0900	Heard red-bellied woodpecker and Northern cardinal.
8	0940	Observed American crow, swallow-tail kite, and blue jay.
	0940	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 14, 2007
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Heavy fog, calm wind, and temperature in the high 60's.

End time of survey: 0930 **Weather conditions:** Partly cloudy skies, wind 0-5 mph southeast, and temperature in the mid 70's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0630	Heard and observed Northern mockingbird to the east and downy woodpecker to the northwest. Heard Eastern meadowlark to the east, red-bellied woodpecker to the northwest, and mourning dove to the southeast.
2	0653	Heard and observed boat-tail grackles to the northeast. Heard mourning dove to the north, Eastern meadowlark to the northeast, and Northern mockingbird to the east.
3	0712	Heard and observed mourning dove to the southwest, red-bellied woodpecker to the northeast, and downy woodpecker to the east. Heard Eastern meadowlark and Northern mockingbird to the west, and common ground dove and Northern cardinal to the south.
4	0730	Heard and observed mourning dove to the west and common grackle overhead. Heard Eastern meadowlark to the northeast and Northern mockingbird to the northwest.
5	0748	Heard and observed red-bellied woodpecker to the east and Northern cardinal to the northeast. Heard mourning dove to the northeast, and Northern mockingbird and Eastern meadowlark to the east.
6	0804	Heard Eastern meadowlark to the east, Northern cardinal to the northwest, Northern mockingbird to the south, and downy woodpecker to the southeast.
7	0820	Observed great egret and great blue heron to the west. Heard Carolina wren, Northern cardinal, and Northern mockingbird to the north, mourning dove to the west, red-bellied woodpecker to the south, and Eastern meadowlark to the northeast.

Station	Time	Field Notes
8	0838	Observed great blue heron and great egret to the north. Heard mourning dove to the southwest, Eastern meadowlark to the northeast, Northern mockingbird to the west, and Northern cardinal and red-bellied woodpecker to the northwest.
9	0857	Heard and observed mourning dove to the south. Heard Northern cardinal to the north, Northern mockingbird to the east, and downy woodpecker to the south.
10	0915	Heard and observed Carolina wren to the west. Heard Northern mockingbird, red-bellied woodpecker, and blue jay to the north, Northern cardinal to the east, Eastern meadowlark to the southeast, common grackle to the northeast, and downy woodpecker to the northwest.
	0930	End of survey. No red-cockaded woodpeckers were heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 14, 2007
Survey Transect: E
Start time of survey: 0620 **Weather conditions:** Mostly cloudy skies, foggy, calm wind, and temperature in the low 70's and humid.

End time of survey: 0940 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the high 70's and humid.

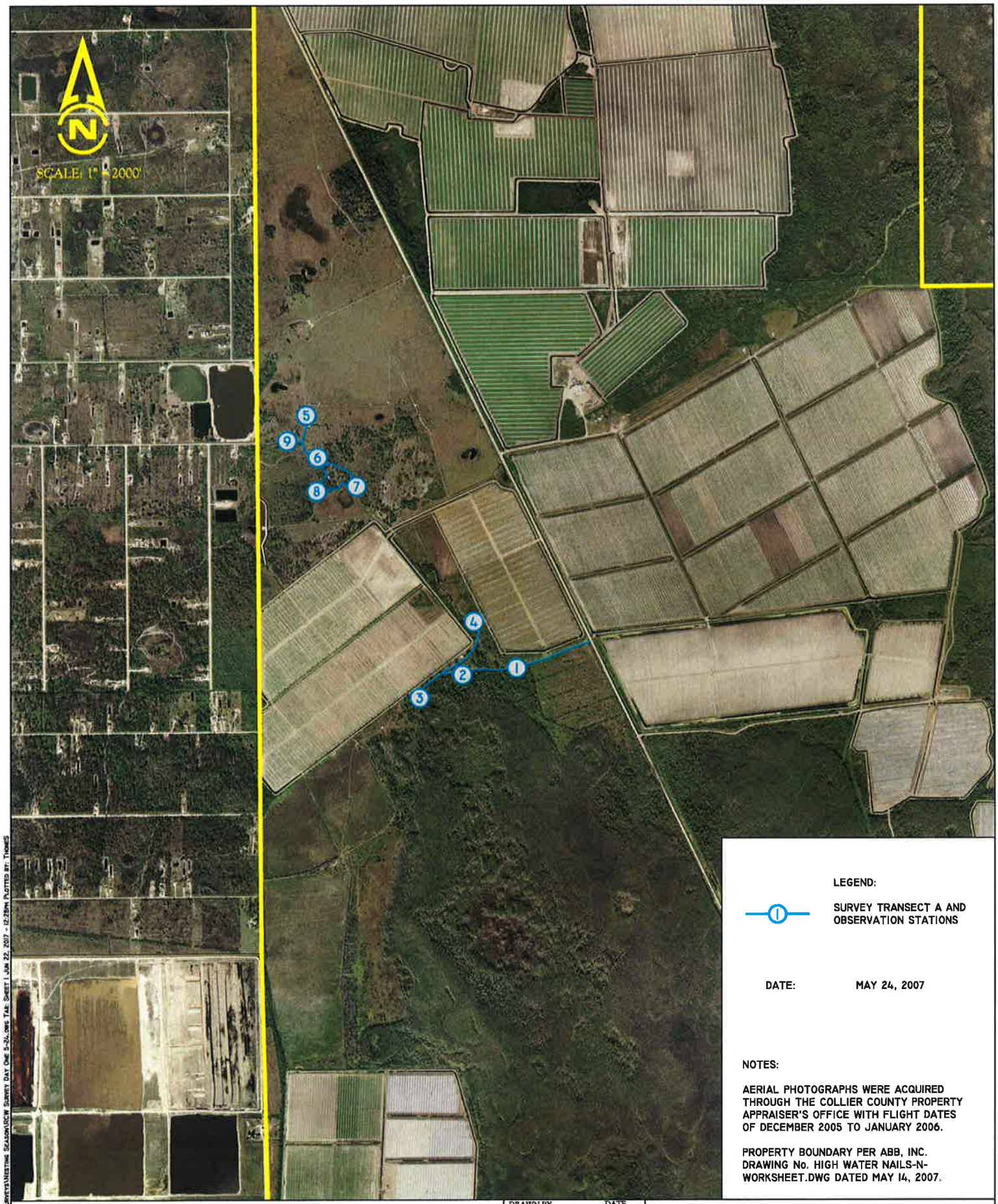
Observer: William R. Cox

Station	Time	Field Notes
1	0620	Heard Northern cardinal and Carolina wren.
4	0640	Heard Northern cardinal. Observed ground dove.
6	0700	Heard Carolina wren. Observed great-crested flycatcher.
8	0725	Observed mourning dove and blue-gray gnatcatcher.
9	0755	Observed red-bellied woodpecker and turkey.
10	0815	Heard great-crested flycatcher and downy woodpecker.
11	0855	Heard Northern cardinal. Observed ground doves and red-shouldered hawk.
12	0940	Observed downy woodpecker and red-bellied woodpecker.
	0940	End of survey. No red-cockaded woodpeckers were heard or observed during this survey.
		Green and squirrel tree frogs heard vocalizing throughout survey.

Note: Observations are summarized for time period noted.

APPENDIX B

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY MAPS WITH STATION NUMBERS



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: MAY 24, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

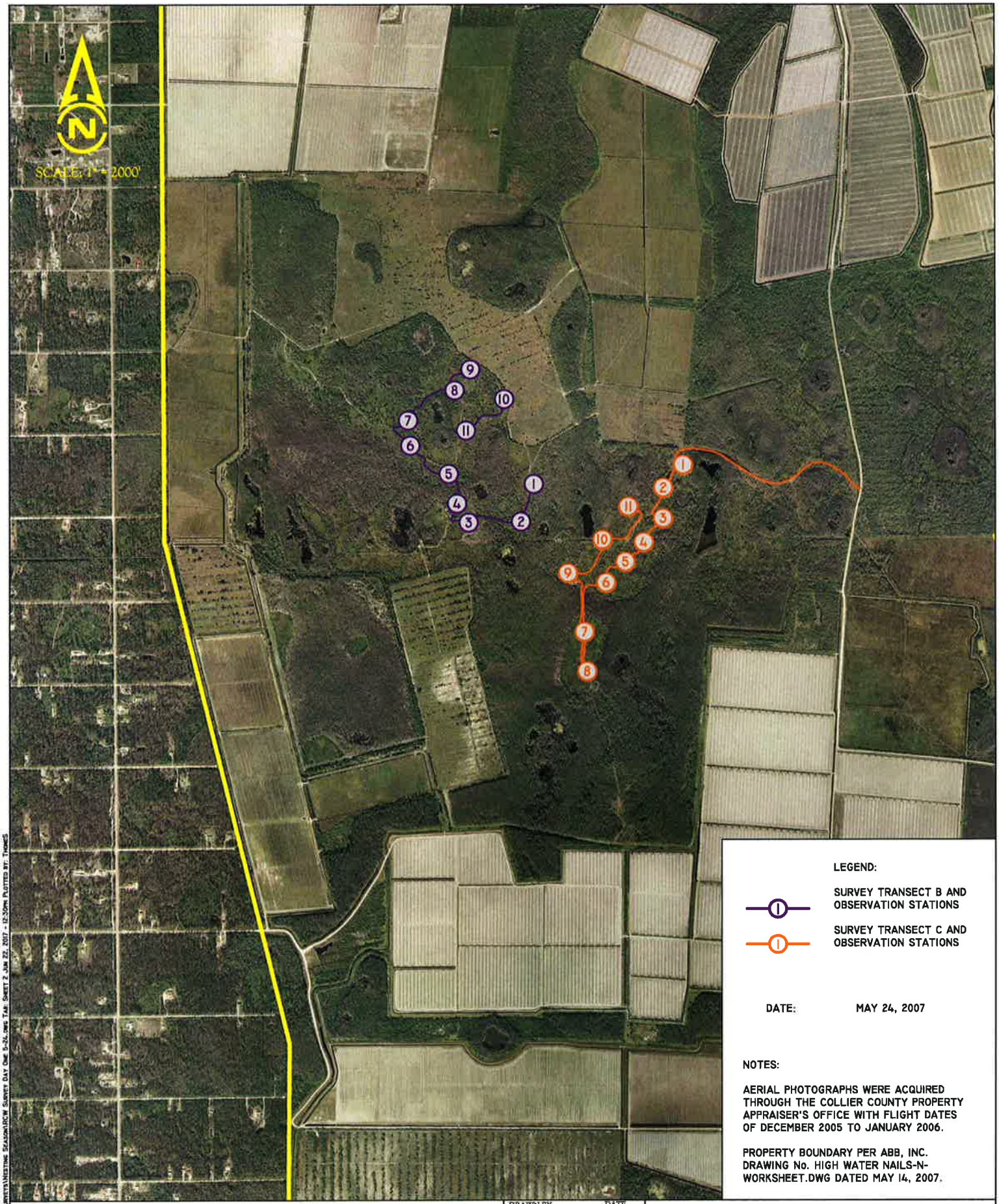
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05czm\&1\RCW Surveys\NESTING SEASON\RCW SURVEY DAY ONE 5-24.DWG TAB: SHEET1 JUN 22, 2007 - 12:28PM PLOTTED BY: THOMAS



RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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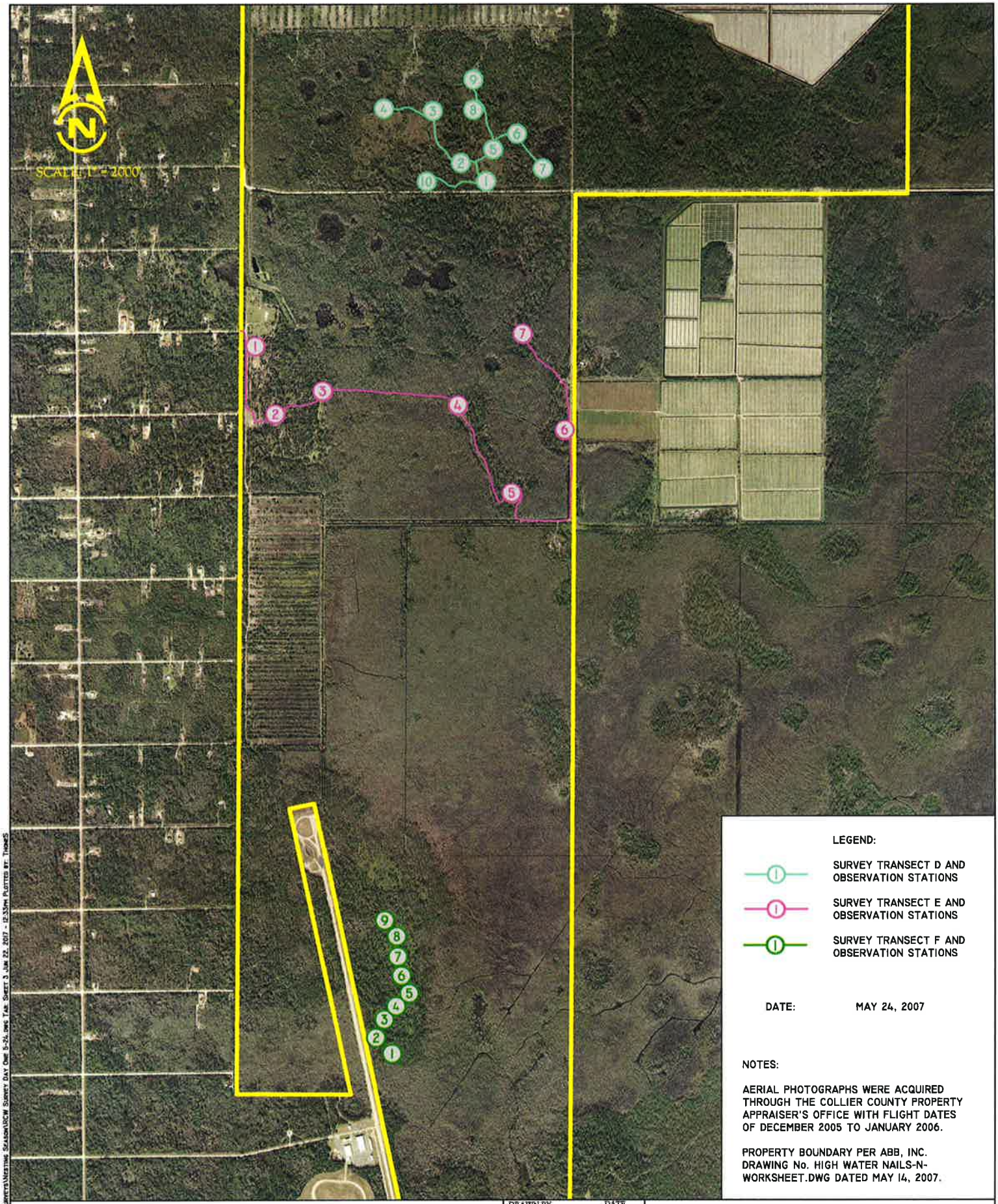

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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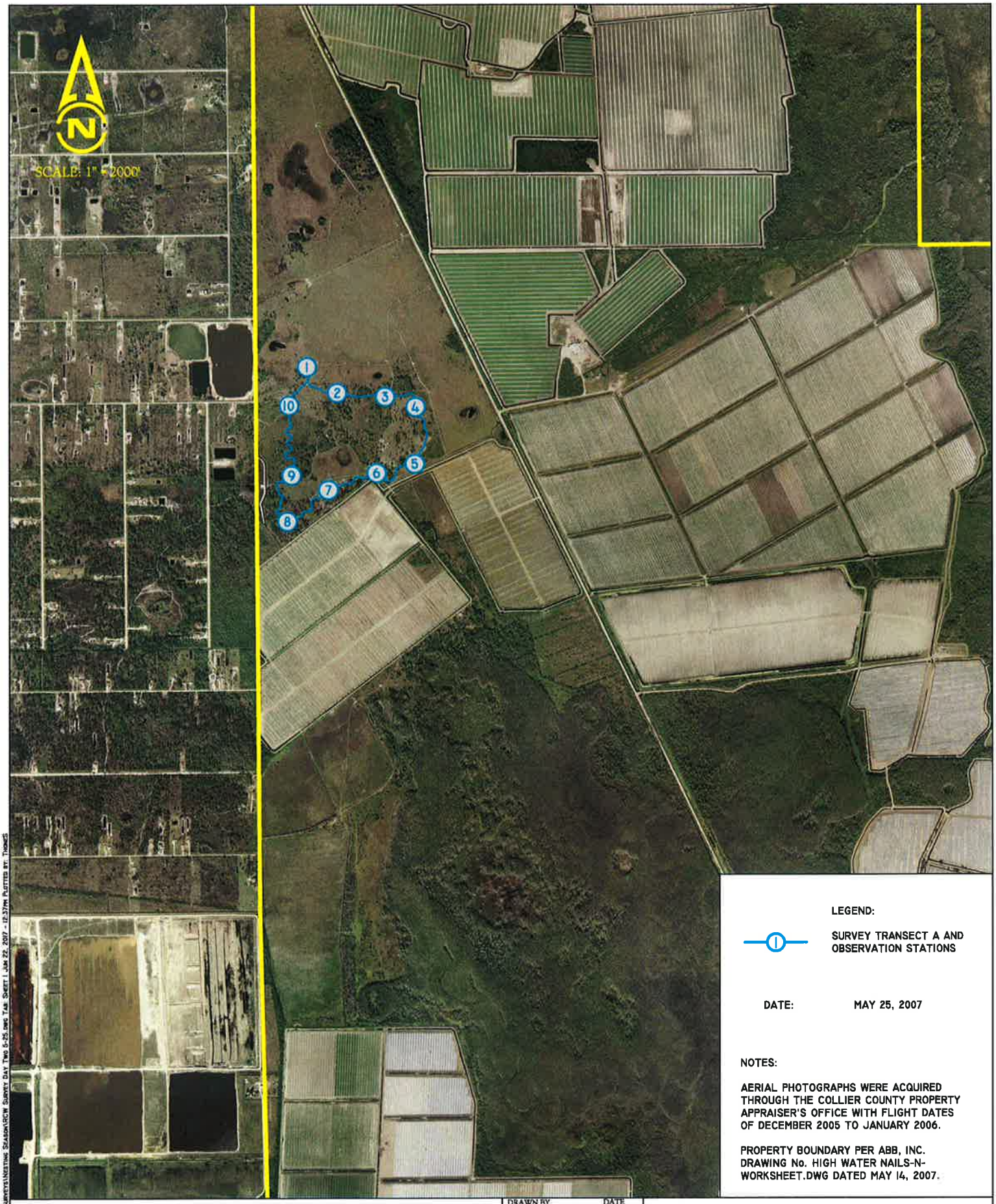

LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: MAY 25, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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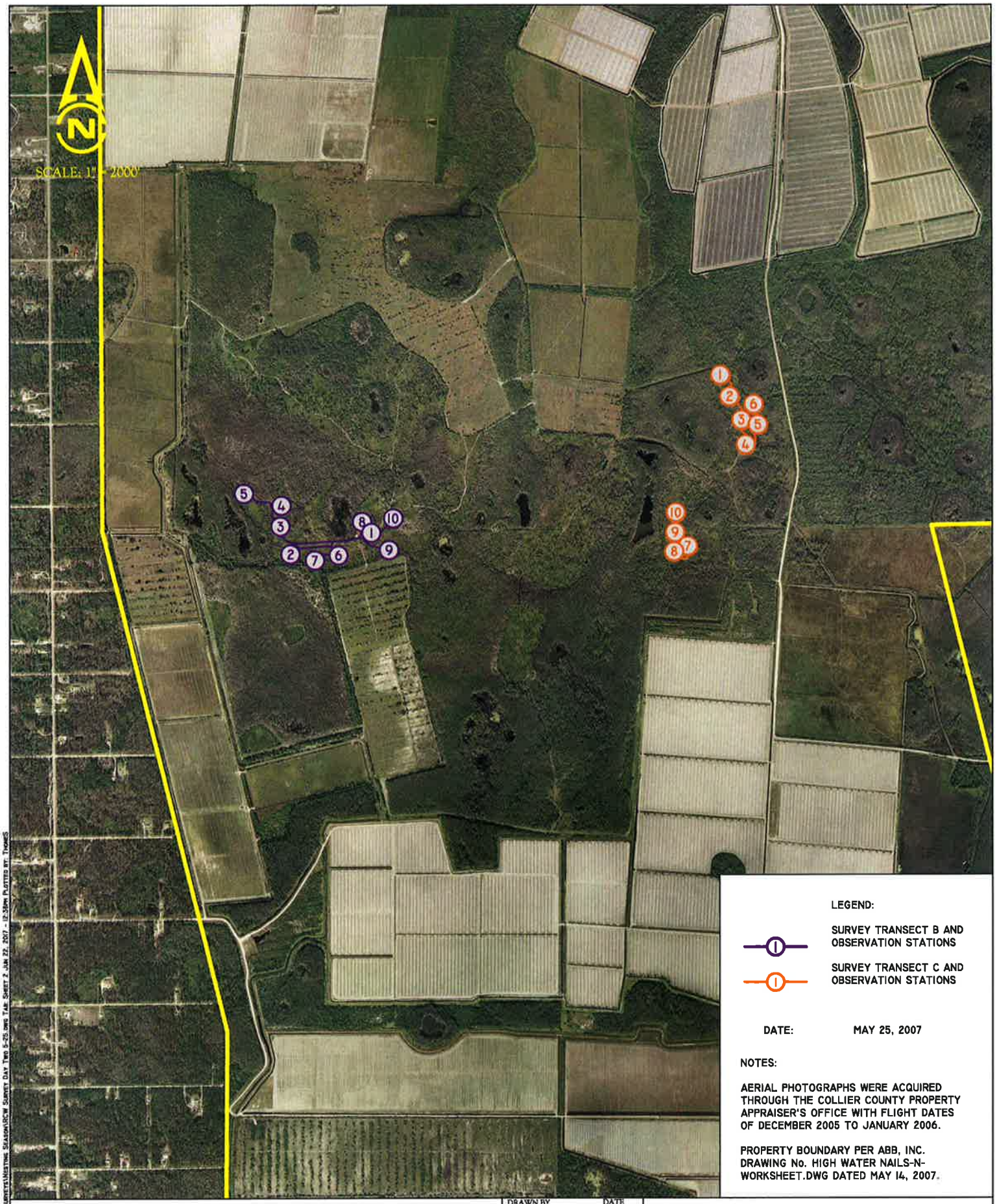

LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: MAY 25, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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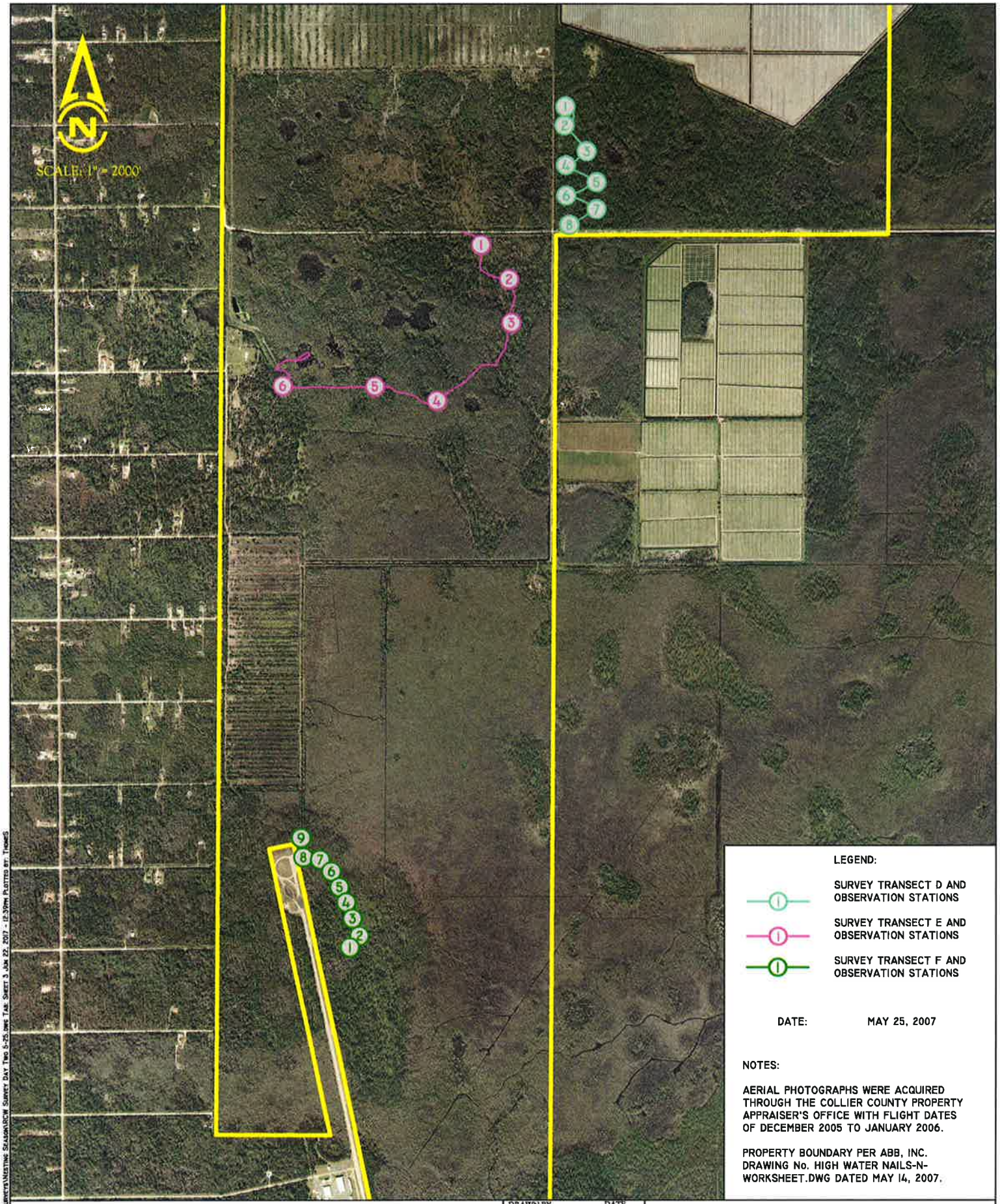

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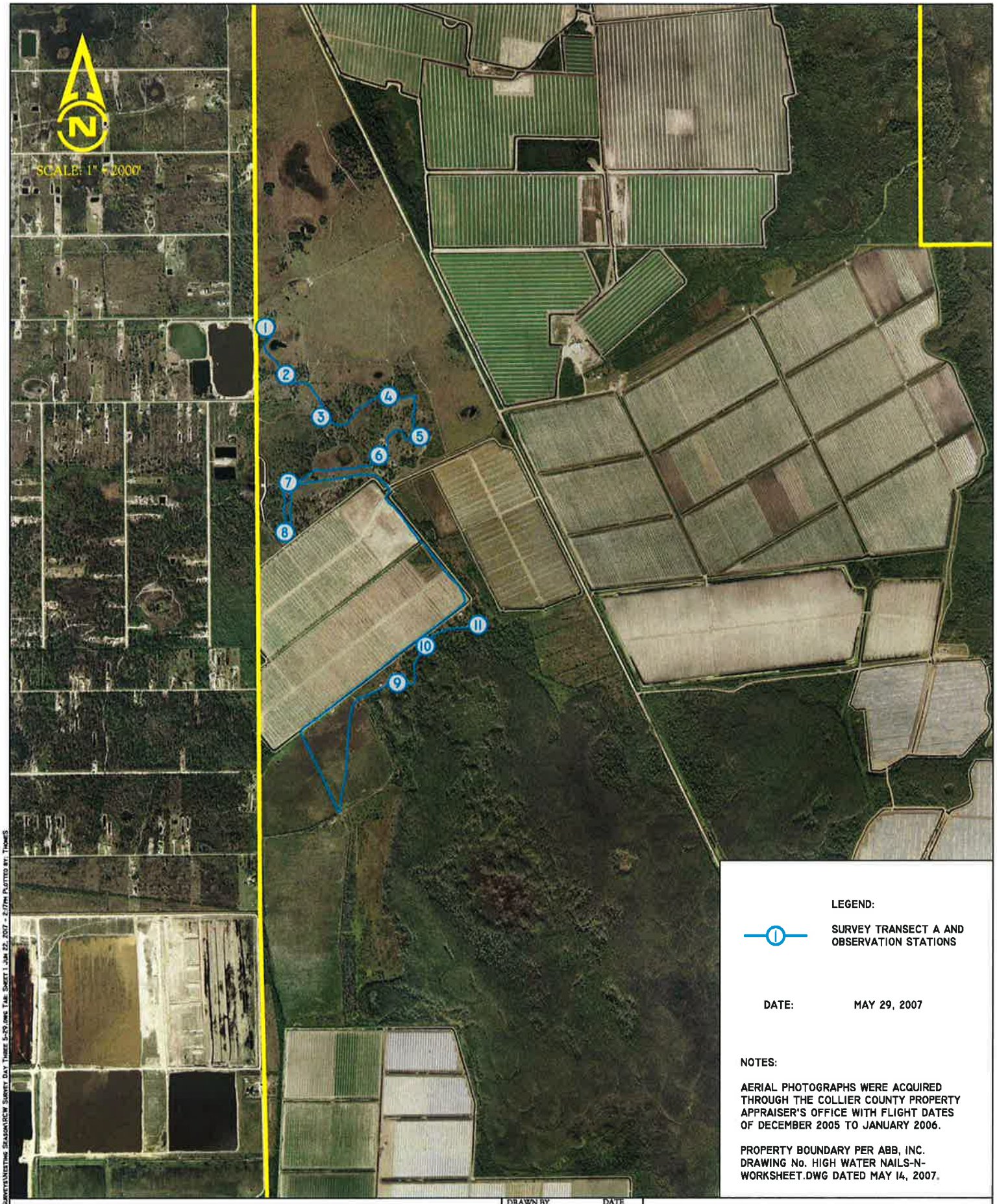
RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: MAY 29, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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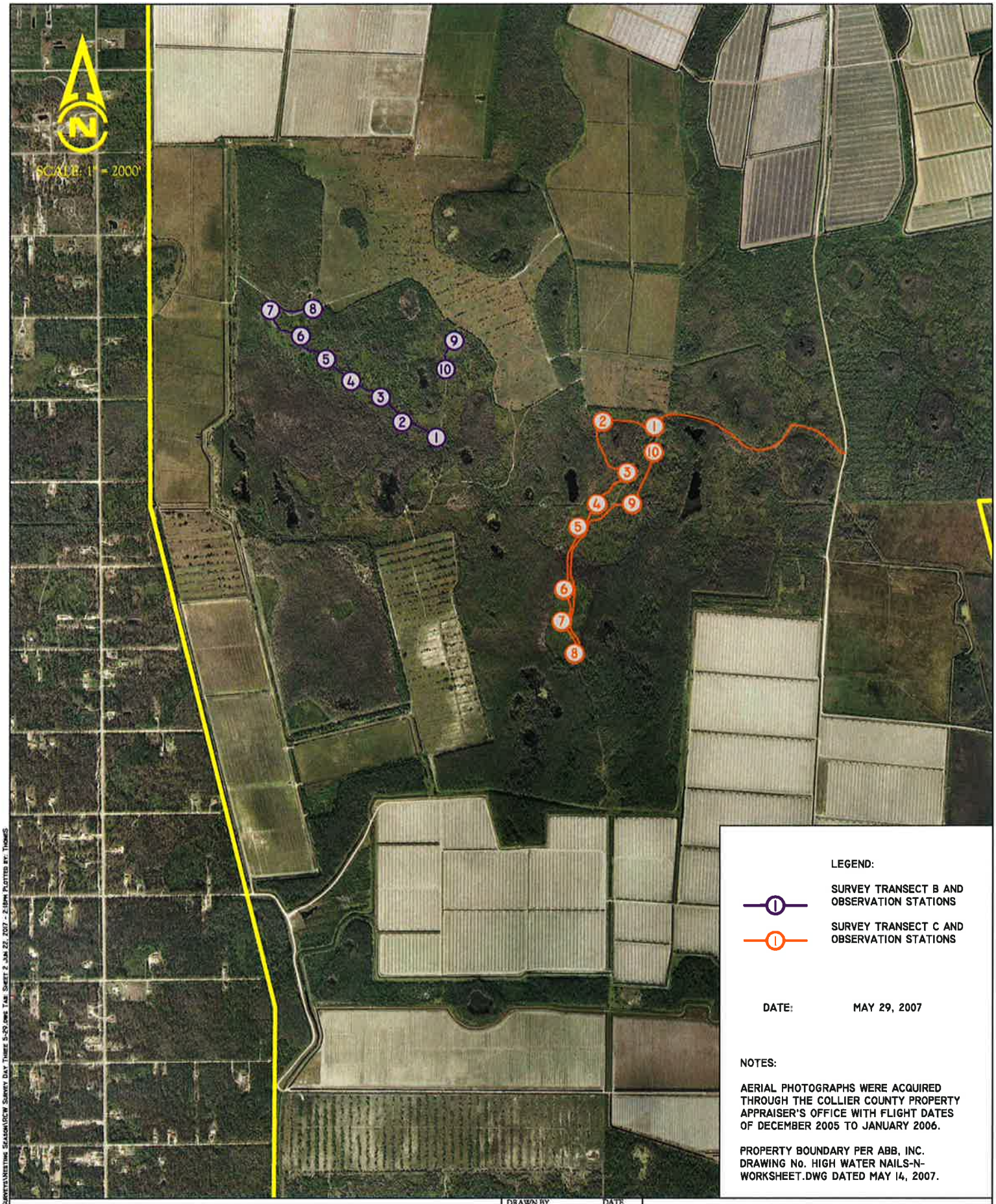

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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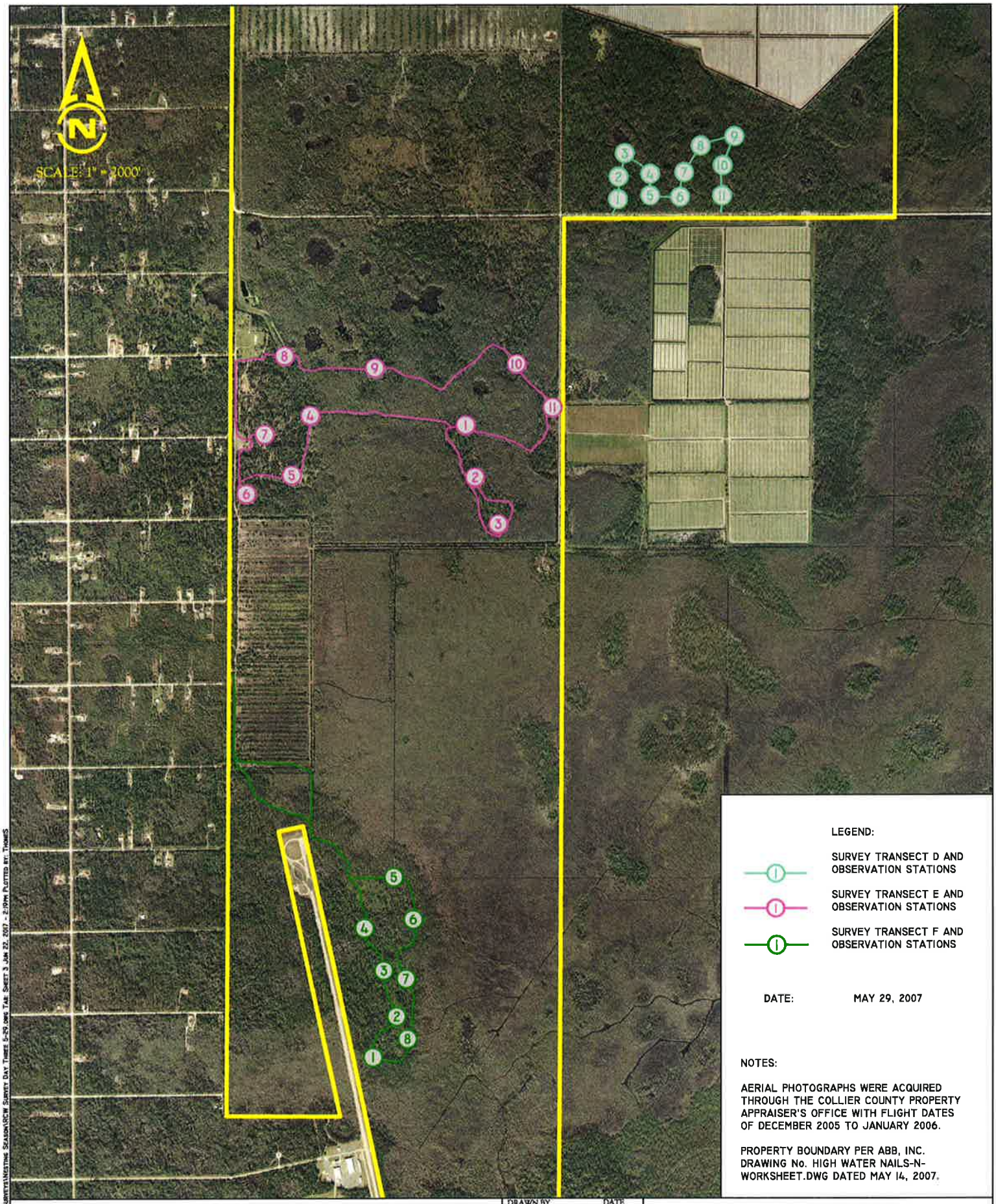

RED-COCKADED WOODPECKER
NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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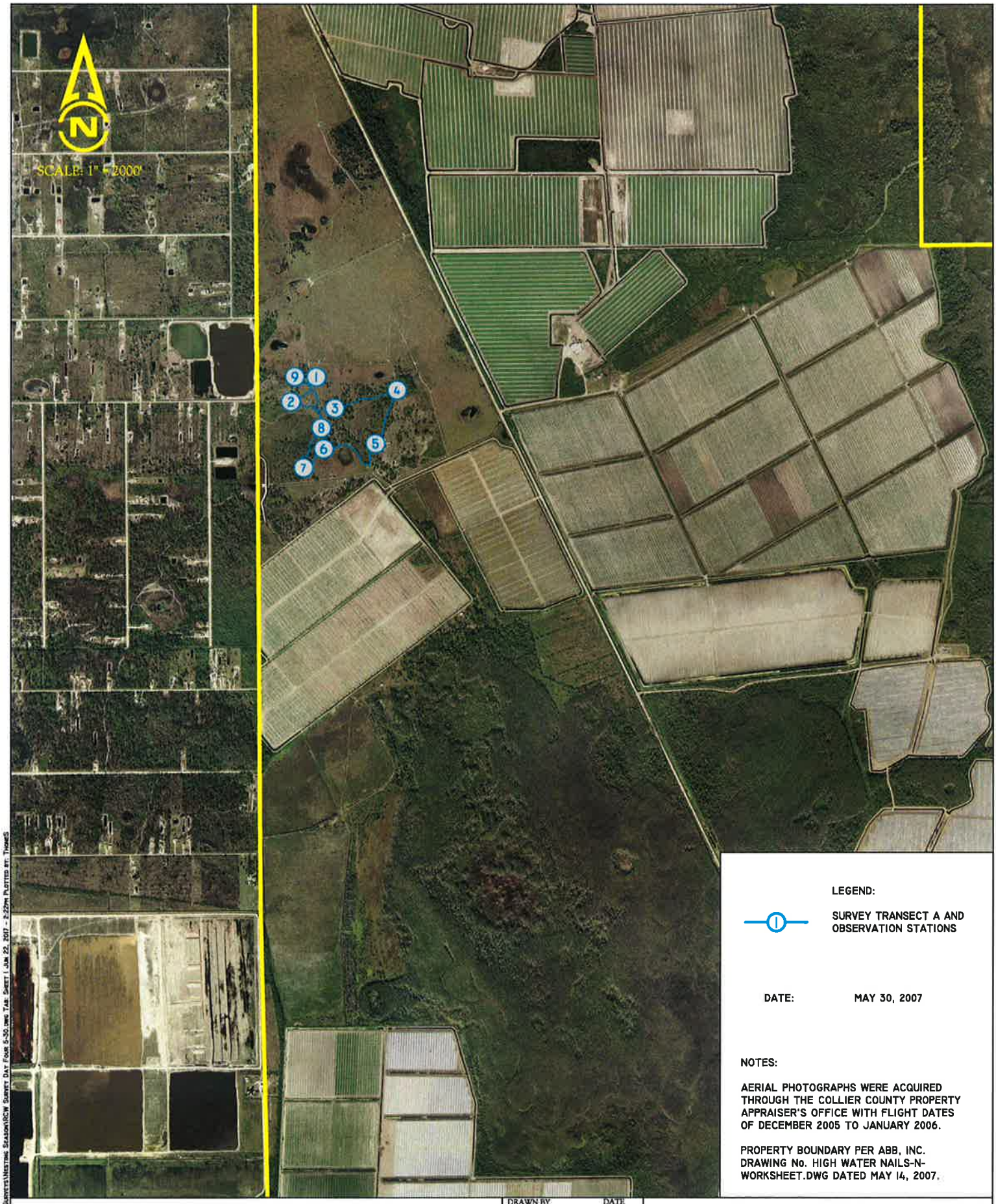

LEGEND:

1 SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: MAY 30, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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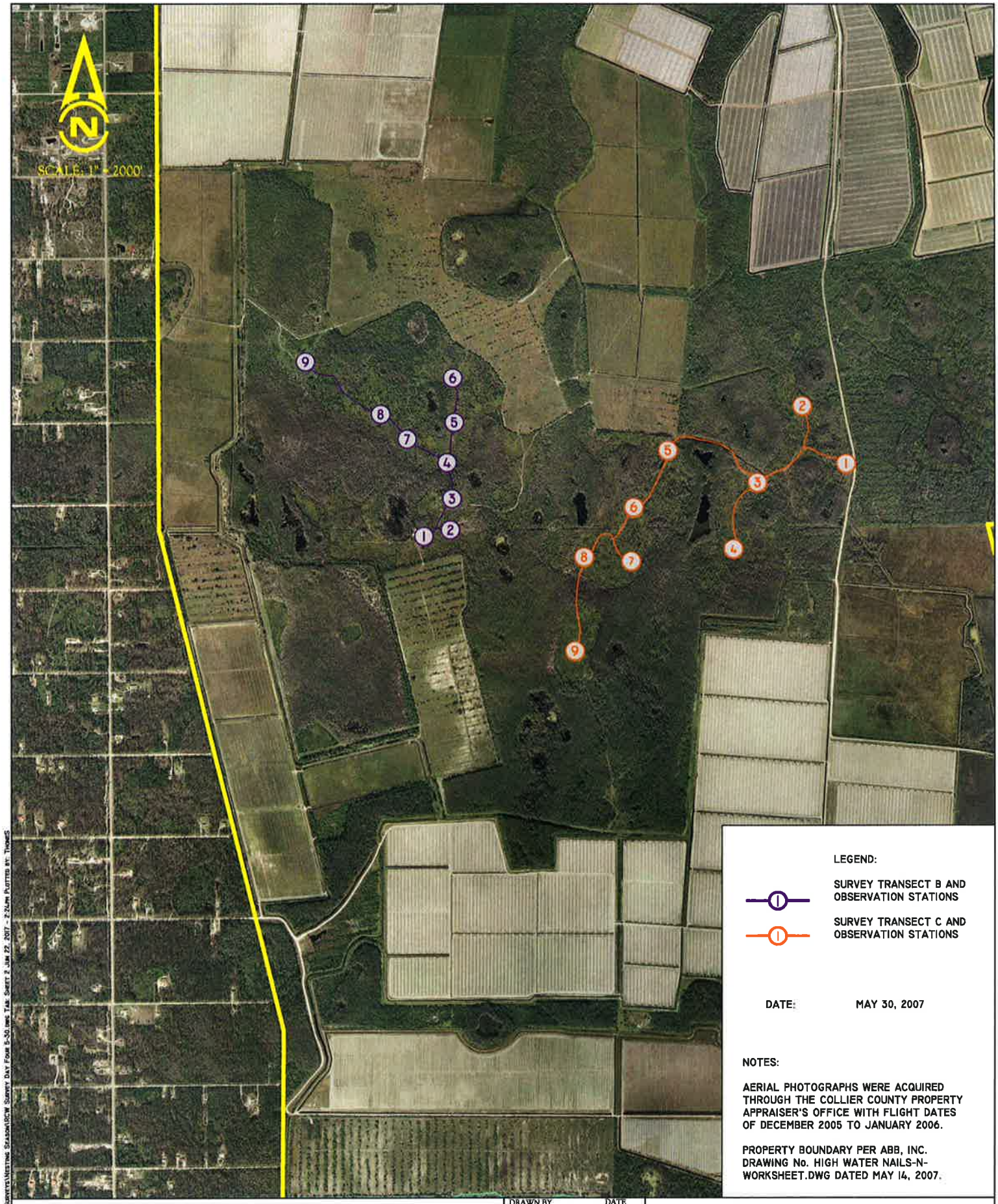

LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: MAY 30, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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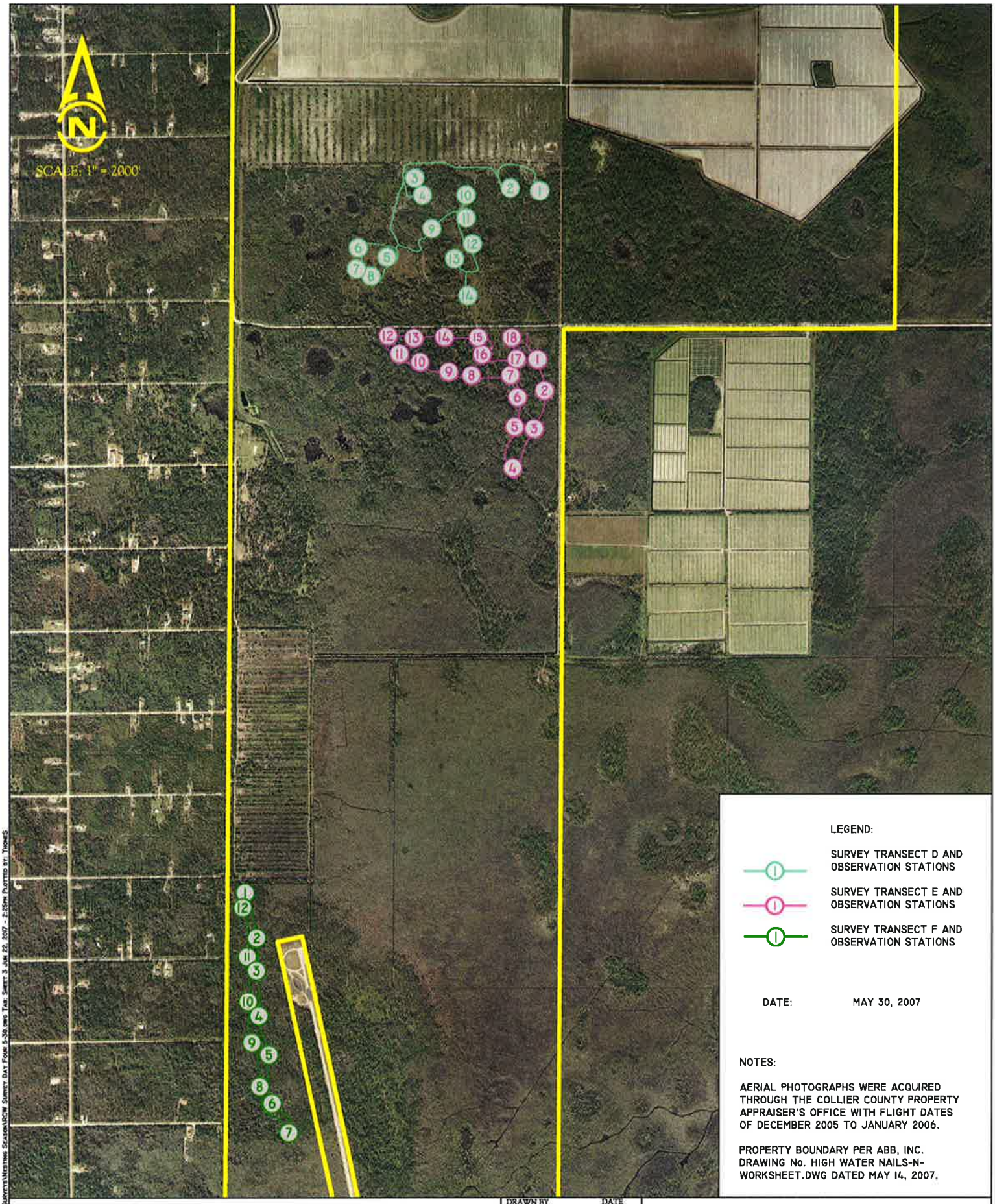

RED-COCKADED WOODPECKER
NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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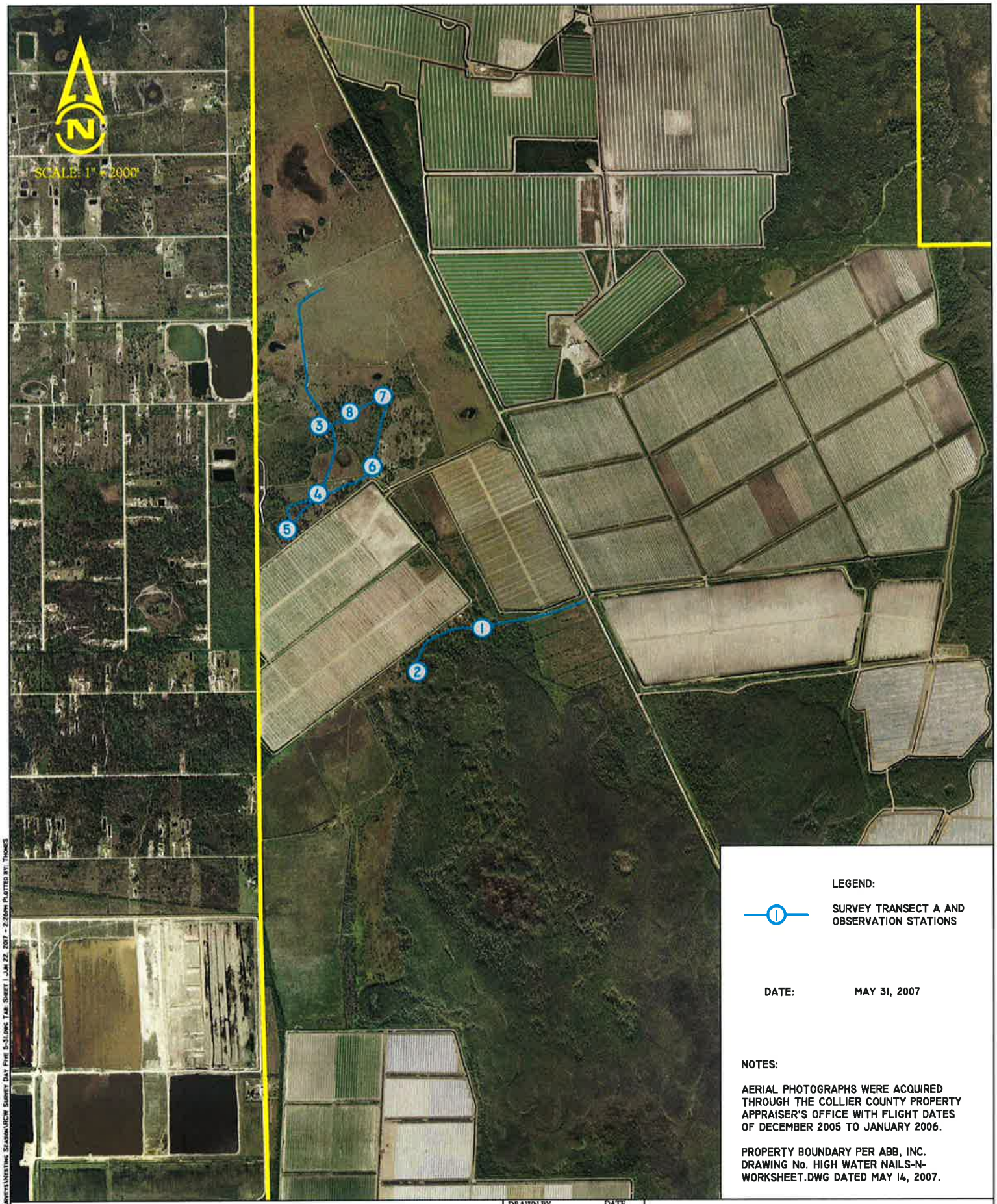


LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: MAY 31, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

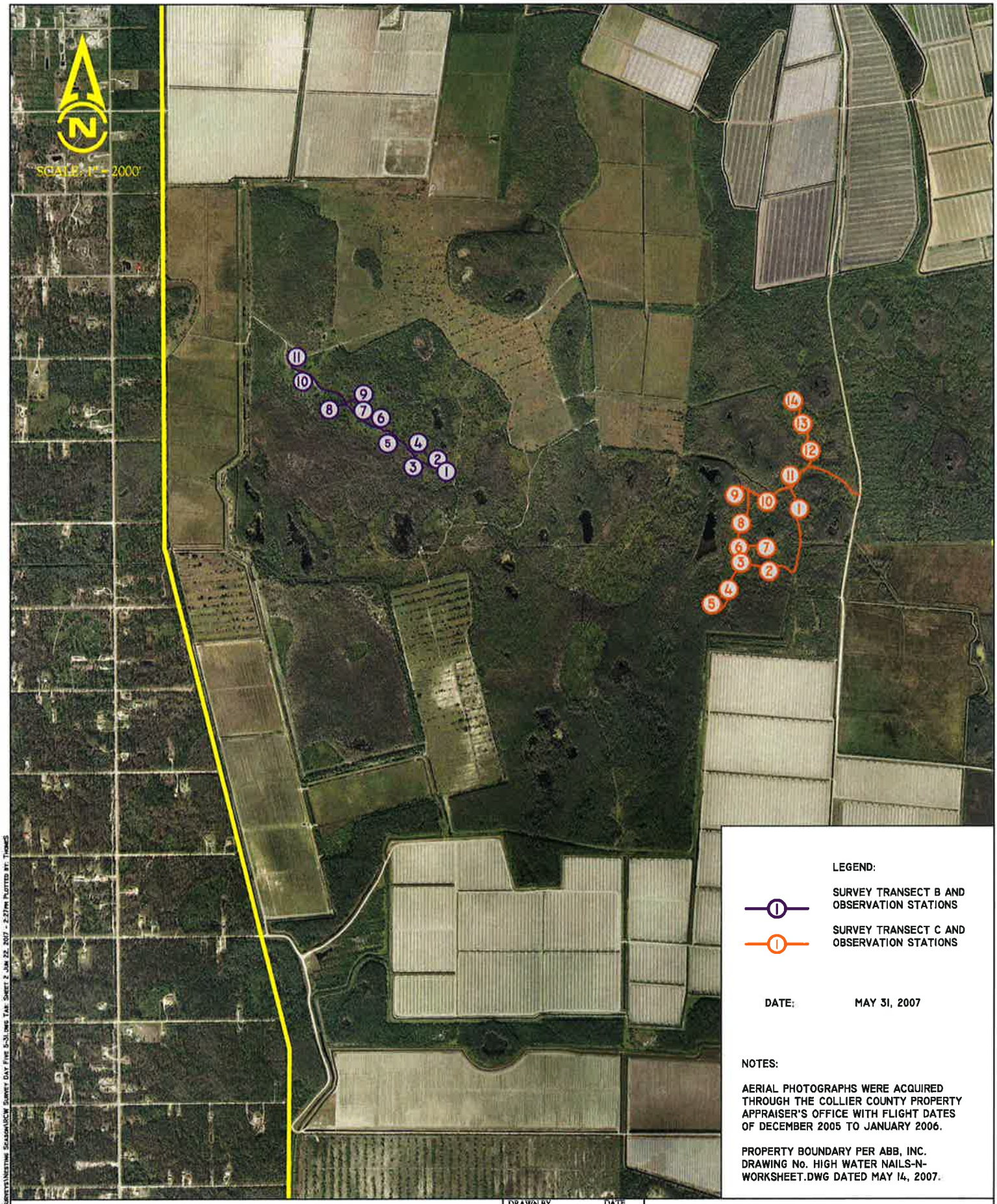
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05EMA&I\RCW Surveys\NESTING SEASON\RCW Survey Day Five 5-31.dwg Tab: Sheet 1 Jun 22, 2007 - 2:26pm Plotted by: THOMES



LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: MAY 31, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

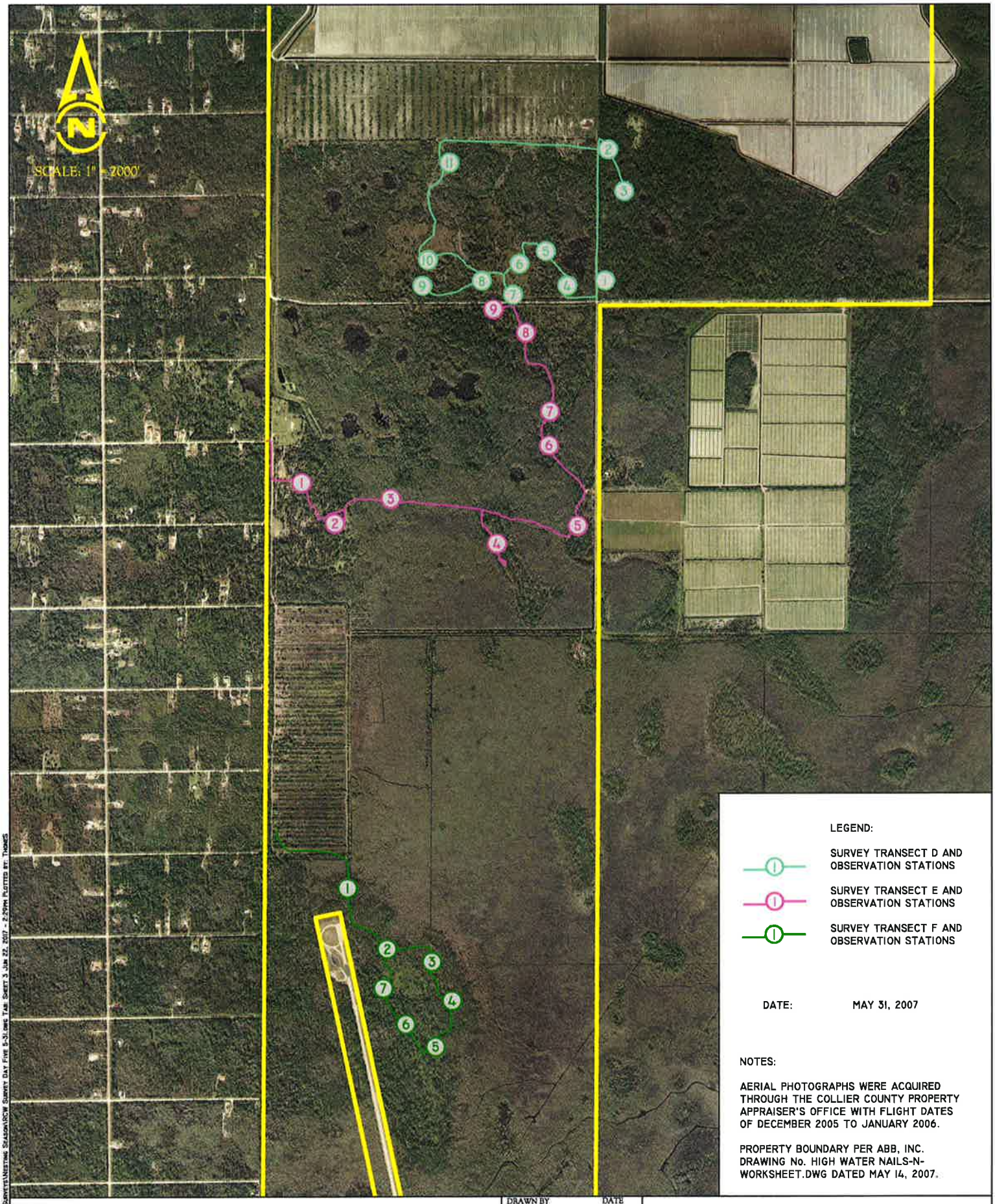
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05SCEH&S\RCW SURVEYS\NESTING SEASON\RCW SURVEY DAY FIVE 5-31.DWG TAB: SHEET 2 JUN 22, 2007 - 2:27PM PLOTTED BY: THOMAS

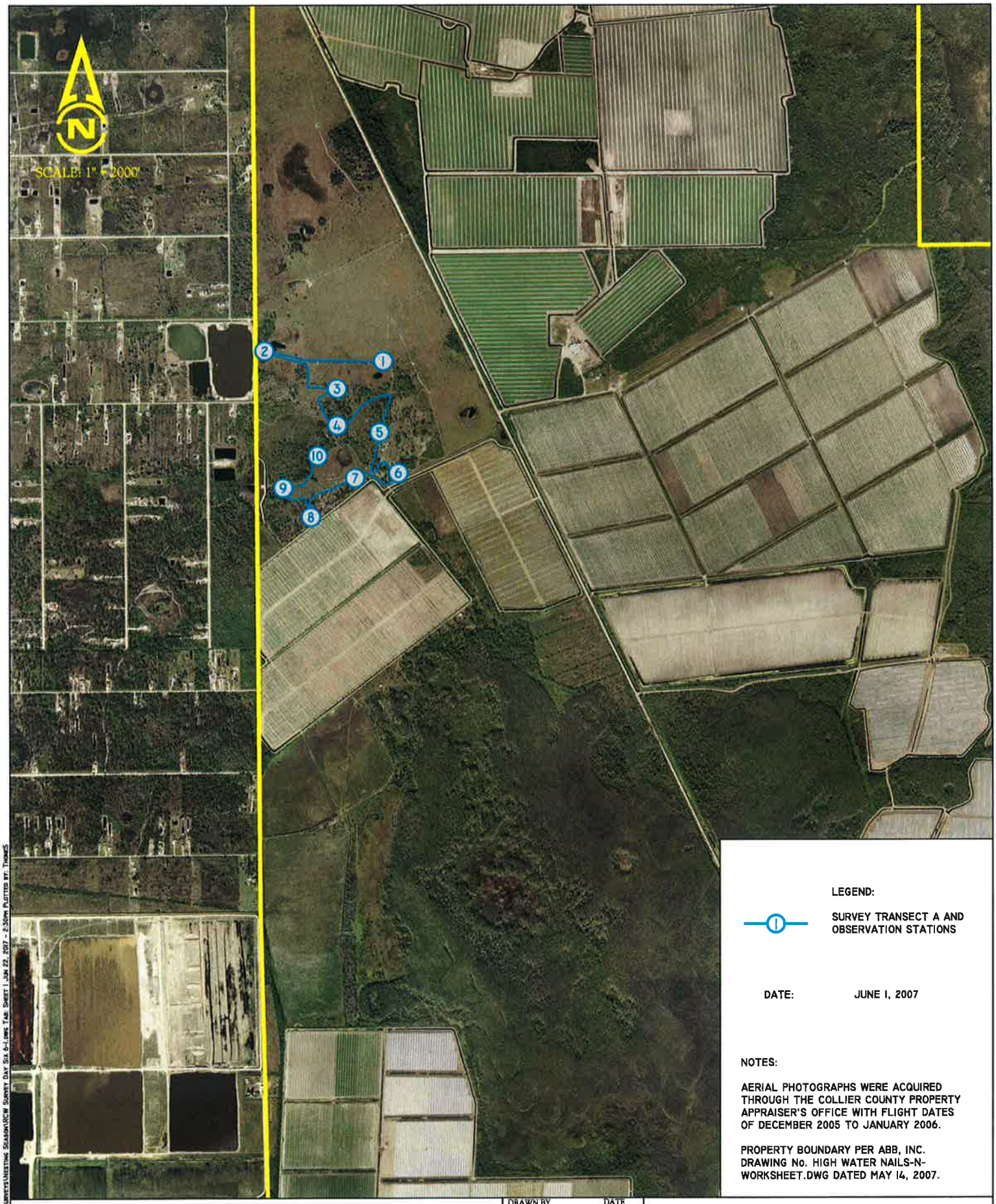


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists

J:\2005\05csmi&bnrcw Surveys\Nesting Season\ROW Survey Day Five 5-31.dwg Tab Sheet 3 Jun 22, 2007 - 2:29pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: JUNE 1, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

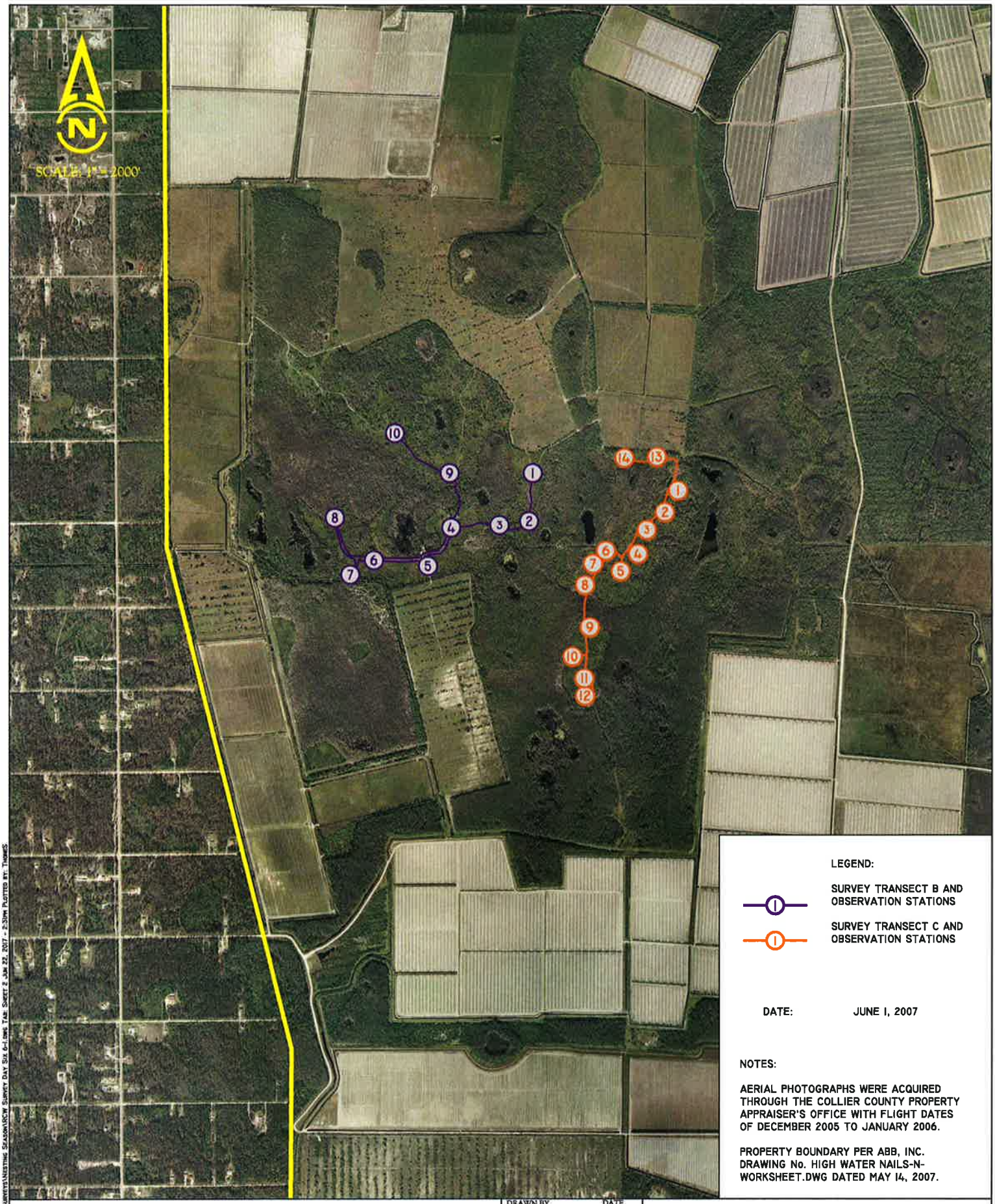
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN6A\SURCW Surveys\NESTING SEASON\RCW SURVEY DAY SIX 6-1.DWG Tab: Sheet 1 JUN 22, 2007 - 2:30pm PLOTTED BY: THOMAS

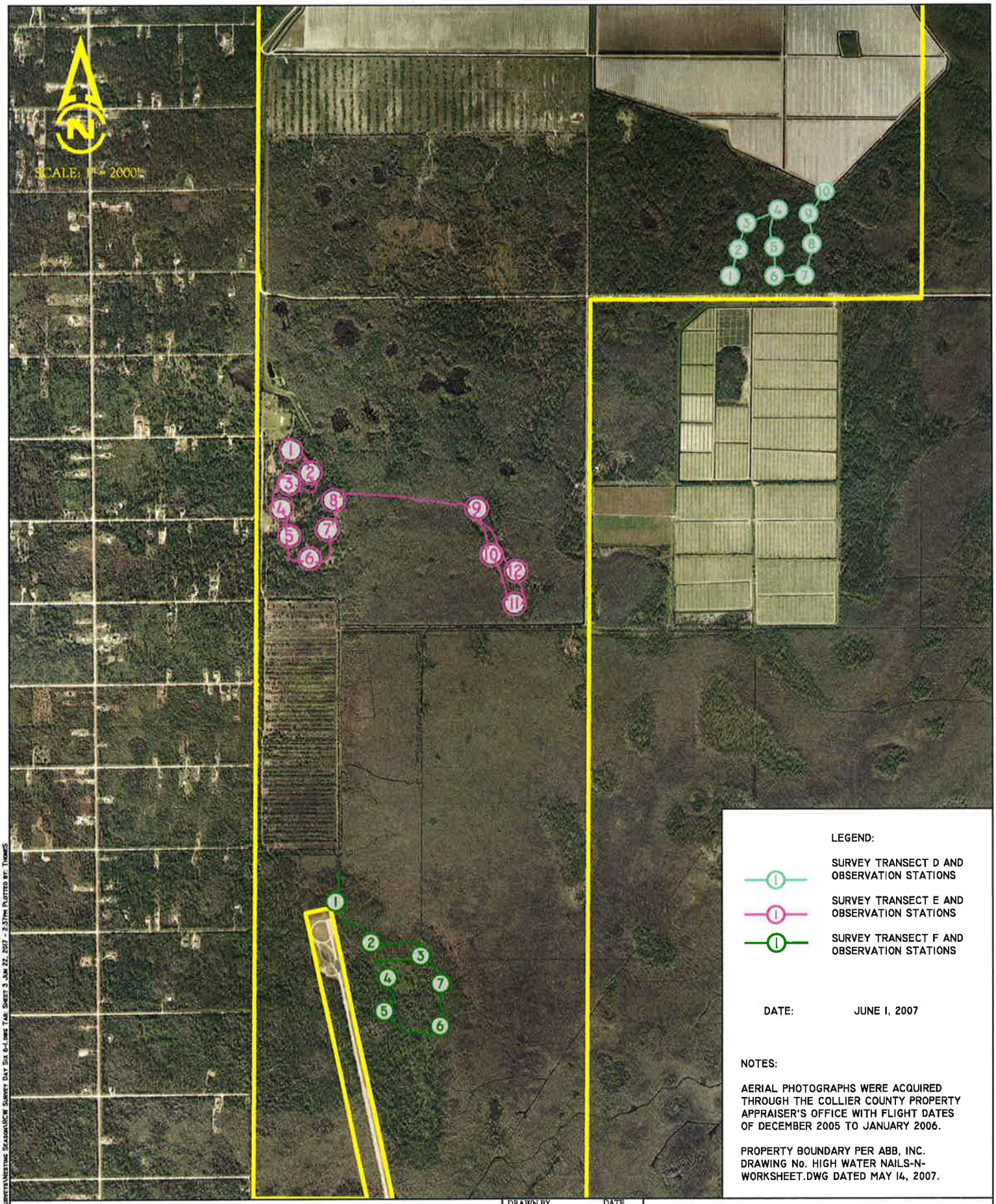


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05ESH6A1\RCW SURVEYS\NESTING SEASON\RCW SURVEY DAY SIZE 6-1.DWG TAB: SHEET 2 JUN 22, 2017 - 2:30PM PLOTTED BY: THOMAS

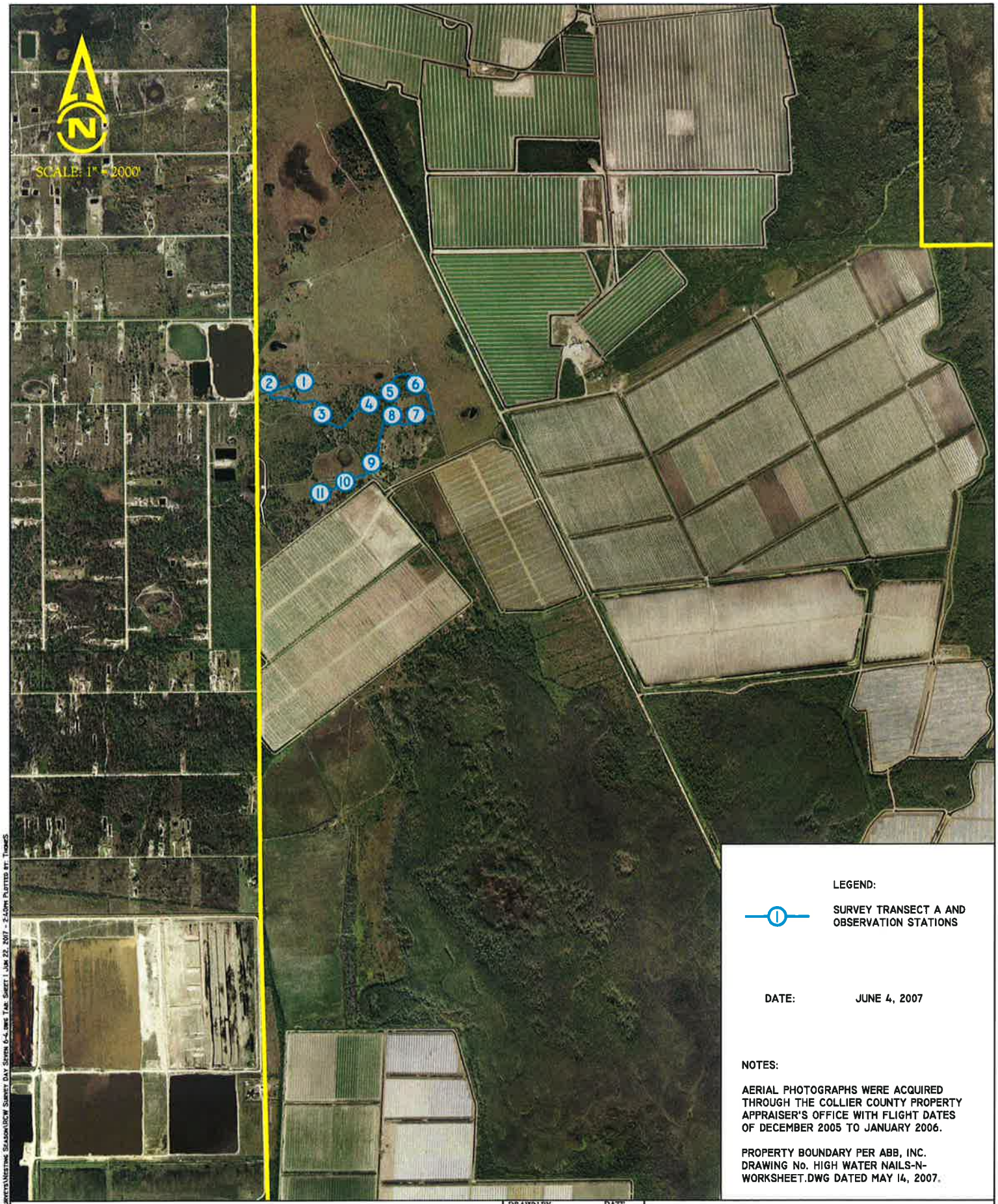


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

J:\2005\05cphl&a\RCW Surveys\Nesting Season\RCW Survey Day Six 6-1.dwg Tab: Sheet 3 Jun 22, 2007 - 2:37pm Plotted by: ThomeS



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: JUNE 4, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

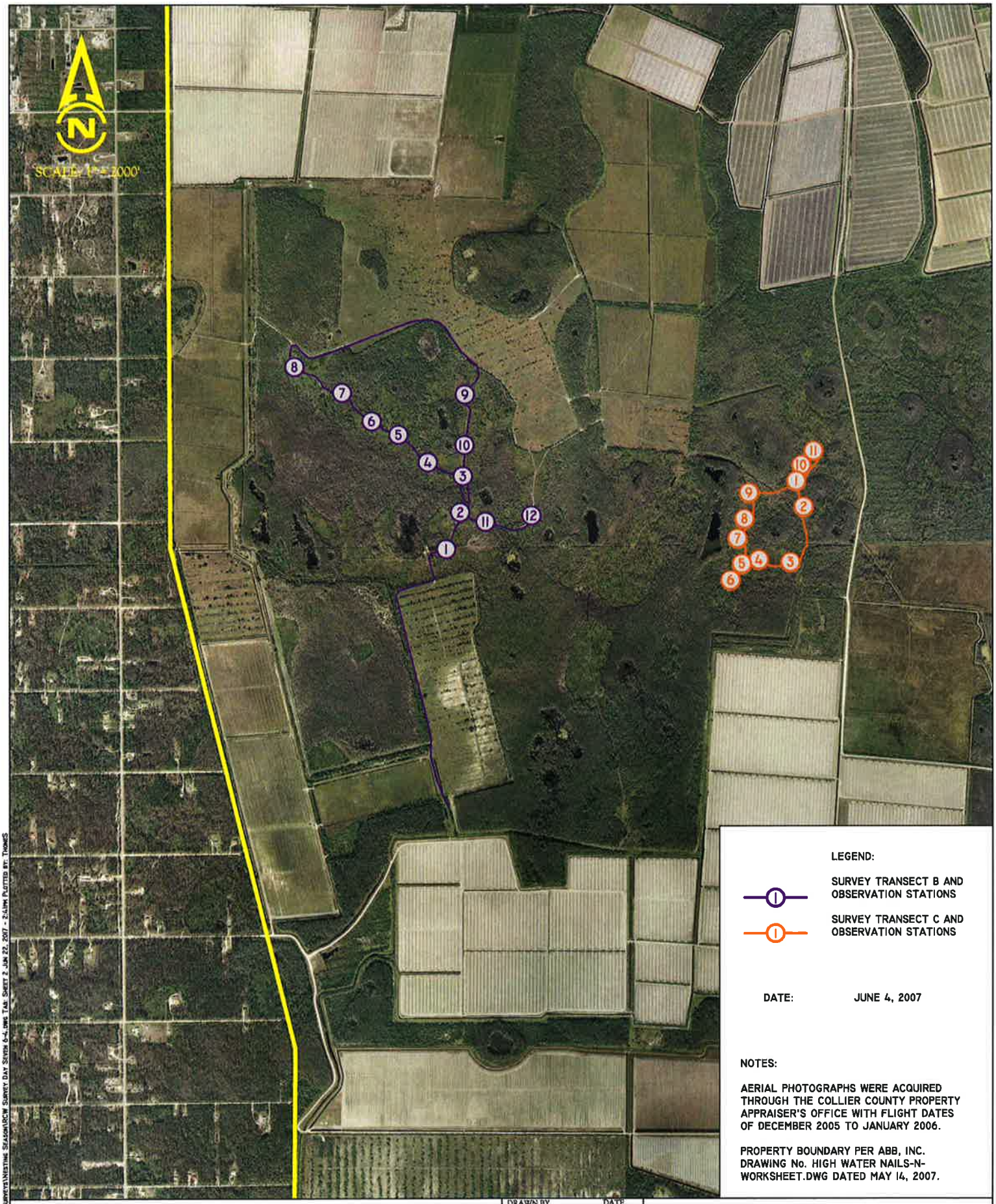
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen\Asbuilt\RCW Surveys\Nesting Season\RCW Survey Day Seven 6-4.dwg, Tab: Sheet 1 Jun 22, 2007 - 2:40pm Plotted by: ThomeS

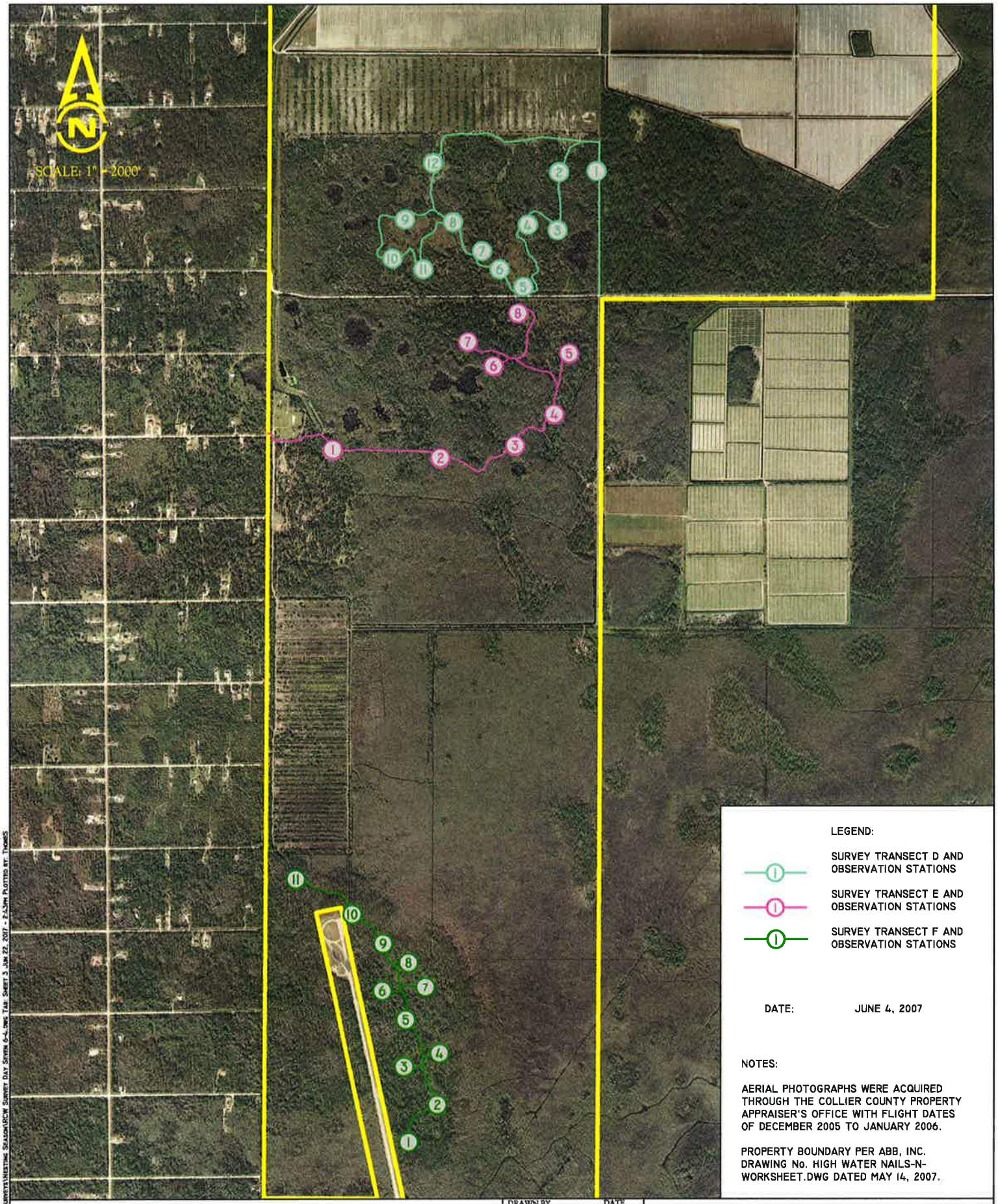


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cph48\RCW Surveys\Nesting Season\RCW Survey Day Sheet 6-4.dwg Tab: Sheet 2 Jun 22, 2007 - 2:40pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT D AND OBSERVATION STATIONS

SURVEY TRANSECT E AND OBSERVATION STATIONS

SURVEY TRANSECT F AND OBSERVATION STATIONS

DATE: JUNE 4, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

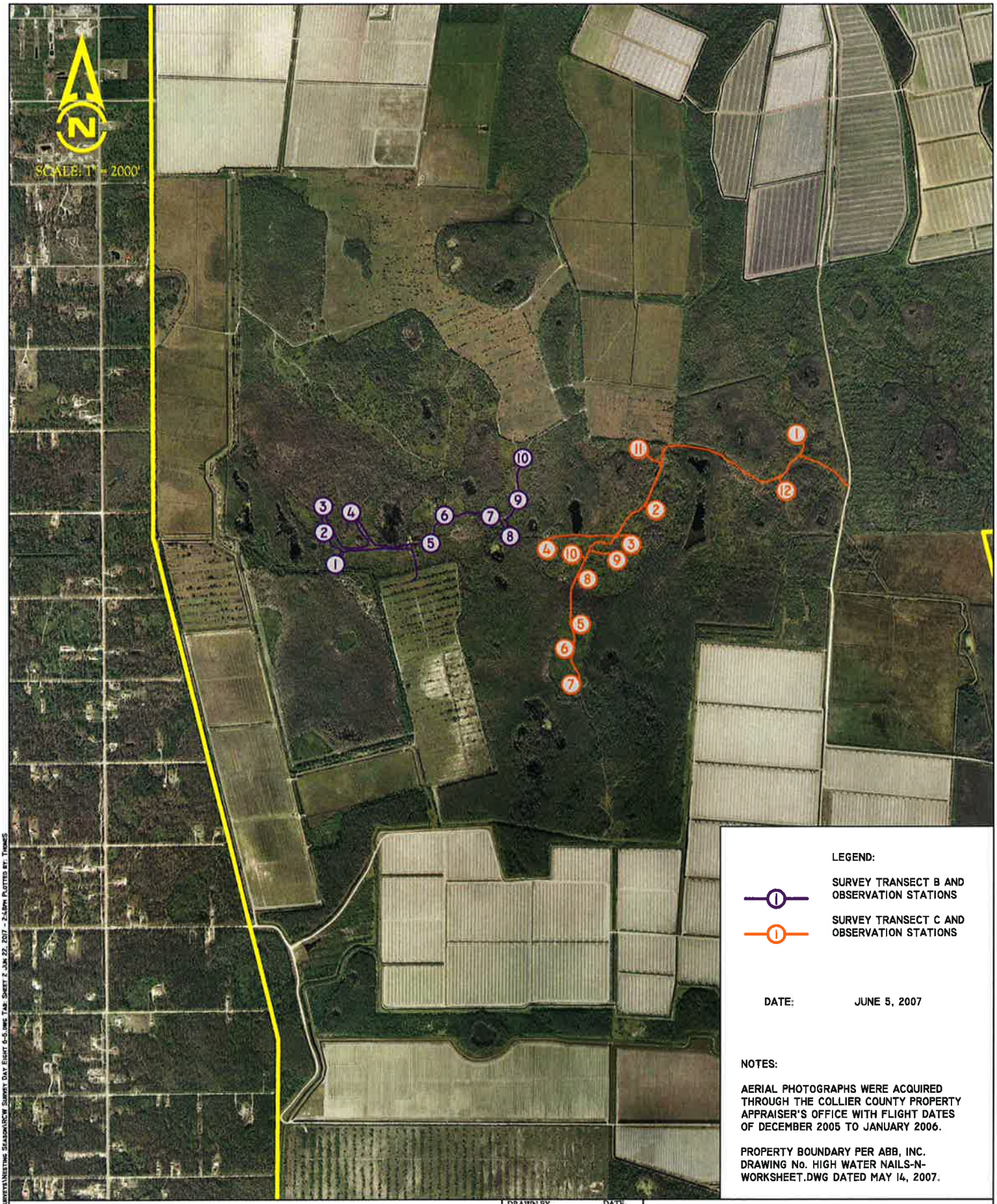
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN\4B\RCW Surveys\NESTING SEASON\RCW SURVEY DAY SEVEN 6-4.DWG TAB: SHEET 3 JUN 22, 2007 - 2:43PM PLOTTED BY: THOMES

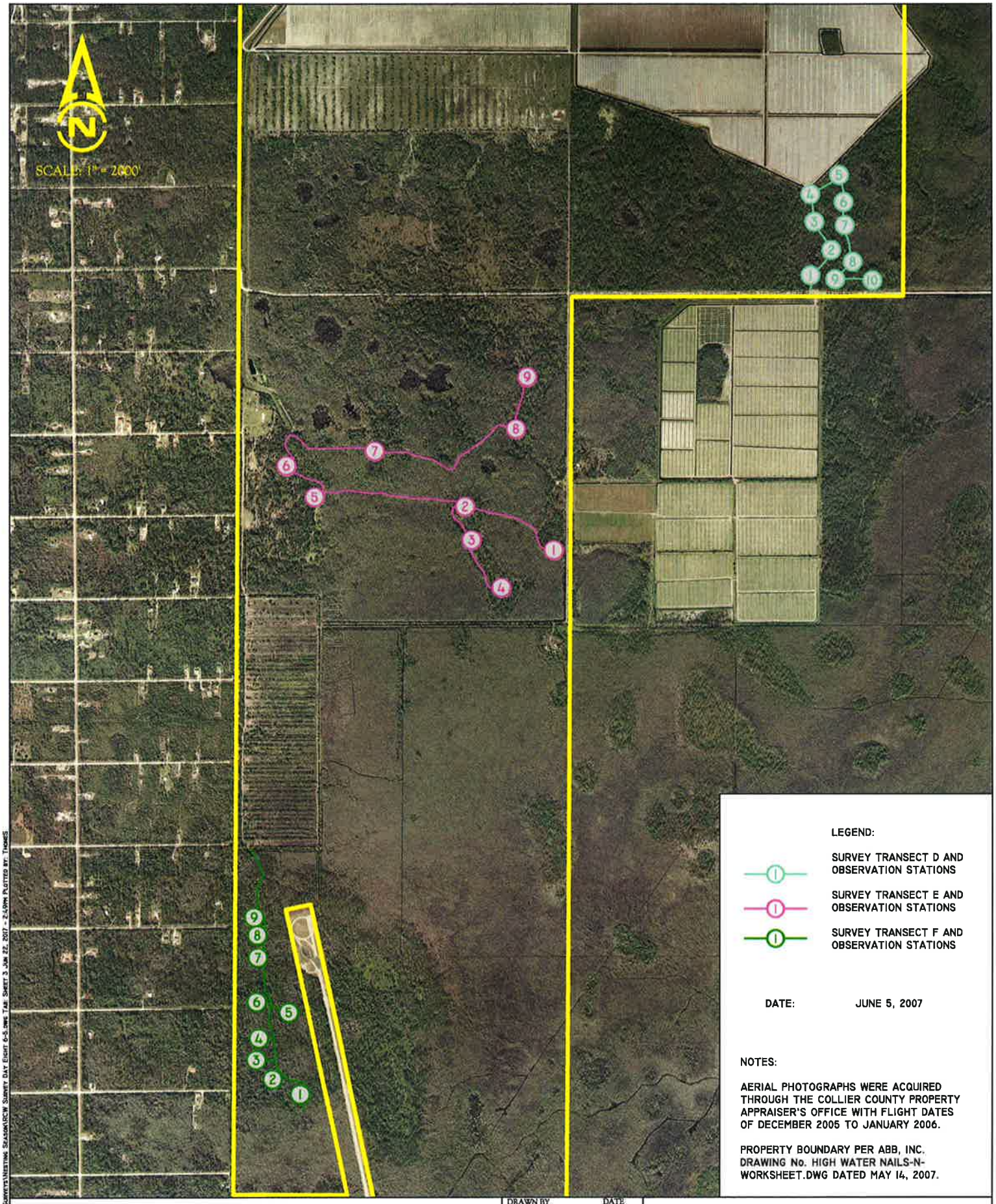


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEHLA\RCW Surveys\Nesting Season\RCW Survey Day Eight 6-5.dwg Tab: Sheet 2 Jun 22, 2017 - 2:48pm Plotted by: Thomas

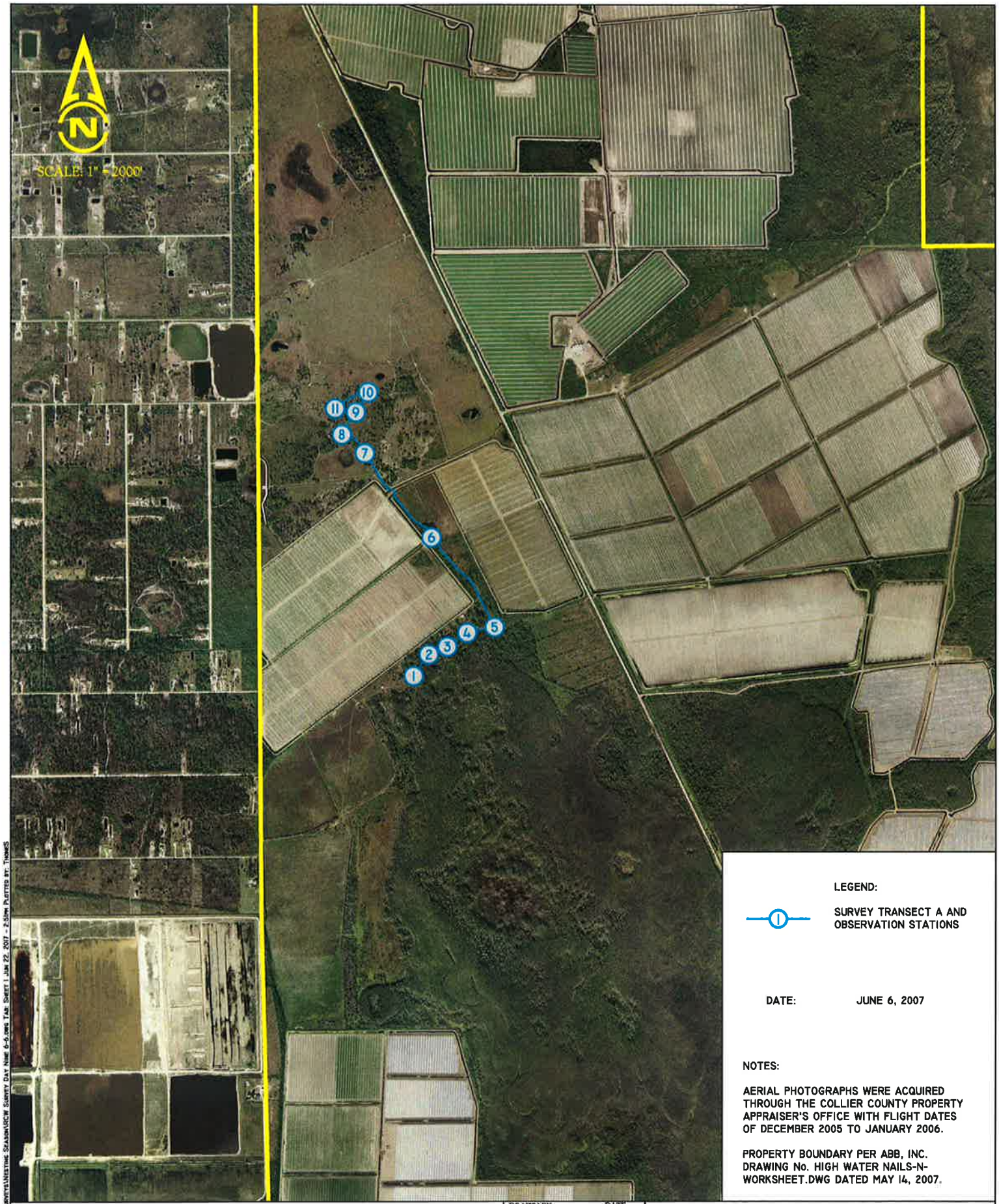


J:\2005\05CEN\6B\RCW Surveys\Nesting Season\RCW Survey Day Eight 6-5.dwg, Tab: Sheet 3, Jun 22, 2007 - 2:40pm, Plotted by: Thomas

RED-COCKADED WOODPECKER
NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: JUNE 6, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

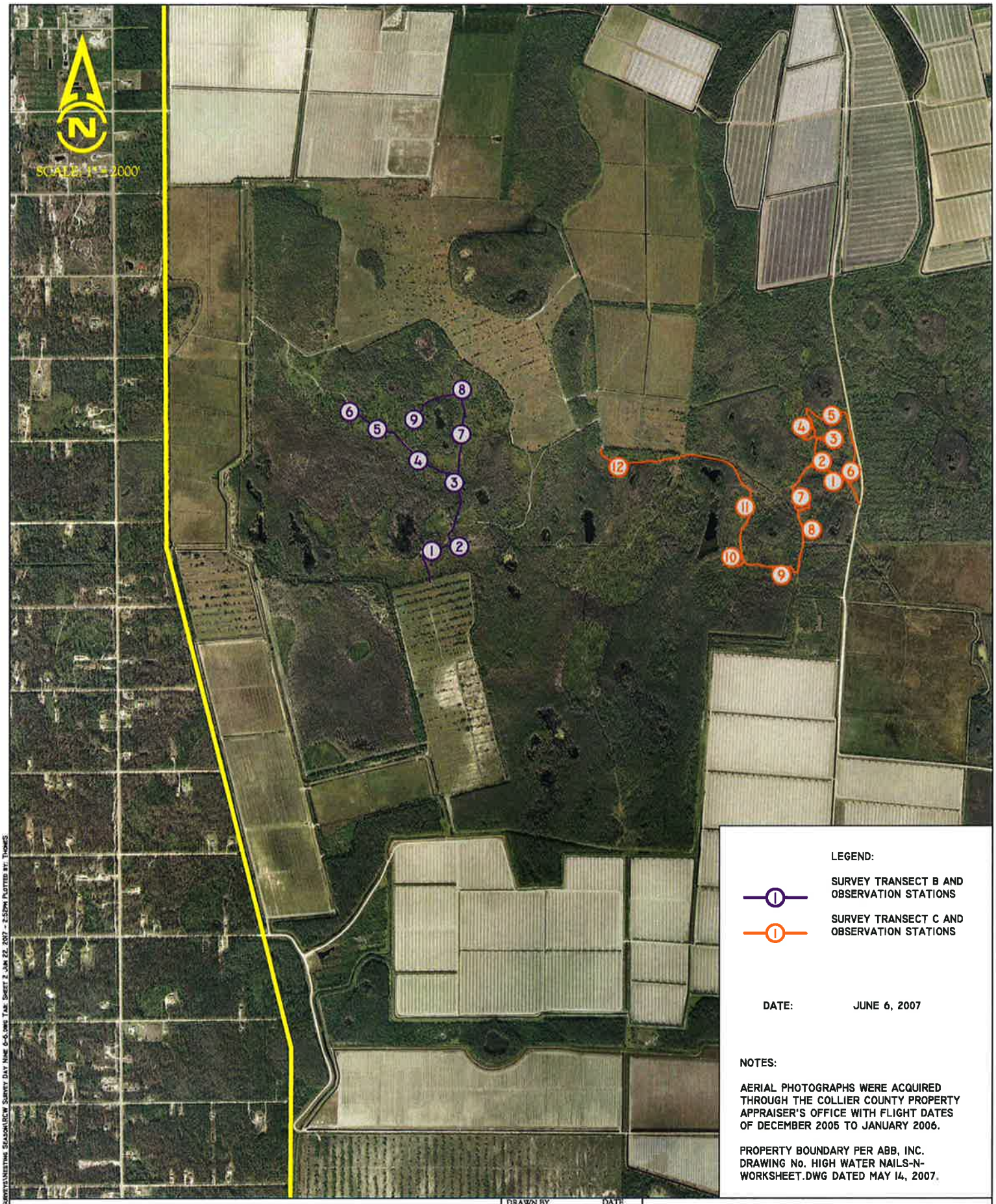
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen48\RCW Surveys\Nesting Season\RCW Survey Day Nine 6-6.dwg Tab: Sheet1 Jun 22, 2007 - 2:31pm Plotted by: thomas

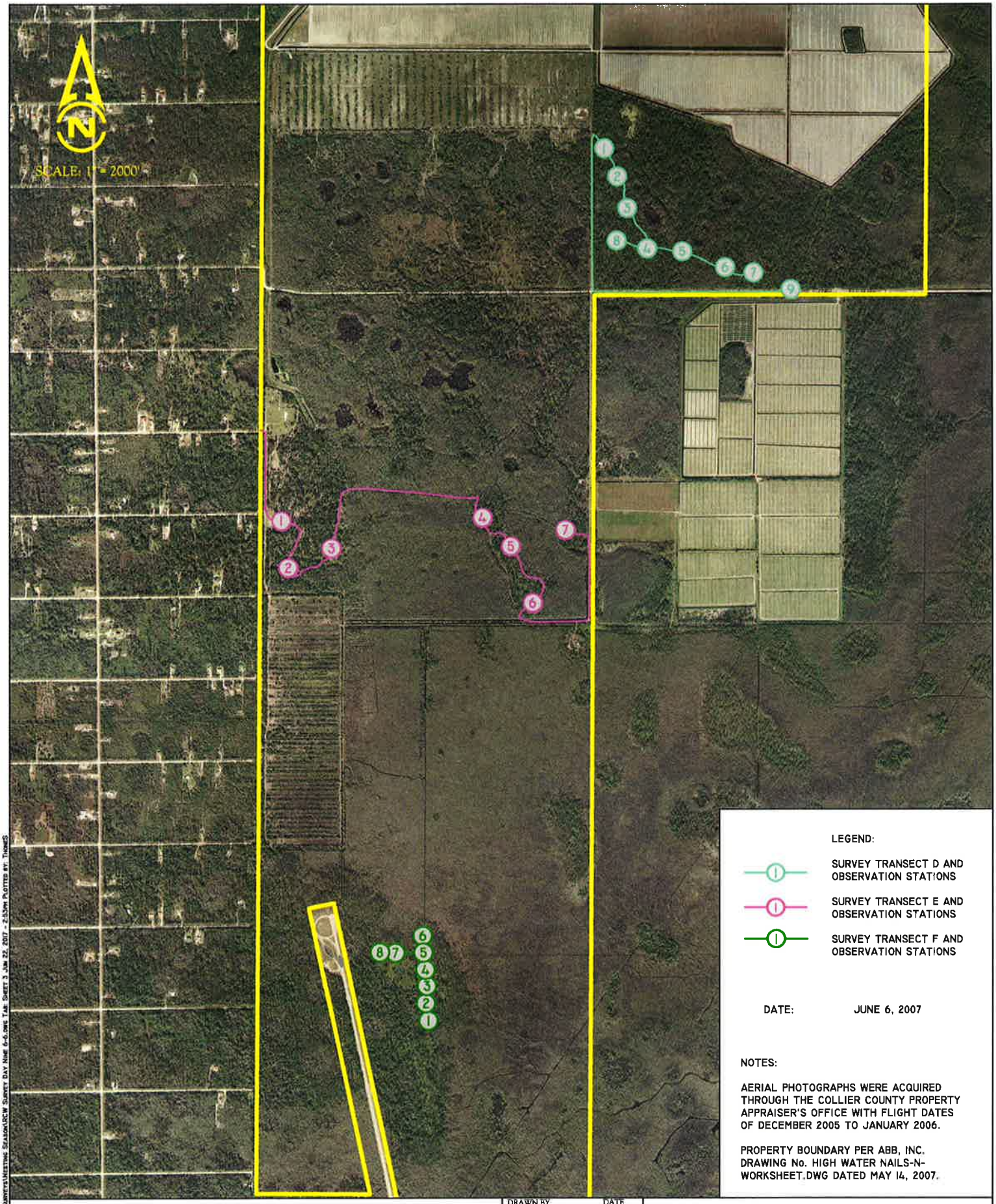


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CBHL&B\RCW Surveys\NESTING SEASON\RCW Survey Day Nine 6-6.dwg Tab: Sheet 2 Jun 22, 2007 - 2:52pm Plotted by: Thomas

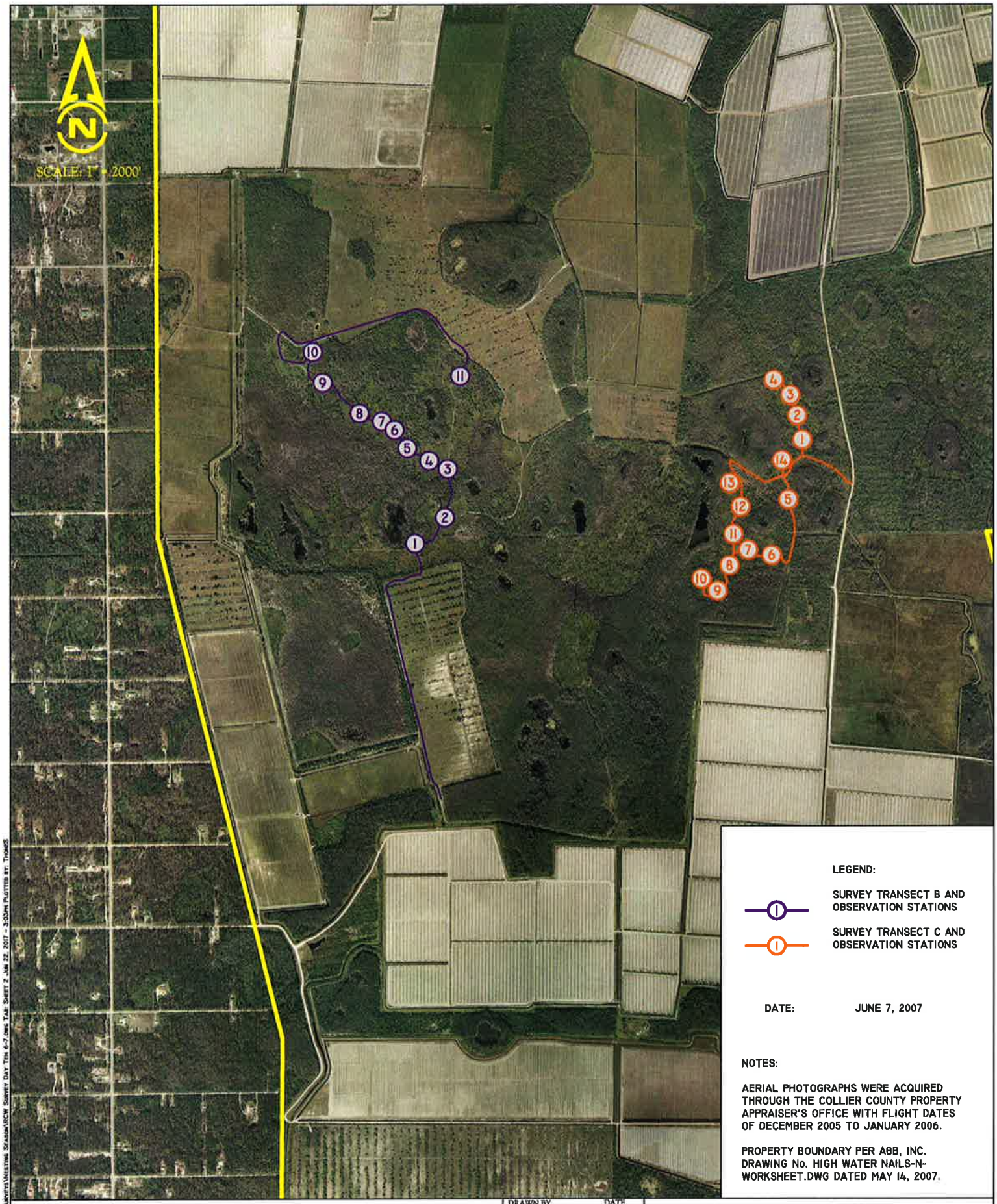


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY: S.C.	DATE: 6/7/07
REVIEWED BY: C.G.R.	DATE: 6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

J:\2005\05cen4a\URCW Surveys\Nesting Season\RCW Survey Day Nine 6-6.dwg Tab: Sheet 3 Jun 22, 2007 - 2:53pm Plotted by: ThomeS



LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: JUNE 7, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

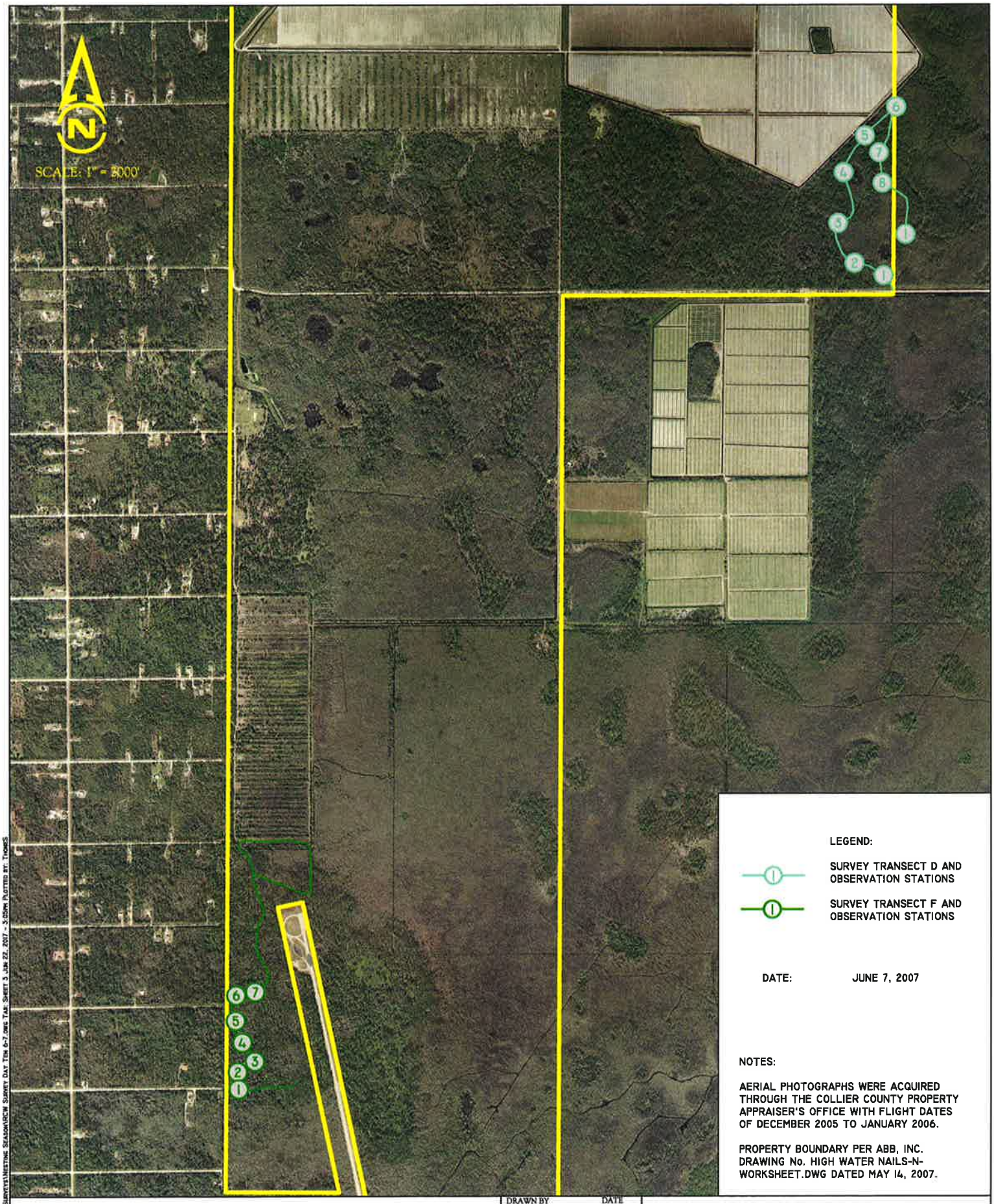
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/11/07
REVIEWED BY	DATE
C.G.R.	6/11/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN\4\DRCW Surveys\Nesting Season\DRCW Survey Day Trip 6-7.dwg Tab: Sheet 2 Jun 22, 2007 - 3:03pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT D AND OBSERVATION STATIONS

SURVEY TRANSECT F AND OBSERVATION STATIONS

DATE: JUNE 7, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

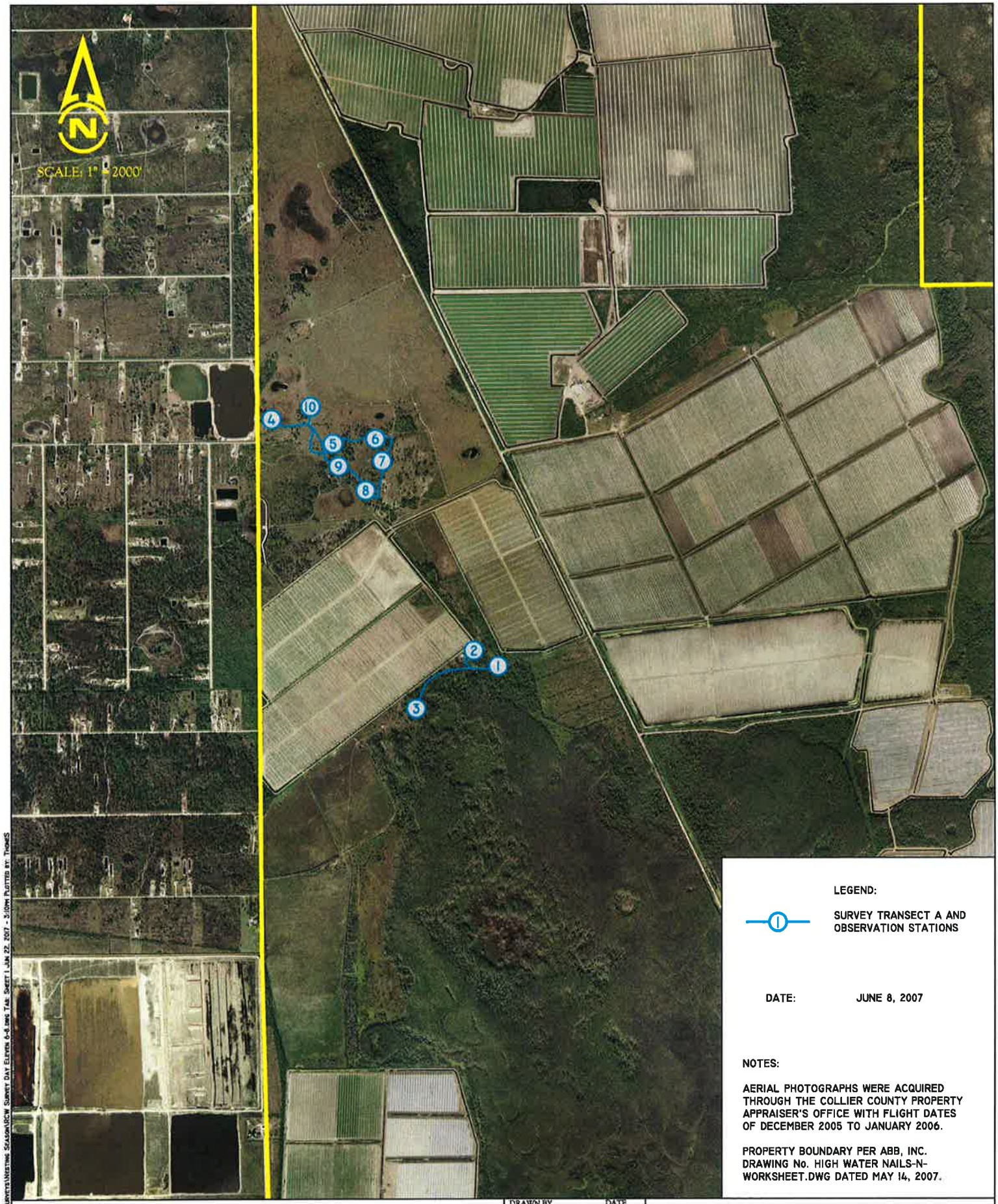
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/11/07
REVIEWED BY	DATE
C.G.R.	6/11/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEP46.01\RCW Surveys\Nesting Season\RCW Survey Dat Tbl 6-7.dwg Tab: Sheet 3 Jun 22, 2007 - 3:05pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: JUNE 8, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

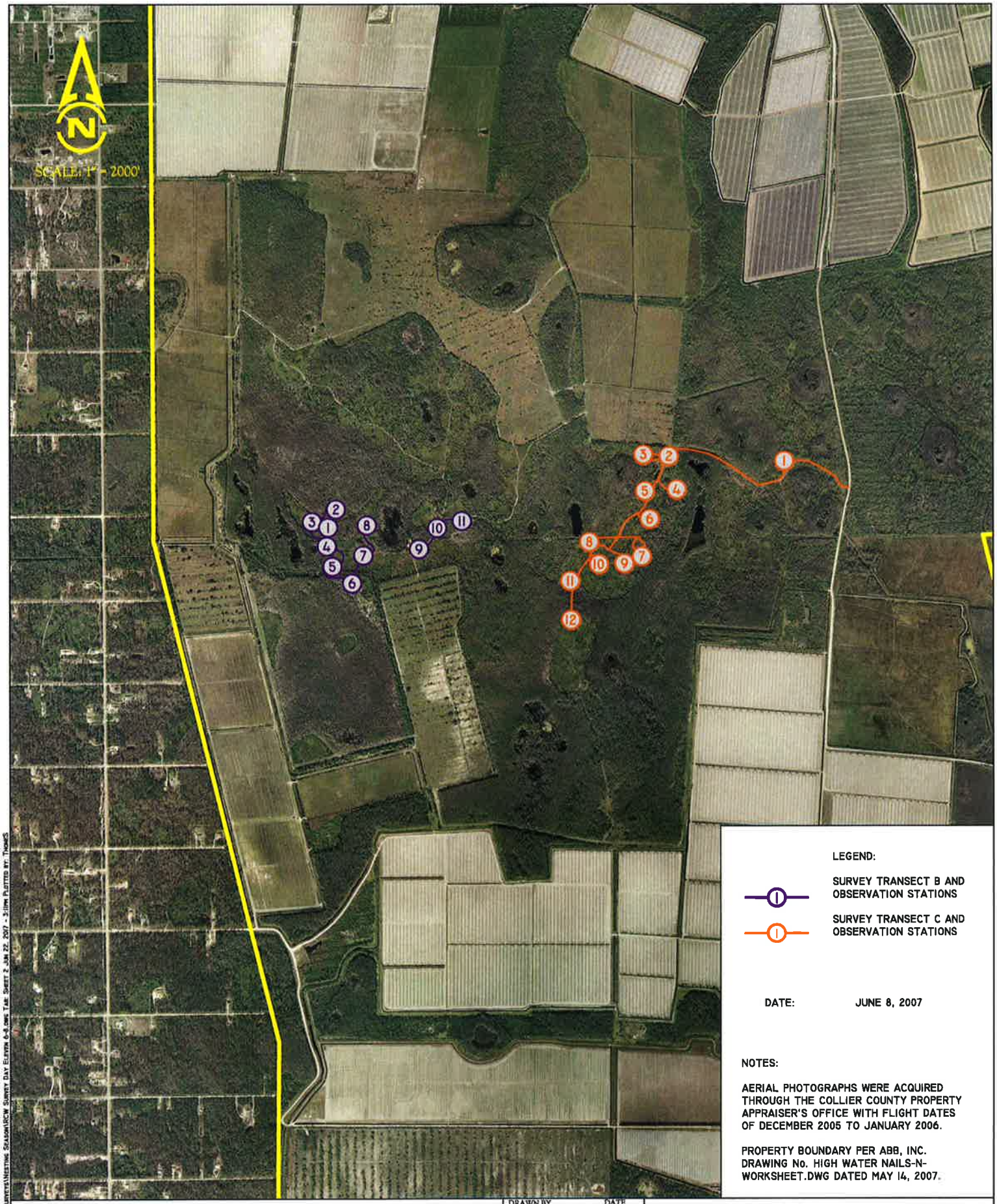
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/11/07
REVIEWED BY	DATE
C.G.R.	6/11/07
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

J:\2005\05CDH4&I\RCW Surveys\Nesting Season\RCW Survey Day Eleven 6-8.dwg Tab: Sheet 1 Jun 22, 2007 - 5:06pm Plotted by: ThomeS

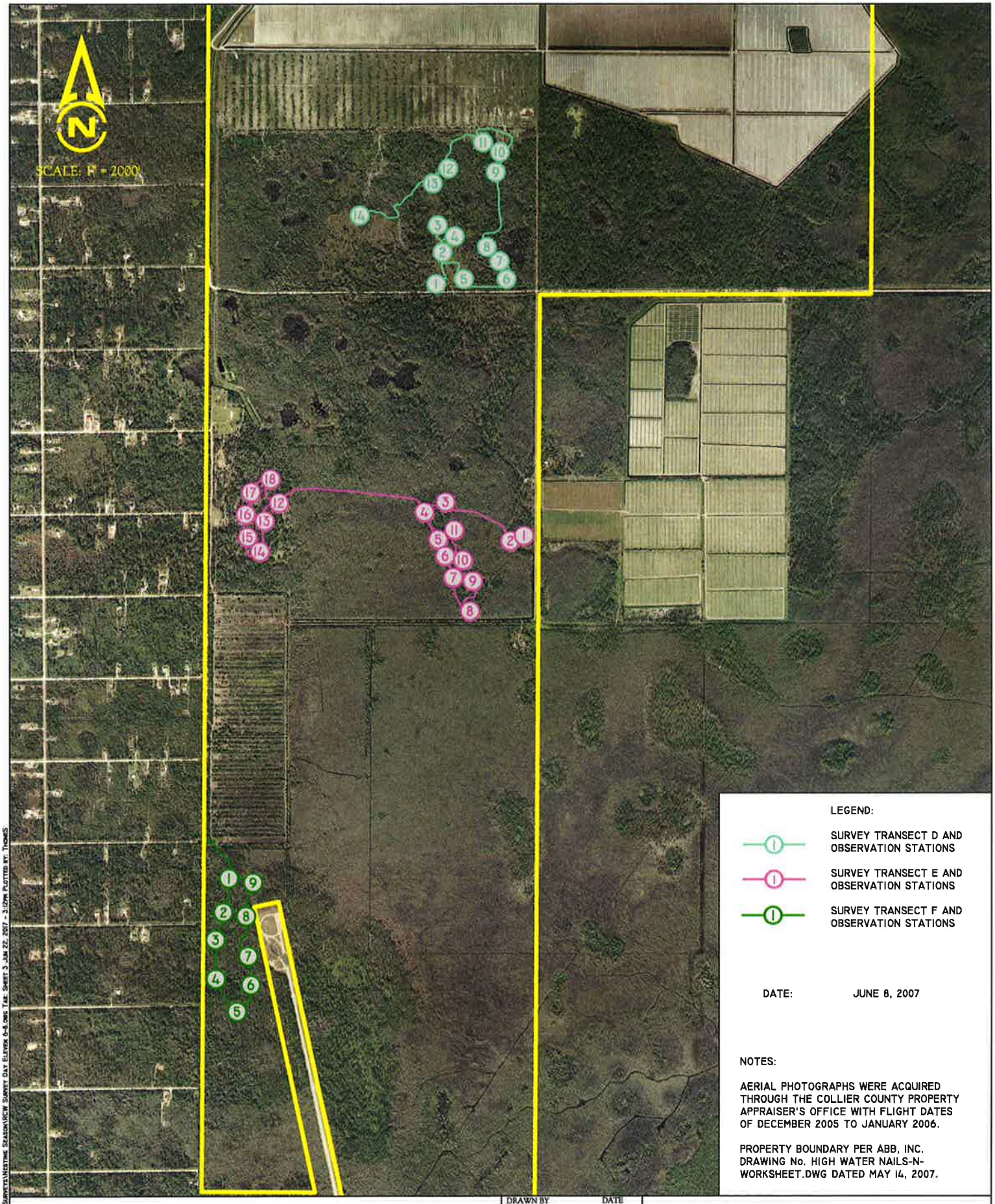


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/11/07
REVIEWED BY	DATE
C.G.R.	6/11/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\12005\105\ZENHA\SURCW Surveys\Nesting Season\RCW Survey Day Eleven 6-8.dwg Tab: Sheet 2 Jun 22, 2007 - 3:11pm Plotted by: Thomas

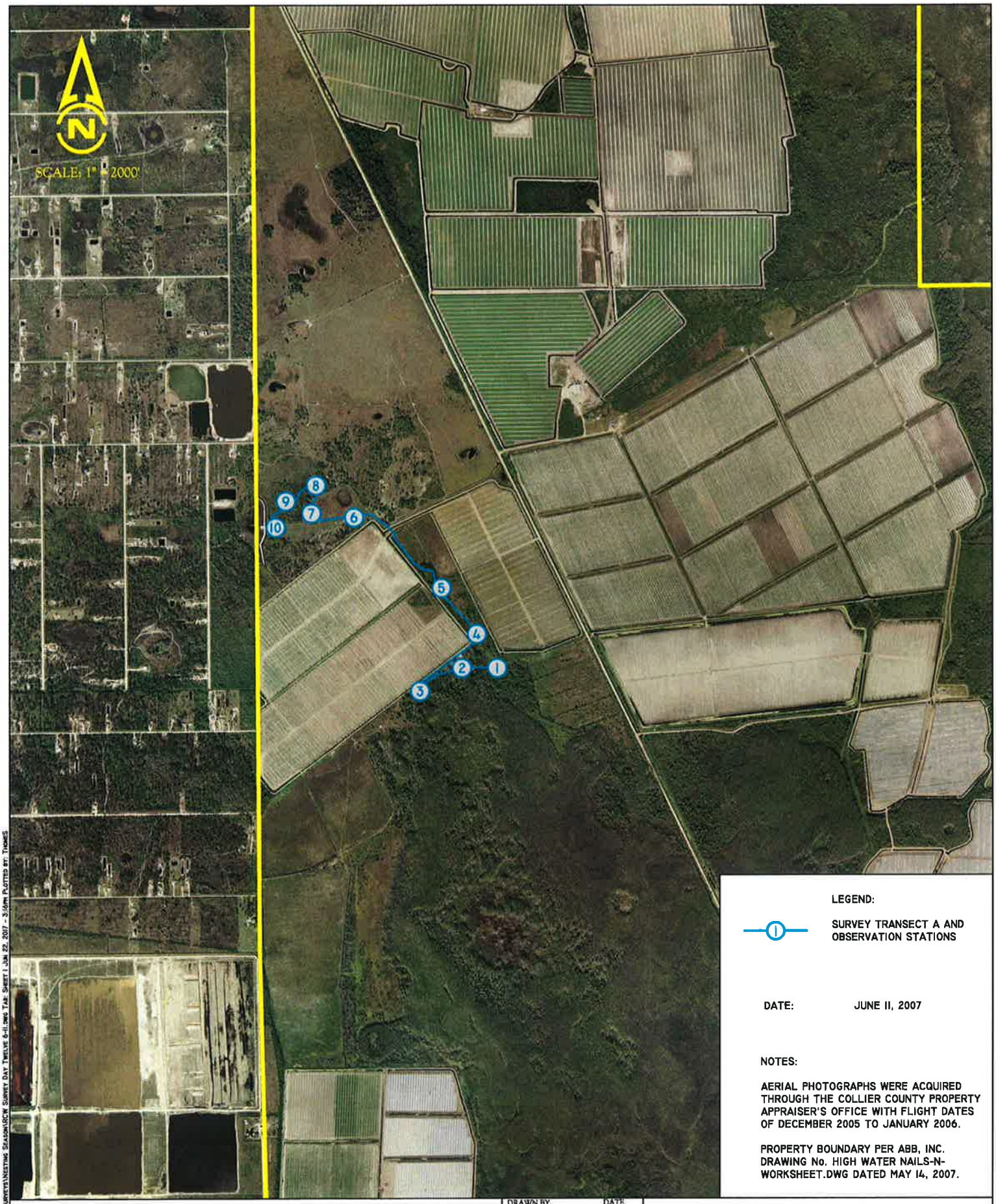


RED-COCKADED WOODPECKER
NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/11/07
REVIEWED BY	DATE
C.G.R.	6/11/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN\NESTING SEASON\RCW SURVEYS\NESTING SEASON RCW SURVEY DAY ELEVEN 6-8.DWG Tue, Sheet 3 Jun 22, 2007 - 3:02pm Plotted by: THOMAS



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: JUNE 11, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

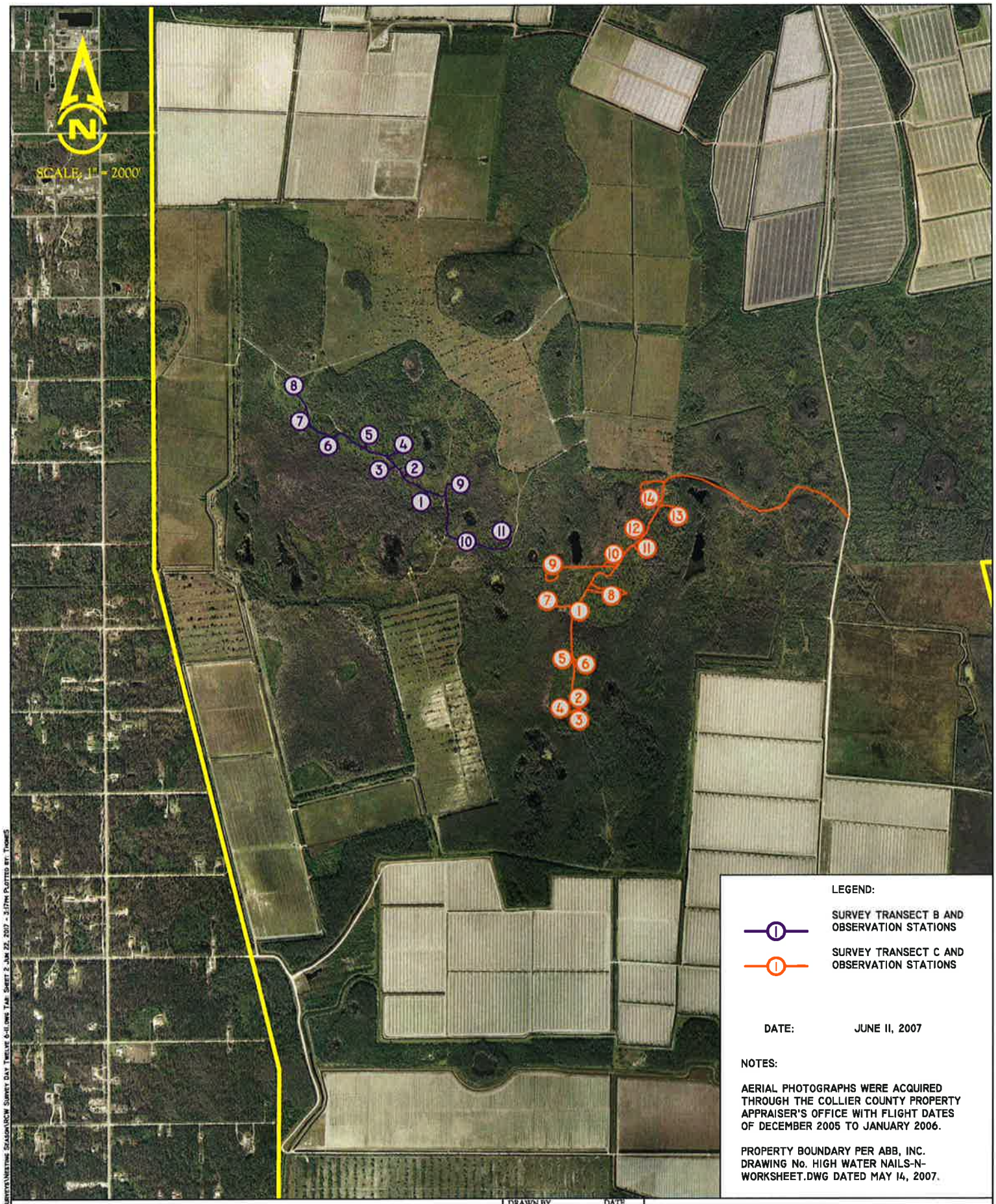
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/12/07
REVIEWED BY	DATE
C.G.R.	6/12/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN\445\RCW SURVEYS\NESTING SEASON\RCW SURVEY DAY TWELVE 6-11.DWG TAB: SHEET 1 JUN 22, 2007 - 3:46PM PLOTTED BY: THOMES

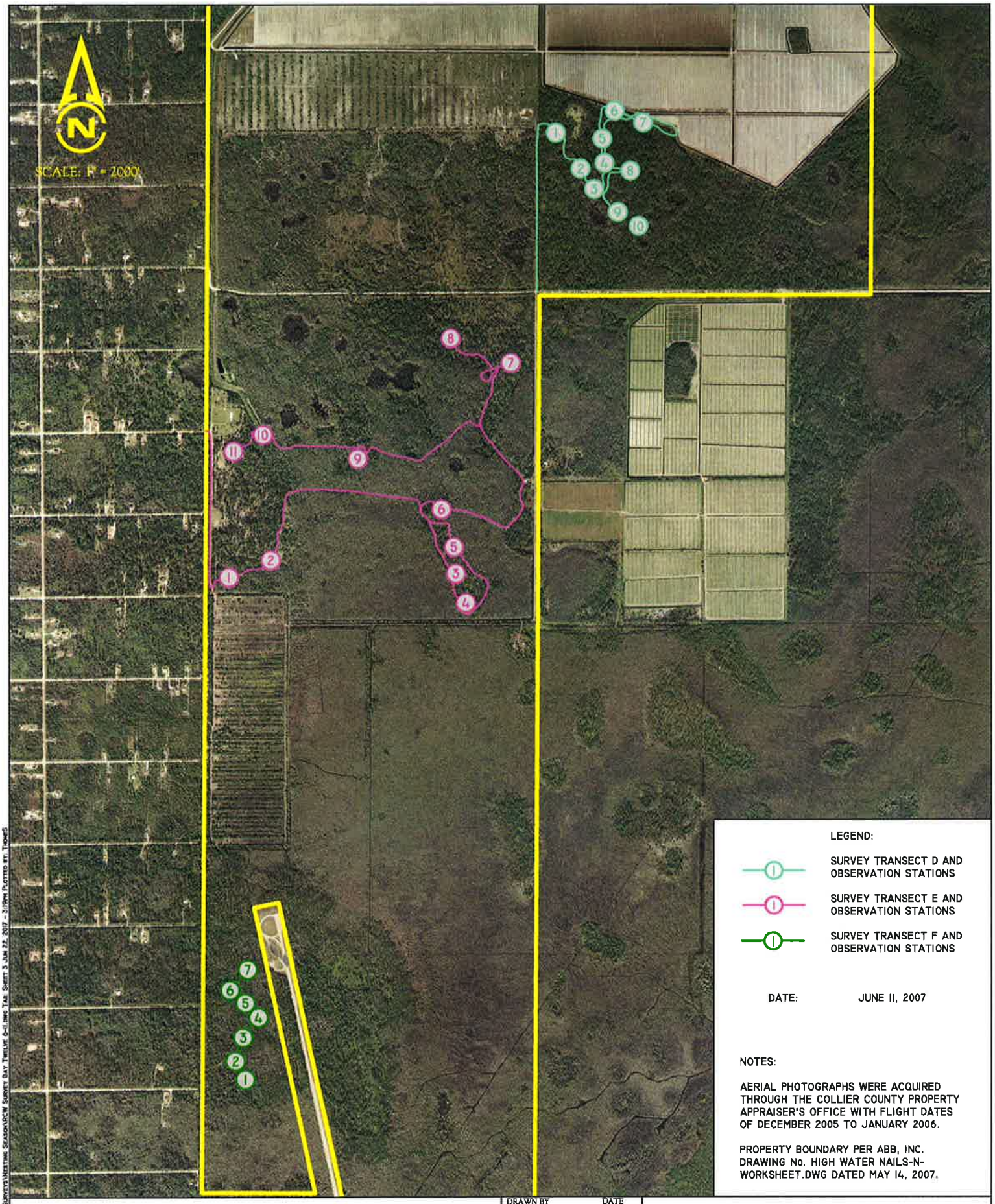


J:\2005\05-CEN4&5\RCW Surveys\Nesting Season\RCW Survey Day Twelve 6-11-07.ovs Tab: Sheet 2 Jun 22, 2007 - 3:17pm Plotted by: Thomes

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/12/07
REVIEWED BY	DATE
C.G.R.	6/12/07
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

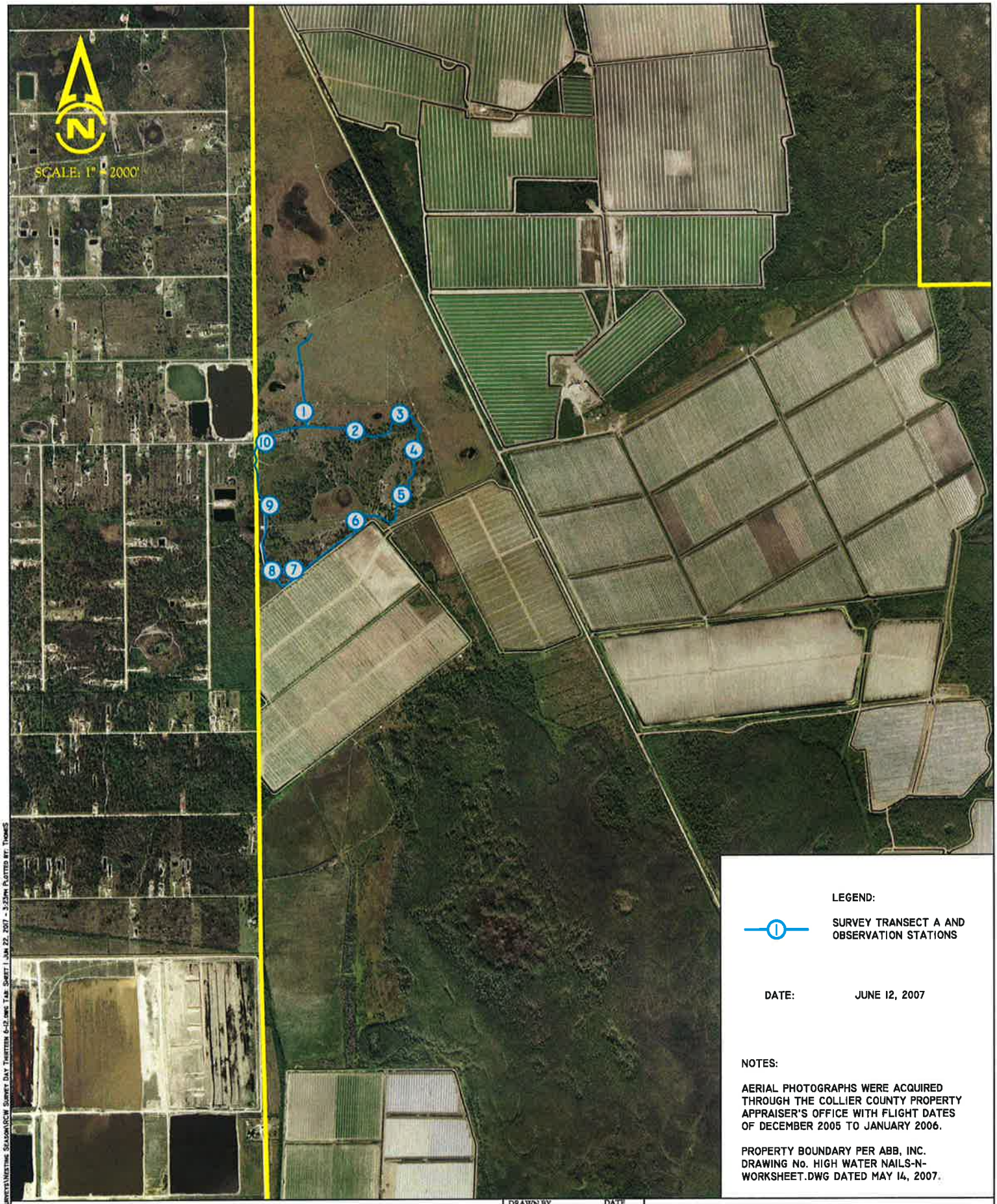


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/12/07
REVIEWED BY	DATE
C.G.R.	6/12/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEHA\USDCW Surveys\Nesting Season\DCW Survey Day Twelve 6-11.dwg Tab: Sheet 3 Jun 22, 2007 - 3:09pm Plotted By: Thomas



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: JUNE 12, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

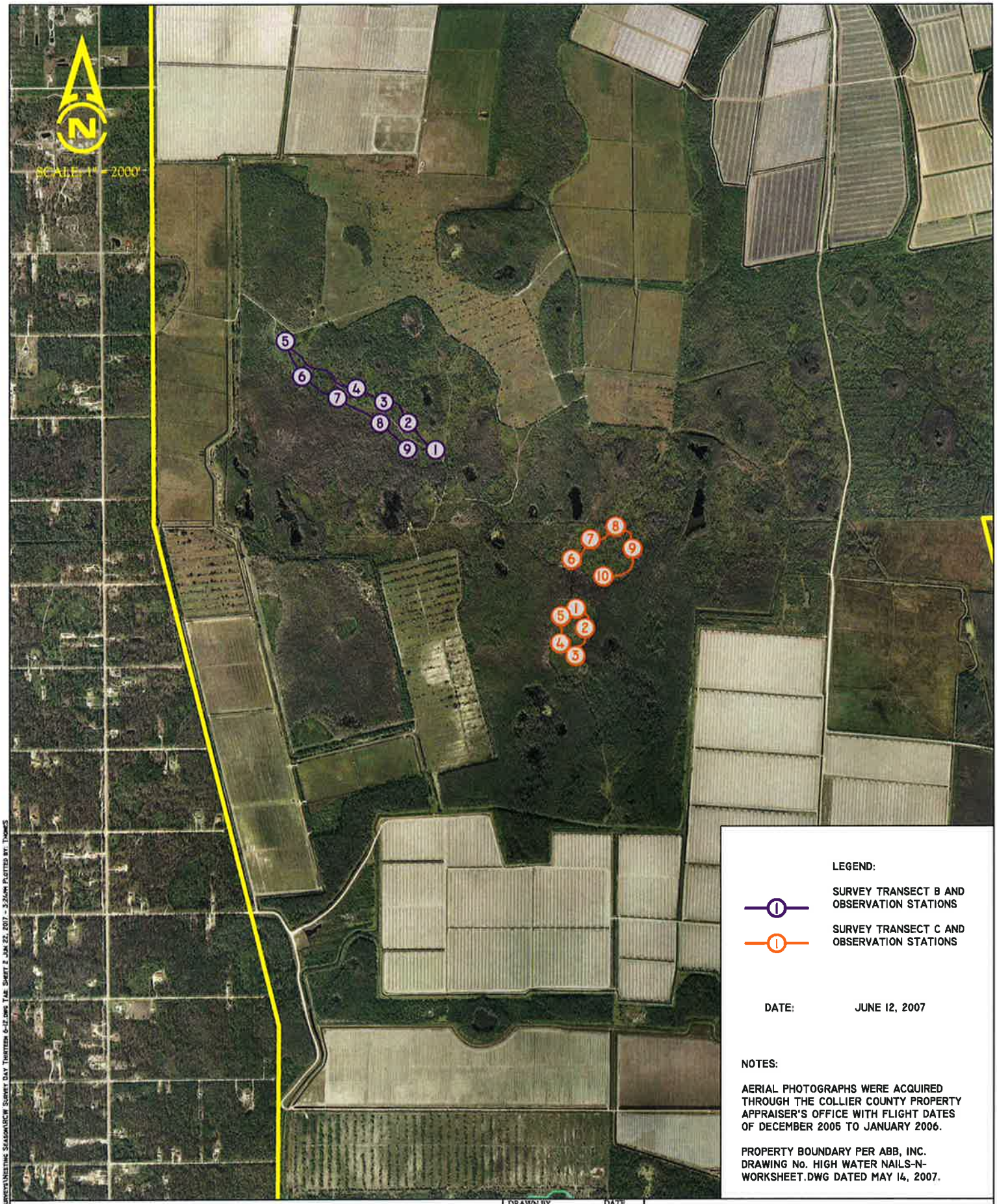
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/18/07
REVIEWED BY	DATE
C.G.R.	6/18/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05ZEN\ARCW Surveys\Nesting Season\RCW Survey Day Thirteen 6-12.dwg Tab: Sheet 1 Jun 22, 2007 - 3:23pm Plotted by: ThomeS



LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: JUNE 12, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

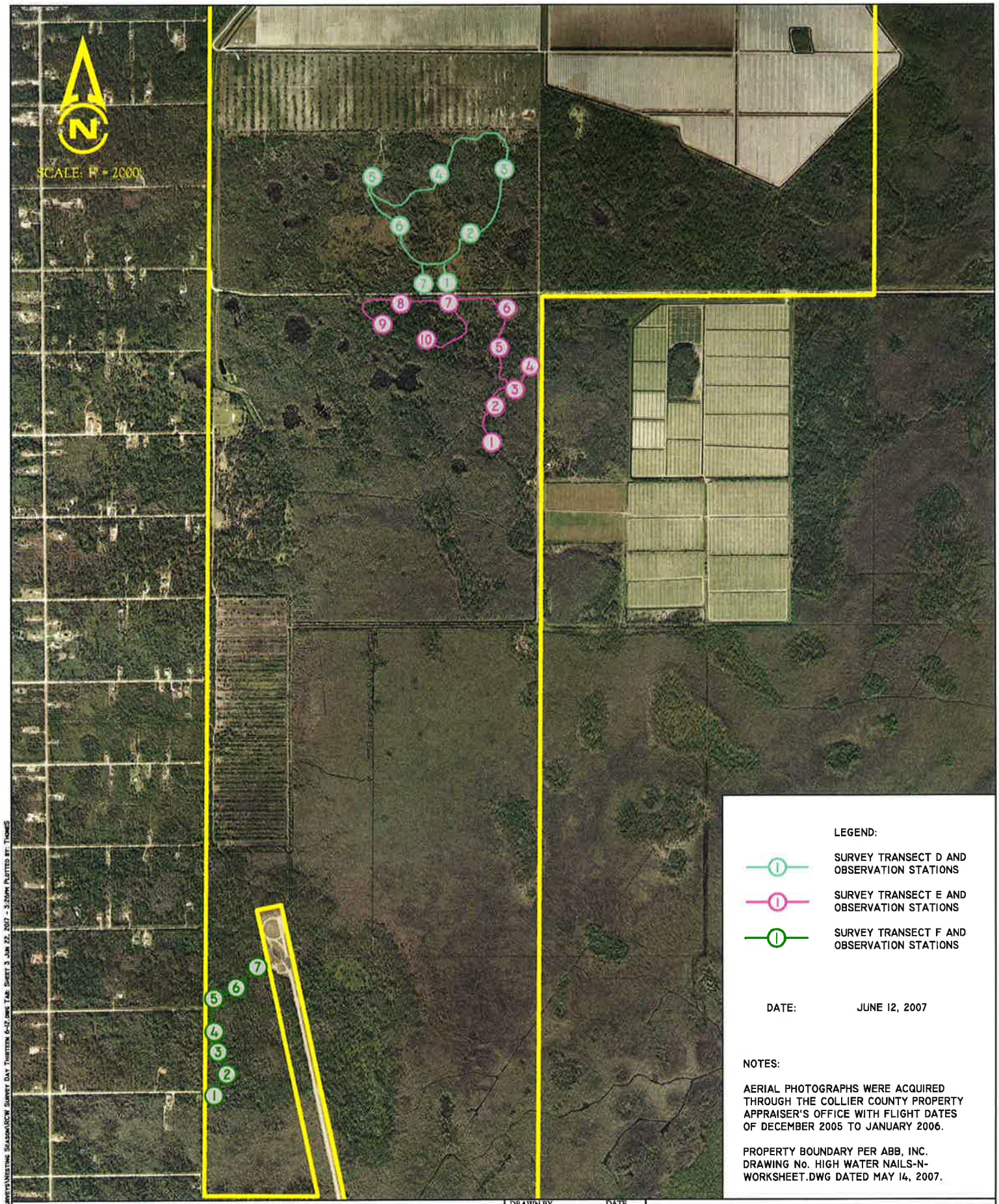
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/18/07
REVIEWED BY	DATE
C.G.R.	6/18/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN4\USRCW Surveys\Nesting Season\RCW Survey Day Thirteen 6-12.dwg Tab: Sheet 2 Jun 22, 2007 - 3:32pm Plotted by: Thomas

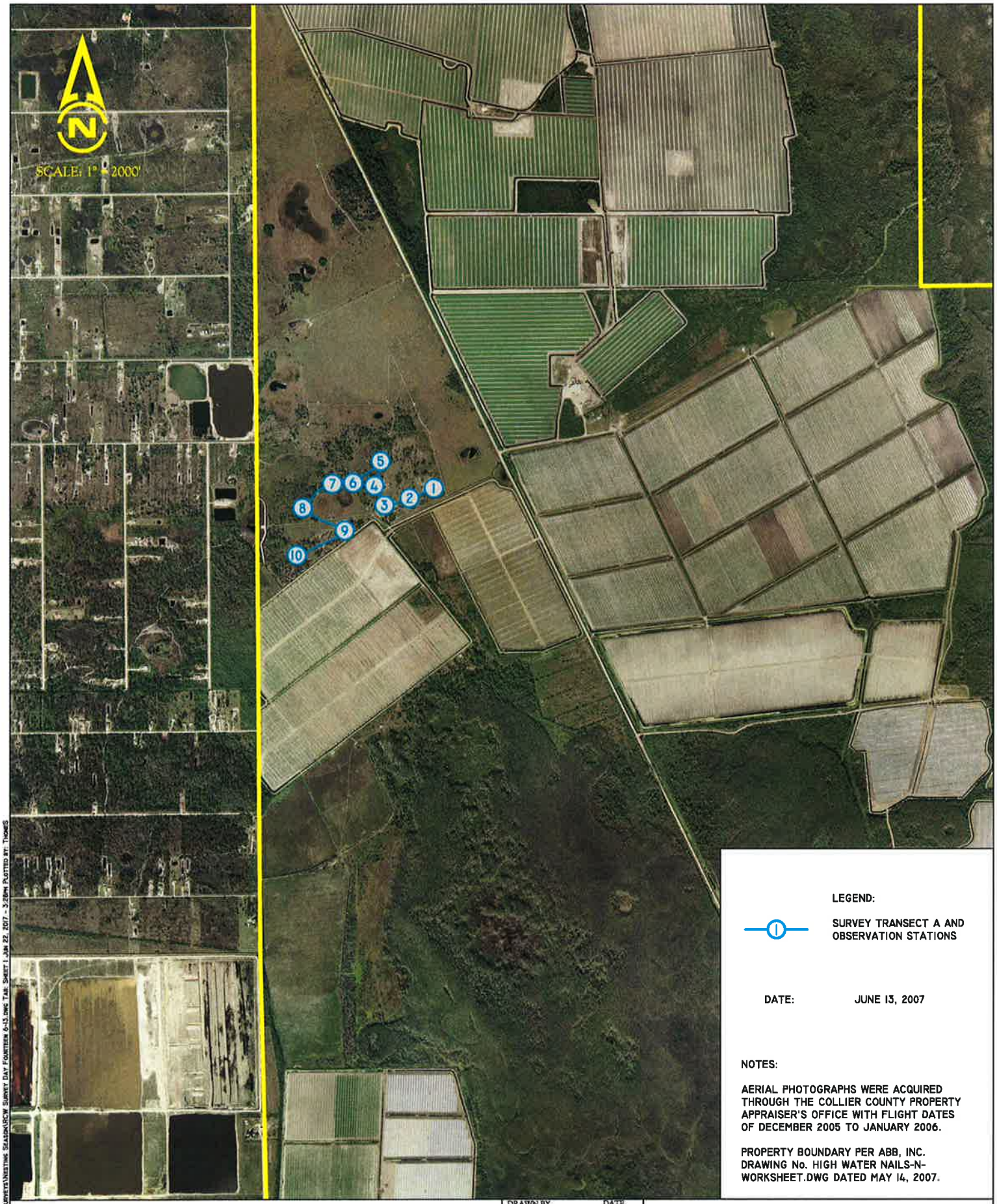


RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/18/07
REVIEWED BY	DATE
C.G.R.	6/18/07
REVISED	DATE

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists

J:\2005\05CEN4\BUSCW SURVEYS\NESTING SEASON\BCW SURVEY DAY THIRTEEN 6-12.DWG TAB: SHEET 3 JUN 22, 2007 - 3:20PM PLOTTED BY: THOMES



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SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: JUNE 13, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

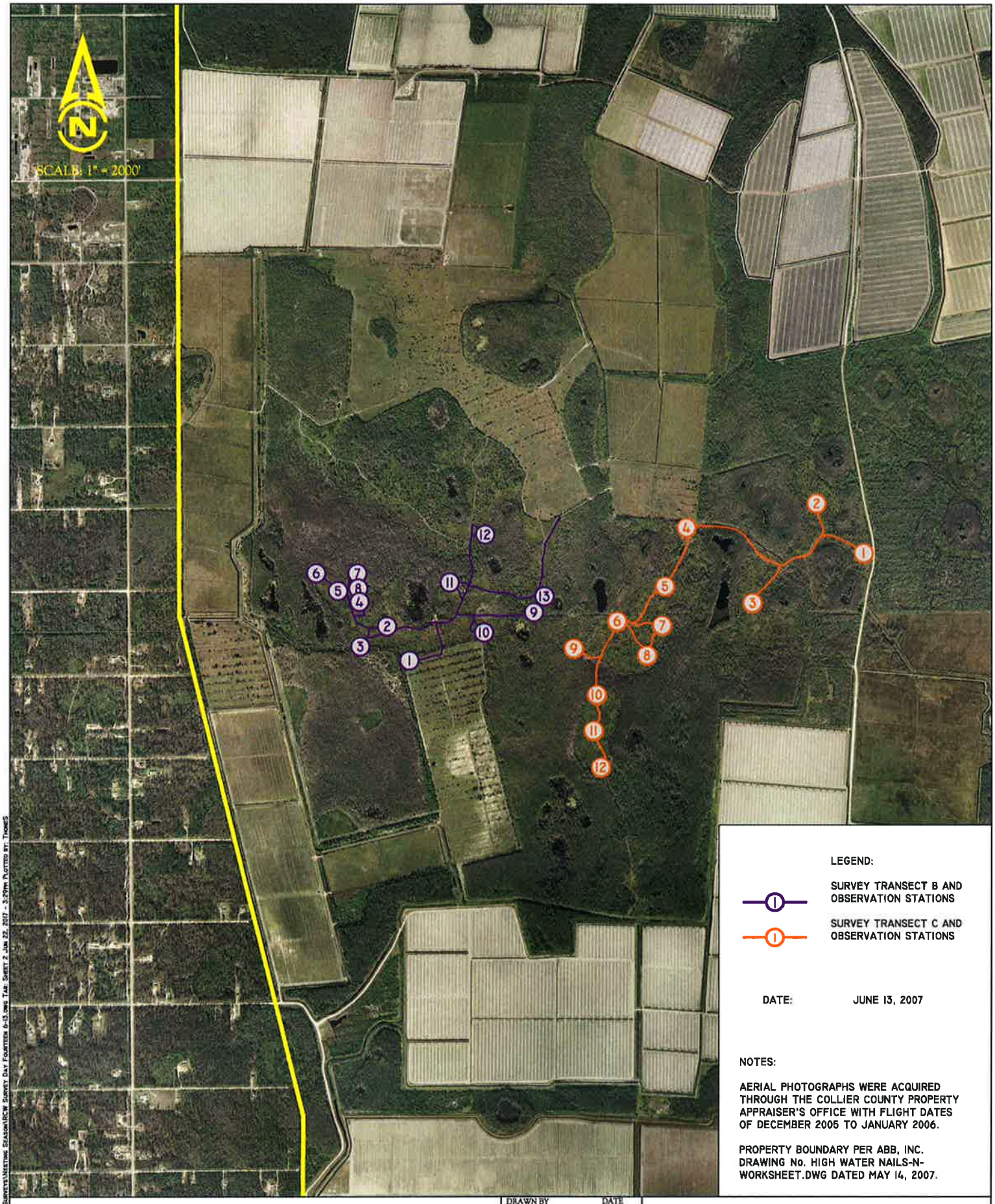
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/21/07
REVIEWED BY	DATE
C.G.R.	6/21/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CBMI\BIRDS\NESTING SEASON\RCW SURVEY DAY FOURTEEN 6-13.DWG TAB: SHEET 1 JUN 22, 2007 - 3:28PM PLOTTED BY: TYLER



RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/21/07
REVIEWED BY	DATE
C.G.R.	6/21/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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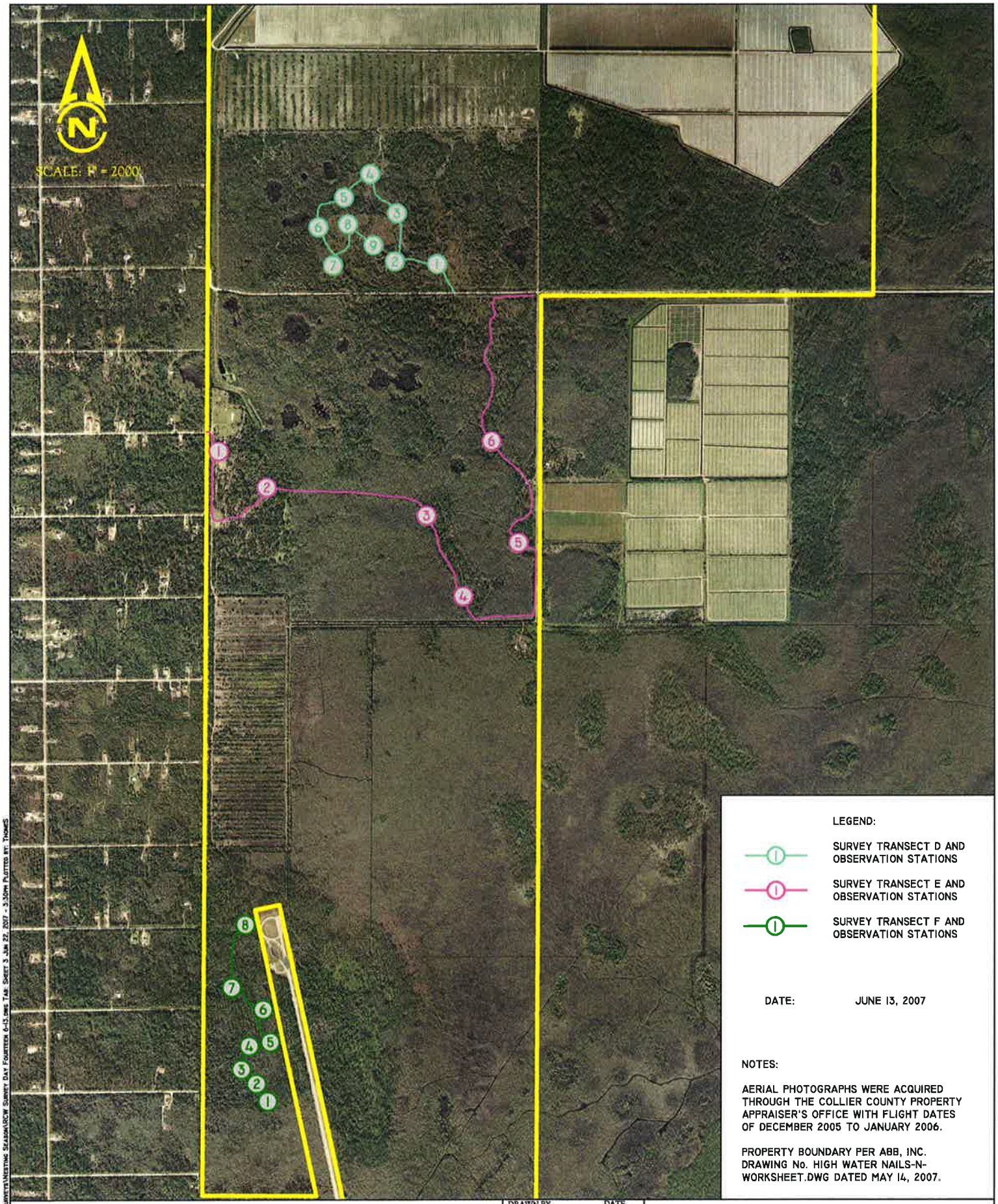
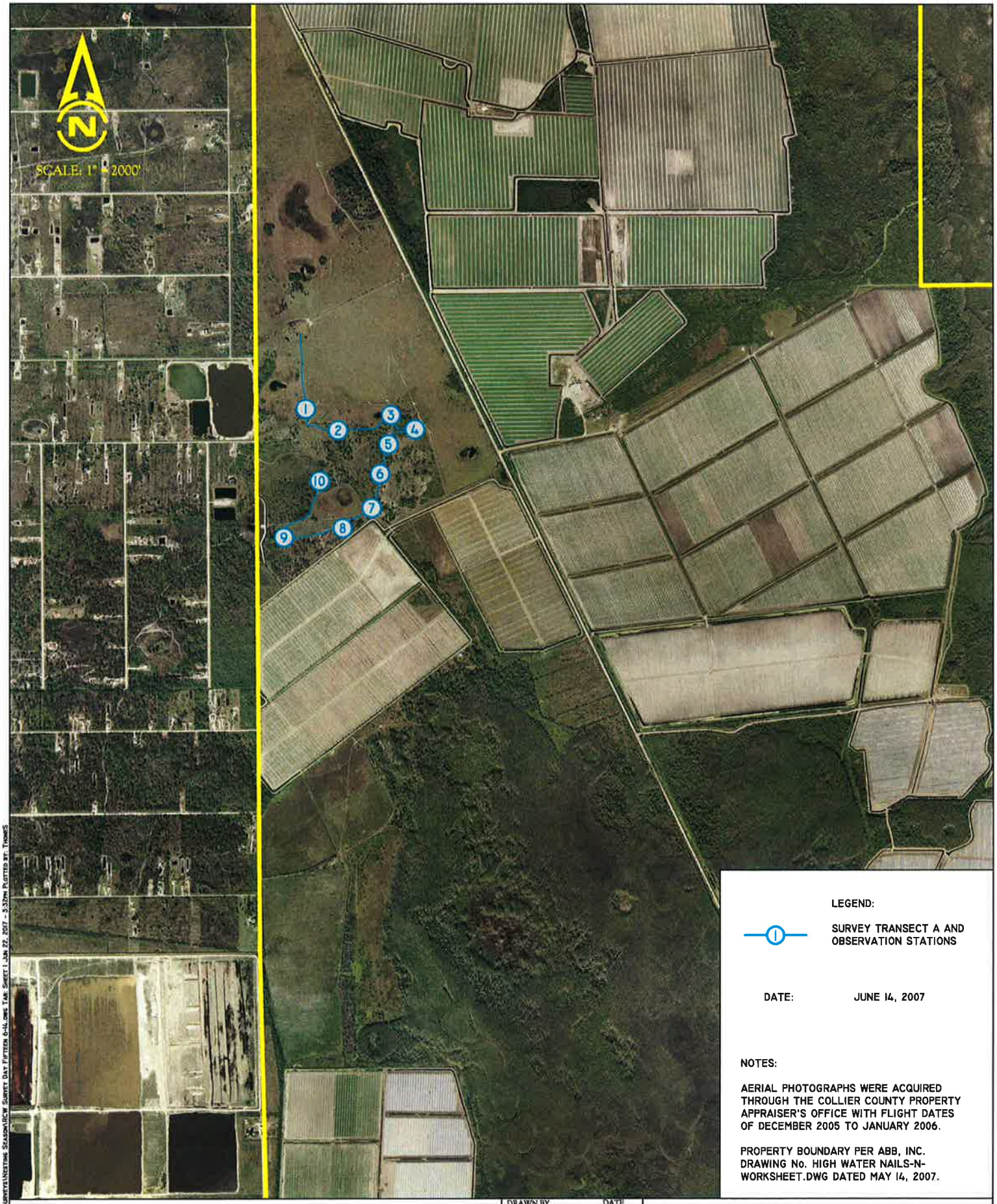


RED-COCKADED WOODPECKER
NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/21/07
REVIEWED BY	DATE
C.G.R.	6/21/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05csmi\arcw surveys\nesting season\rcw survey day fourteen 6-13.dwg Tab: Sheet 3 Jun 22, 2007 - 3:30pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT A AND OBSERVATION STATIONS

DATE: JUNE 14, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

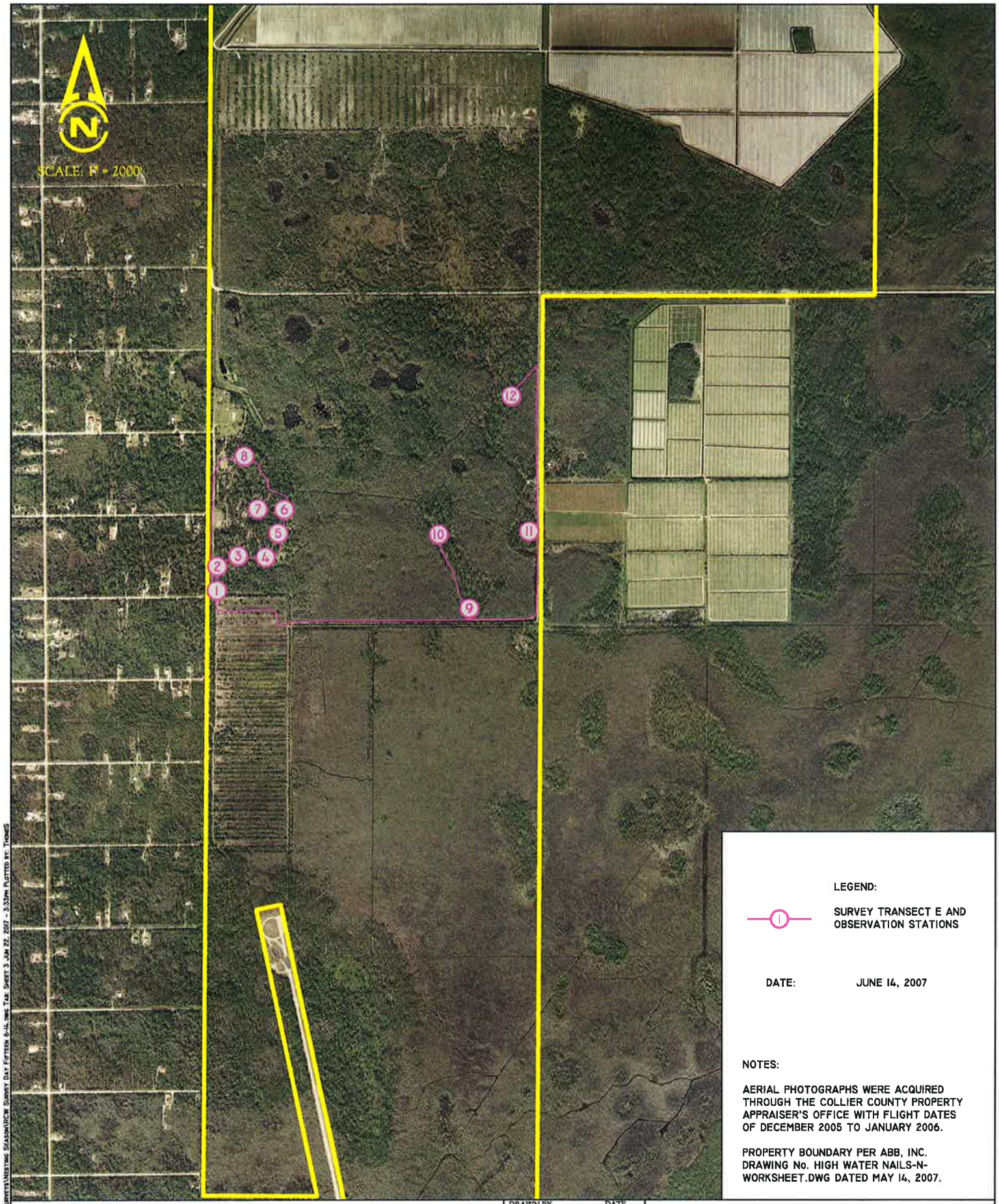
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05-CDN\ABB\RCW Surveys\Nesting Season\RCW Survey Day Fifteen 6-45.dwg Tab: Sheet1 Jun 22, 2017 - 3:33pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT E AND OBSERVATION STATIONS

DATE: JUNE 14, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
S.C.	6/7/07
REVIEWED BY	DATE
C.G.R.	6/7/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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APPENDIX C

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY FIELD OBSERVATIONS

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 15, 2007
Survey Transect: B
Start time of survey: 0800 **Weather conditions:** Clear skies, little to no wind, and temperatures in the low 70's.

End time of survey: 1130 **Weather conditions:** Mostly clear skies, north winds at 4-8 mph, and temperatures in the high 80's.

Observer: Alicia Kruse

Station	Time	Field Notes
NOTE: Late survey start time due to blocked driving access, lock damage, need to access property on foot.		
1	0805	Observed 10± white ibis and 3 glossy ibis perched in pine-snag, great egret, and common grackle. Heard red-bellied woodpecker, mourning dove, and Florida sandhill cranes.
2	0825	Heard and observed red-bellied woodpecker. Heard blue-gray gnatcatcher, gray catbirds, common grackles, and Florida sandhill cranes.
3	0847	Heard Northern cardinal, white-eyed vireo, gray catbirds, and pine warbler. Observed gray squirrel. Heard and observed downy woodpecker and red-bellied woodpecker.
4	0903	Heard and observed red-shouldered hawk, Northern cardinal, and red-bellied woodpecker. Heard gray catbirds. (Wind picked up from the north.)
5	0922	Observed Northern cardinal and black vulture. Heard downy woodpecker and Northern mockingbird. Heard and observed red-bellied woodpecker and gray catbird.
6	0945	Observed bear cub tracks heading north on trail, four black vultures, and Northern cardinal.
7	1006	Heard and observed gray catbird and American crow. Observed two black vultures.
8	1025	Observed bear cub tracks continuing north on trail. Heard red-shouldered hawk and gray catbird.
9	1044	Heard and observed three palm warblers and Northern cardinal. Observed blue jay.
10	1110	Observed 15± migratory sandhill cranes, little blue heron, and 2 white ibis foraging. Heard and observed Northern cardinal and blue jay.
	1150	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 15, 2007
Survey Transect: C
Start time of survey: 0740 **Weather conditions:** Clear skies, calm winds, and temperatures in the low 70's.

End time of survey: 1130 **Weather conditions:** Partly cloudy skies, winds at 5-10 mph, and temperatures in the mid 80's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0740	Heard pileated woodpecker and gray catbird.
2	0753	Heard gray catbirds, Northern cardinal, pileated woodpecker, great crested flycatcher, and Carolina wren. Observed mourning doves.
3	0813	Heard blue-gray gnatcatcher and gray catbirds.
4	0835	Heard gray catbirds, red-bellied woodpecker, and common ground doves.
5	0855	Heard red-shouldered hawk. Heard and observed common grackles and red-bellied woodpecker.
6	0922	Observed raccoon tracks. Heard red-shouldered hawk, gray catbirds, and blue-gray gnatcatcher. Observed black vultures soaring overhead.
7	0942	Heard Northern cardinals and gray catbirds.
8	1000	Heard red-shouldered hawk and gray catbird. Observed turkey vultures soaring.
9	1015	Heard downy woodpecker. Observed turkey vultures and black vultures.
10	1035	Heard gray catbirds and red-bellied woodpecker.
11	1105	Observed great blue heron and belted kingfisher at pond, glossy ibis in trail, deer tracks, red-shouldered hawk, gray catbirds, red-bellied woodpecker, and Carolina wren.
	1130	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 15, 2007
Survey Transect: D
Start time of survey: 0700 **Weather conditions:** Clear skies, no wind, and temperature in the low-to-mid 70's.

End time of survey: 1040 **Weather conditions:** Clear skies, east winds at 5-10 mph, and temperature in the low 80's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0700	Heard gray catbird, fish crow, red-shouldered hawk, and pileated woodpecker. Observed gray catbird and fish crow.
2	0743	Heard and observed downy and red-bellied woodpeckers foraging on live pines, Northern mockingbird, Carolina wren, mourning dove, and red-shouldered hawk.
3	0821	Heard and observed mourning dove, blue jay, Northern cardinal, pine warblers, Carolina wren, red-bellied woodpecker flying north, and gray catbird.
4	0856	Heard and/or observed red-bellied woodpeckers foraging on live pines, gray catbird, red-shouldered hawk, and white ibis flying to the west.
5	0936	Heard and/or observed gray catbird, pine warbler, Carolina wren, turkey vultures, fish crows, and blue jay.
6	1012	Heard and/or observed red-bellied woodpecker, Northern cardinal, blue jay, Carolina wren, gray catbird, downy woodpecker flying to the south, and turkey vultures.
	1040	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 15, 2007
Survey Transect: E
Start time of survey: 0730 **Weather conditions:** Clear skies, calm winds, and temperatures in the low 70's.

End time of survey: 1129 **Weather conditions:** Partly cloudy skies, east-southeast winds at 4 mph, and temperatures in the high 80's.

Observer: David Anthony

Station	Time	Field Notes
1	0730	Heard cows to the northeast, blue-gray gnatcatcher to the west, and blue jay to the west.
2	0750	Heard American crow to the northwest, Northern flicker to the southwest, blue-gray gnatcatcher to the north, red-shouldered hawk to the south, and cows to the north.
3	0817	Heard and observed Northern cardinal to the west. Heard blue-gray gnatcatcher to the west and cows to the northwest.
4	0837	Heard red-bellied woodpecker to the east, blue jay to the southwest, and common grackle to the southeast. Observed Northern cardinal to the north.
5	0855	Heard pine warbler to the west, blue-gray gnatcatcher to the southwest, red-bellied woodpecker to the south, and Northern flicker to the northeast.
6	0912	Heard Northern cardinal to the southeast and blue jay to the west.
7	0930	Heard blue jays to the west and north and red-shouldered hawk to the south.
8	0945	No birds heard or observed.
9	1001	No birds heard or observed.
10	1015	Heard blue jay to the west.
11	1032	Heard red-shouldered hawk to the southeast.
12	1050	Heard blue-gray gnatcatcher to the southwest.
13	1109	No birds heard or observed.
14	1120	Heard blue jay to the northwest.
	1129	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 15, 2007
Survey Transect: F
Start time of survey: 0720 **Weather conditions:** Sunny skies, humid, calm northeast winds at 3 mph, and temperatures in the low 70s.

End time of survey: 1135 **Weather conditions:** Partly cloudy skies, humid, northeast winds at 3-7 mph, and temperatures in the high 80s.

Observer: William R. Cox

Station	Time	Field Notes
1	0720	Heard gray catbird and mourning dove. Observed two deer.
2	0735	Heard Northern cardinal, brown thrasher, and mourning dove.
3	0755	Heard blue-gray gnatcatcher and Carolina wren.
4	0815	Observed red-bellied woodpecker.
5	0840	Heard Carolina wren and red-shouldered hawk. Observed downy woodpecker and blue jay.
6	0905	Heard gray catbird. Observed gray squirrel and deer.
7	0930	Heard downy woodpecker. Observed gray catbird and Northern cardinal.
8	0955	Observed red-bellied woodpecker, gray catbird, and deer.
9	1020	Heard Carolina wren and blue-gray gnatcatcher.
10	1050	Heard and observed Carolina wren. Heard downy woodpecker.
NOTE: Bear and panther tracks observed on trails.		
	1135	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 15, 2007
Survey Transect: G
Start time of survey: 0725 **Weather conditions:** Clear skies, north winds at 0-5 mph, and temperatures in the low 70's.

End time of survey: 1130 **Weather conditions:** Partly cloudy skies, north winds at 5-10 mph, and temperatures in the mid 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0725	Observed great egret. Heard and observed Northern mockingbird, blue-gray gnatcatcher, and Northern cardinal. Observed white ibis.
2	0735	Heard and observed Northern cardinal and blue-gray gnatcatcher. Observed great blue heron.
3	0745	Heard and observed blue-gray gnatcatcher. Observed little blue heron, common ground dove, Northern cardinal, and great crested flycatcher.
4	0755	Heard and observed warbler sp., hairy woodpecker, great egret, Northern cardinal, and blue-gray gnatcatcher.
5	0810	Heard and observed tri-colored heron, white ibis, gray catbird, Northern mockingbird, blue-gray gnatcatcher, and common grackle.
6	0825	Heard and observed red-shouldered hawk, white ibis, common grackle, blue-gray gnatcatcher, and great egret.
7	0835	Heard and observed red-shouldered hawk, common grackle, blue-gray gnatcatcher, and red-bellied woodpecker.
8	0900	Observed anhinga, wood stork, white ibis, little blue heron, red-shouldered hawk, and cattle egret. Heard and observed great-crested flycatcher, blue-gray gnatcatcher, common grackle, and Northern mockingbird.
9	0920	Observed little blue heron, white ibis, and red-shouldered hawk. Heard and observed blue-gray gnatcatcher and common grackle.
10	0930	Heard and observed blue-gray gnatcatcher, common grackle, and Florida black bear.
11	1030	Heard and observed blue-gray gnatcatcher, cattle egret, and belted kingfisher.

Station	Time	Field Notes
12	1040	Heard and observed red-shouldered hawk, common grackle, and blue-gray gnatcatcher.
13	1050	Heard and observed anhinga, black vulture, and little blue heron.
14	1100	Observed anhinga and blue-gray gnatcatcher.
15	1115	Observed tri-colored heron and little-blue heron. Heard red-shouldered hawk, black vulture, and common grackle.
	1135	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 16, 2007
Survey Transect: B
Start time of survey: 0720 **Weather conditions:** Partly cloudy skies, northeast winds at 0-3 mph, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Mostly clear skies, northeast winds at 3-8 mph, and temperatures in the mid 80's.

Observer: Alicia Kruse

Station	Time	Field Notes
1	0723	Heard Northern cardinal and gray catbird. Heard and observed red-shouldered hawk.
2	0739	Heard gray catbirds, red-bellied woodpecker, sandhill cranes, and blue-gray gnatcatcher. Observed black vulture.
3	0758	Heard and observed gray catbirds, red-bellied woodpecker, and Northern cardinal. Observed mourning dove.
4	0816	Heard and observed gray catbirds, Northern cardinals, and red-shouldered hawk. Observed white ibis fly from south to north 60± feet from the ground. Heard red-bellied woodpeckers and sandhill cranes.
5	0831	Heard common grackles, gray catbirds, white-eyed vireo, and mourning dove. Observed gray squirrel.
6	0847	Heard Northern cardinals, gray catbirds, and downy woodpecker. Heard and observed red-bellied woodpecker.
7	0900	Heard gray catbirds, Northern mockingbird, and sandhill cranes. Heard and observed red-bellied woodpecker.
8	0916	Heard and observed four common grackles, red-bellied woodpecker, and pine warbler. Heard sandhill cranes and Northern cardinal.
9	0937	Heard red-bellied woodpecker and blue jay. Heard and observed gray catbird. Heard downy woodpecker.
10	0953	Observed pine warbler. Heard and observed gray catbird. Heard downy woodpecker.
11	1014	Heard red-shouldered hawk and Northern cardinal.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 16, 2007
Survey Transect: C
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies, winds at 0-5 mph, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, winds at 0-10 mph, and temperatures in the mid 80's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0730	Heard and observed red-bellied woodpecker, blue-gray gnatcatcher, pine warbler, and kestrel. Observed mourning dove. Heard and observed two sandhill cranes fly north. Heard red-shouldered hawk.
2	0750	Heard white-eyed vireo, red-bellied woodpecker, Northern cardinal, red-shouldered hawk, Carolina wren, gray catbird, and great crested flycatcher.
3	0815	Heard common ground dove. Heard and observed red-bellied woodpecker and gray catbird. Heard sandhill cranes. Heard and observed Northern cardinals.
4	0839	Heard pine warblers, gray catbirds, red-bellied woodpecker, red-shouldered hawk, downy woodpecker, and Carolina wren.
5	0857	Heard gray catbird, red-bellied woodpecker, blue-gray gnatcatcher, and Northern parula.
6	0919	Heard and observed red-bellied woodpecker. Observed black vultures soaring over cypress, gray catbirds, and red-shouldered hawk.
7	0940	Heard red-bellied woodpecker, downy woodpecker, Northern parula, and Northern mockingbird.
8	0957	Observed belted kingfisher flying toward pond and kestrel. Heard and observed mourning doves, common nighthawk, and red-bellied woodpecker. Heard common ground doves.
9	1013	Heard and observed common ground dove, Northern mockingbird, blue-gray gnatcatcher, Carolina wren, and red-bellied woodpecker. Observed turkey vulture.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 16, 2007
Survey Transect: D
Start time of survey: 0725 **Weather conditions:** Clear skies, no wind, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, east winds at 5-15 mph, and temperatures in the low 80's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0725	Heard and/or observed gray catbird, American crow, Northern mockingbird, red-shouldered hawk, red-bellied woodpecker foraging on pine snag, American kestrel, and great blue heron. Heard sandhill cranes to the northeast.
2	0750	Heard and/or observed gray catbird, red-bellied woodpecker foraging on live pines, red-shouldered hawk, downy woodpecker foraging on live pines, and common ground dove.
3	0825	Heard common ground dove, mourning dove, red-shouldered hawk, blue jay, gray catbird, and pine warblers.
4	0907	Heard and/or observed kestrel, Carolina wren, and pileated woodpecker to east.
5	0941	Heard and/or observed blue jay and red-bellied woodpecker foraging on pine snag to west.
6	1008	Heard and/or observed kestrel, gray catbird, blue jay, and cattle egret.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 16, 2007
Survey Transect: E
Start time of survey: 0715 **Weather conditions:** Clear skies, east winds at 0-5 mph, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, east winds at 10-15 mph, and temperatures in the mid 80's.

Observer: Matt Brosious

Station	Time	Field Notes
1	0715	Heard mourning dove and gray catbird to the east, and Northern cardinal to the north.
2	0735	Heard gray catbird to the south and Carolina wren to the southwest.
3	0745	Heard downy woodpecker to the south.
4	0800	Heard and observed red-bellied woodpecker to the south. Heard pileated woodpecker to the northwest and downy woodpecker to the east.
5	0815	Heard gray catbirds to the southwest. Heard and observed pileated woodpecker to the southwest.
6	0835	Heard gray catbird to the east and pine warbler to the southeast.
7	0855	Heard downy woodpecker to the east. Heard and observed gray catbirds to the northeast. Observed Florida black bear 200 feet to the south and then move west out of sight.
8	0915	Heard downy woodpecker to the south. Observed mourning dove fly to the west. Heard and observed red-bellied woodpecker to the east. Heard great crested flycatcher to the south.
9	0935	Heard white-eyed vireo to the northeast. Observed gray catbird to the east. Heard pileated woodpecker to the southeast.
10	1000	Heard red-bellied woodpecker to the west. Heard and observed red-shouldered hawk to the east. Heard mourning dove to the northwest. Heard and observed downy woodpecker to the west.
11	1015	Heard Northern cardinal to the south and pileated woodpecker to the north.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 16, 2007
Survey Transect: F
Start time of survey: 0730 **Weather conditions:** Sunny skies, humid, calm wind, and temperatures in the low 70's.

End time of survey: 1035 **Weather conditions:** Humid with temperatures in the mid-to-high 80's.

Observer: William R. Cox

Station	Time	Field Notes
1	0730	Heard American crow, blue jay, and Carolina wren.
2	0745	Observed three pileated woodpeckers.
3	0805	Observed red-shouldered hawk.
4	0830	Heard Carolina wren and great crested flycatcher. Observed Northern cardinal.
5	0855	Heard Carolina wren and blue jay. Observed red-bellied woodpecker.
6	0915	Heard gray catbird. Observed turkey vulture and downy woodpecker.
7	0940	Heard blue-gray gnatcatcher. Observed two pileated woodpeckers.
8	1010	Heard gray catbird, Northern cardinal, and American crow.
9	1035	Heard downy woodpecker. Observed Carolina wren and mourning dove.
NOTE: Observed panther scrapes and scratch tree; bear signal trees.		
	1110	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 16, 2007
Survey Transect: G
Start time of survey: 0725 **Weather conditions:** Partly cloudy skies, northeast winds at 0-5 mph, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, northeast winds at 5-10 mph, and temperatures in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0725	Observed turkey vulture. Heard and observed blue-gray gnatcatcher. Observed cattle egret.
2	0735	Heard and observed mourning dove, gray catbird, and Northern cardinal.
3	0745	Heard and observed tri-colored heron, Northern cardinal, and blue-gay gnatcatcher. Observed cattle egret.
4	0755	Heard and observed common ground dove and common grackle. Heard Northern cardinal. Observed warbler sp.
5	0805	Heard and observed Northern cardinal, common grackle, blue-gray gnatcatcher, and white ibis.
6	0823	Heard and observed little blue heron, tri-colored heron, osprey, white ibis, common grackle, and warbler sp.
7	0835	Heard and observed white ibis, red-shouldered hawk, and common grackle.
8	0845	Heard and observed great egret and Northern mockingbird.
9	0910	Observed white ibis, anhinga, little blue heron, cattle egret, great egret, Northern cardinal, and common grackle.
10	0925	Heard and observed Northern cardinal, white ibis, little blue heron, common grackle, and red-shouldered hawk.
11	0935	Heard common grackle and Northern cardinal. Observed warbler sp. and black vulture.
	1110	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 17, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Mid 70's, calm wind, and 10 percent cloud cover.

End time of survey: 1030 **Weather conditions:** Mid 80's, calm wind, and 10 percent cloud cover.

Observer: Marijke Noens

Station	Time	Field Notes
1	0730	Heard gray catbird to the south, pileated woodpecker, and sandhill cranes to the north.
2	0745	Heard white-eyed vireo to the west. Observed gray catbird to the northeast.
3	0800	Observed gray catbird to the east and Northern cardinal to the south.
4	0815	Observed Northern cardinal, and white ibis flying northwest. Heard gray catbirds, Carolina wren, blue jay, and red-shouldered hawk to the north, and yellow-bellied woodpecker, black-and-white warblers, and common yellow-throat to the west.
5	0830	Observed wood stork fly overhead to the east, red-shouldered hawk to the west, and great egret fly overhead to the southwest. Heard gray catbirds in all directions and red-bellied woodpecker to the south.
6	0845	Observed Northern cardinal to the north. Heard red-shouldered hawk to the west and blue-gray gnatcatcher and sandhill cranes to the northeast.
7	0900	Observed white ibis fly overhead to the north. Heard downy woodpecker and gray catbirds in all directions, Carolina wren to the north and west, Northern cardinal to the west, and red-bellied woodpecker and kingfisher to the northwest.
8	0920	Heard and observed red-bellied woodpecker to the north. Observed two Northern cardinals to the north, and glossy ibis and white ibis flying to the southeast. Heard white-eyed vireo to the east.
9	0945	Heard blue-gray gnatcatcher to the west, Carolina wren to the east, and gray catbirds in all directions.
10	1010	Heard and observed red-bellied woodpecker to the southeast. Observed Northern cardinal to the south. Heard catbirds in all directions.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 17, 2007
Survey Transect: C
Start time of survey: 0655 **Weather conditions:** Clear skies, calm wind, and temperature in the mid 70's.

End time of survey: 1030 **Weather conditions:** Clear skies, calm wind, and temperature in the low 80's.

Observer: Stuart Spoede

Station	Time	Field Notes
1	0700	Observed great egret. Heard red-shouldered hawk.
2	0715	Heard and observed red-shouldered hawk. Observed white ibis flying south and west, and Northern cardinal.
3	0730	Observed red-bellied woodpecker and white ibis flying north. Heard pine warbler.
4	0745	Observed approximately 30 white ibis flying southeast, pileated woodpecker, blue-gray gnatcatcher, and red-shouldered hawk. Heard Northern mockingbird.
5	0800	Observed Carolina wren, and cattle egret flying west. Heard great-crested flycatcher.
6	0815	Observed turkey vulture, downy woodpecker, and Northern mockingbird.
7	0830	Observed pileated woodpecker and blue-gray gnatcatcher.
8	0845	Observed six turkey vultures and American kestrel. Heard red-shouldered hawk.
9	0900	Observed red-bellied woodpecker and blue-gray gnatcatcher. Heard red-shouldered hawk.
10	0915	Observed great-crested flycatcher. Heard red-shouldered hawk.
11	0930	Observed Northern mockingbird and two blue-gray gnatcatchers. Heard red-shouldered hawk to the south and pine warbler to the west.
12	0945	Observed two American crows and two white ibis flying east. Heard Carolina wren.

Station	Time	Field Notes
13	1000	Observed Northern mockingbird. Heard white-eyed vireo.
14	1015	Heard great-crested flycatcher.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 17, 2007
Survey Transect: D
Start time of survey: 0738 **Weather conditions:** Mostly cloudy skies, very foggy, little to no wind, and temperature in the mid 70's.

End time of survey: 1030 **Weather conditions:** Mostly clear skies, wind 3-5 mph northeast, and temperature in the high 80's.

Observer: Alicia Kruse

Station	Time	Field Notes
1	0740	Heard and observed Northern cardinal and three common yellow-throats. Heard sandhill cranes, gray catbirds, and red-shouldered hawk.
2	0801	Heard and observed two mourning doves and Northern mockingbirds. Observed white ibis flying from west to east approximately 100 feet from the ground. Heard Northern cardinal, gray catbirds, and blue jay.
3	0817	Observed three white-tailed deer. Heard gray catbirds, red-bellied woodpeckers, mourning dove, Northern cardinal, and American crow.
4	0838	Heard and observed red-bellied woodpecker, mourning doves, and two pileated woodpeckers. Observed same three white-tailed deer. Heard gray catbirds, red-shouldered hawk, and Northern cardinals.
5	0855	Heard and observed Northern cardinal. Heard mourning dove, red-bellied woodpecker, and gray catbirds.
6	0911	Heard and observed Northern mockingbird. Heard white-eyed vireo, blue jay, gray catbirds, and blue-gray gnatcatcher.
7	0928	Heard and observed mourning dove and gray catbird. Heard downy woodpecker and common grackles.
8	0945	Heard gray catbird, pileated woodpecker, and Northern cardinal.
9	0959	Heard red-bellied woodpecker, blue jay, gray catbird, and Northern cardinal.
10	1012	Observed black vulture. Heard mourning dove and downy woodpecker.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 17, 2007
Survey Transect: E
Start time of survey: 0720 **Weather conditions:** Clear skies, calm winds, low fog and temperature in the low 70's.

End time of survey: 1040 **Weather conditions:** Sunny skies, wind 3-5 mph, and temperature in the low 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0720	Observed red-bellied woodpeckers, barred owl, and rabbits. Heard gray catbirds, and sandhill cranes in the distance to the east.
2	0740	Heard and observed gray catbirds and red-bellied woodpeckers. Heard Cuban tree frogs.
3	0800	Observed gray catbirds, Northern mockingbirds, grey squirrels, and Northern cardinals.
4	0830	Observed great egret flying, rabbit, and black bear scat at feeder. Heard gray catbirds and mourning doves.
5	0855	Heard and observed red-shouldered hawk and red-bellied woodpecker. Observed great blue heron flying.
6	0915	Heard and observed gray catbirds, red-bellied woodpecker, and pileated woodpecker. Observed box turtle and Northern cardinal.
7	0930	Heard and observed grey squirrels and gray catbirds.
8	0945	Observed three deer. Heard gray catbirds and red-bellied woodpecker.
9	1000	Heard and observed gray catbirds and red-shouldered hawk. Observed black vultures flying.
10	1015	Heard and observed gray catbirds, American crow, and mourning doves. Heard white-eyed vireo and grey squirrels.
11	1030	Heard and observed red-bellied woodpeckers, red-shouldered hawk, gray catbirds, and Northern cardinals.
	1040	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 17, 2007
Survey Transect: F
Start time of survey: 0725 **Weather conditions:** Light fog, calm wind, temperature in the low 70's and humid.

End time of survey: 1035 **Weather conditions:** Partly cloudy skies, wind 0-3 mph northeast, and temperature in the low to mid 80's.

Observer: William R. Cox

Station	Time	Field Notes
1	0725	Observed turkey roosting. Heard catbird.
2	0740	Heard gray catbird and gray squirrel.
3	0800	Observed American crow. Heard gray catbird and Carolina wren.
4	0820	Observed Northern cardinal. Heard Carolina wren.
5	0835	Observed turkey in trail. Heard gray catbird and red-shouldered hawk.
6	0855	Observed blue jays. Heard Carolina wren and blue-gray gnatcatcher.
7	0915	Observed blue jays. Heard pileated woodpeckers.
8	0935	Observed blue jays. Heard Carolina wren and gray catbird.
9	0955	Observed brown thrasher. Heard red-bellied woodpecker.
	1035	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 17, 2007
Survey Transect: G
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies, wind 0-5 mph north-northeast, and temperature in the low 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, wind 0-5 mph east, and temperature in the high 80's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0730	Heard and observed belted kingfisher to the south. Observed two wood storks flying west. Heard gray catbirds and red-bellied woodpecker.
2	0749	Heard and observed gray catbirds. Observed great egret and little blue heron. Heard downy woodpecker.
3	0803	Observed belted kingfisher and red-shouldered hawk. Heard gray catbirds, red-bellied woodpecker, common grackles, and Northern cardinal.
4	0820	Heard and observed red-winged blackbirds. Heard gray catbirds.
5	0839	Heard and observed killdeer along field. Observed white ibis in cypress tree. Heard white-eyed vireo and gray catbirds.
6	0854	Observed great blue heron and little blue heron in ditch, and white ibis' perched in cypress and pine trees. Heard blue-gray gnatcatcher and red-winged blackbirds.
7	0919	Observed raccoon tracks, armadillo tracks, otter seal, great egrets, and baby alligators in canal. Heard Carolina wren, gray catbirds, and red-shouldered hawk.
8	0935	Heard and observed two red-shouldered hawks, red-bellied woodpecker, bobcat tracks, blue-gray gnatcatcher, and gray catbirds.
9	0956	Observed tri-color heron. Heard common grackles, white-eyed vireo, gray catbirds, and blue-gray gnatcatcher.
10	1015	Heard gray catbirds and pileated woodpecker to the east.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 18, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Foggy, calm wind, 10 percent cloud cover, and temperature in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, wind 0-5 mph southwest, 20 percent cloud cover, and temperature in the mid 80's.

Observer: Marijke Noens

Station	Time	Field Notes
1	0730	Heard and observed red-shouldered hawk to the north. Heard gray catbirds in all directions and white-eyed vireo to the south.
2	0750	Heard and observed black vulture to the west and Carolina wren to the east and west. Observed 16 white ibis flying southeast, and five common grackles flying southeast. Heard white-eyed vireo and Northern cardinal to the west, and red-bellied woodpecker to the south and northeast.
3	0805	Heard and observed red-bellied woodpecker to the north and south. Observed white ibis flying east. Heard belted kingfisher to the east.
4	0815	Observed great egret flying southeast. Heard Carolina wren and blue-gray gnatcatcher to the west and south.
5	0830	Heard and observed Northern cardinal to the north. Observed three white ibis flying south, and common yellow-throat and gray catbird to the west. Heard white-eyed vireo to the south.
6	0845	Observed gray catbird to the west, and two sandhill cranes flying southwest. Heard Carolina wren to the south, red-bellied woodpecker to the east, and Northern cardinal to the southwest.
7	0915	Heard Carolina wren and red-shouldered hawk to the south, sandhill cranes to the west, Northern cardinal to the north, and blue jay to the southeast.
8	0930	Heard and observed gray catbird to the north. Observed Northern cardinal to the south. Heard red-bellied woodpecker to the north.

Station	Time	Field Notes
9	0955	Observed gray catbird to the west, pileated woodpecker to the east and two to the north. Heard Carolina wren and blue-gray gnatcatcher to the north.
10	1010	Observed white ibis from the south fly east to west, and 10-15 white ibis fly from southeast to northwest. Heard Carolina wren to the northeast, blue jay to the southwest, pileated woodpecker to the south, blue gray gnatcatcher to the east and west, and red-bellied woodpecker to the north.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 18, 2007
Survey Transect: C
Start time of survey: 0700 **Weather conditions:** Clear skies, calm wind, and temperature in the mid 70's.

End time of survey: 1030 **Weather conditions:** Clear skies, wind 0-5 mph southeast, and temperature in the mid 80's.

Observer: Stuart Spoede

Station	Time	Field Notes
1	0700	Observed six white ibis flying west, and panther tracks. Heard white-eyed vireo and great-crested flycatcher.
2	0715	Observed Carolina wren, Northern mockingbird, and three white ibis flying west. Heard American crow.
3	0730	Observed white eyed vireo and Carolina wren. Heard pine warbler.
4	0745	Observed two Northern mockingbirds. Heard pine warbler and white-eyed vireo.
5	0800	Observed red-bellied woodpecker, two white ibis flying east, Northern mockingbird, blue-gray gnatcatcher, and American crow.
6	0815	Observed two ground doves, two Northern mockingbirds, and red-bellied woodpecker. Heard red-shouldered hawk.
7	0830	Observed red-bellied woodpecker, mourning dove, two blue-gray gnatcatcher, white ibis flying north, white ibis flying west, and pileated woodpecker.
8	0845	Observed three red-winged blackbirds, red-bellied woodpecker, blue-gray gnatcatcher, Northern cardinal. Heard heavy equipment to the south.
9	0900	Observed pileated woodpecker. Heard blue-gray gnatcatcher and red-shouldered hawk.
10	0915	Observed three pileated woodpeckers, red-shouldered hawk, two red-bellied woodpeckers, turkey, and bear scat. Heard blue-gray gnatcatcher.
11	0930	Observed pileated woodpecker and Carolina wren. Heard red-shouldered hawk and blue-gray gnatcatcher.

Station	Time	Field Notes
12	0945	Observed three red-bellied woodpeckers, Carolina wren, Northern mockingbird, and bear tracks. Heard pileated woodpecker.
13	1000	Observed red-bellied woodpecker. Heard blue-gray gnatcatcher and white-eyed vireo.
14	1015	Heard two red-shouldered hawks.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 18, 2007
Survey Transect: D
Start time of survey: 0740 **Weather conditions:** Patchy fog, calm winds, and temperature in the low 80's.

End time of survey: 1035 **Weather conditions:** Clear skies, calm winds, and temperature in the high 80's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0740	Heard and observed blue jay and gray catbird. Heard mourning dove and red-shouldered hawk.
2	0755	Heard and observed gray catbird. Heard Northern cardinal and red-bellied woodpecker.
3	0810	Heard blue-gray gnatcatcher, gray catbird, red-bellied woodpecker, and red-shouldered hawk.
4	0825	Heard and observed gray catbird. Heard blue-gray gnatcatcher, red-shouldered hawk, and Northern mockingbird.
5	0840	Heard and observed common grackles. Heard white-eyed vireo, gray catbird, and red-bellied woodpecker.
6	0855	Heard and observed gray catbird. Heard pileated woodpecker, mourning dove, blue-gray gnatcatcher, American crow, red-shouldered hawk, and red-bellied woodpecker.
7	0910	Heard and observed pileated woodpecker and gray catbird. Heard blue jay and red-shouldered hawk.
8	0925	Heard and observed gray catbird. Heard blue jay, blue-gray gnatcatcher, red-shouldered hawk, white-eyed vireo.
9	0940	Heard and observed red-shouldered hawk and gray catbird. Heard mourning dove and blue jay.
10	0955	Heard and observed common yellow-throat. Heard blue jay and gray catbird.

Station	Time	Field Notes
11	1010	Heard and observed downy woodpecker, blue-gray gnatcatcher, and Northern mockingbird. Observed unknown warbler and flock of cattle egrets flying overhead. Heard gray catbird.
12	1020	Heard downy woodpecker and blue jay.
	1035	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 18, 2007
Survey Transect: E
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies, calm winds, and temperature in the mid 70's.

End time of survey: 1000 **Weather conditions:** Partly cloudy skies, wind 0-5 mph, and temperature in the mid 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0730	Heard and observed gray catbirds and wild turkey perched in oak tree. Heard barred owl and mourning doves.
2	0745	Observed grey squirrel, Northern cardinal, and great egret flying. Heard red-shouldered hawk and gray catbirds.
3	0800	Heard and observed blue-gray gnatcatchers and red-bellied woodpeckers.
4	0815	Heard and observed gray catbirds, mourning doves, red-bellied woodpecker, and Northern mockingbird.
5	0835	Observed Northern cardinals, rabbit, and black racer.
6	0850	Observed pine warblers, two deer, barred owl, Northern cardinal, and brown thrasher. Heard red-bellied woodpeckers and white-eyed vireo.
7	0910	Heard and observed gray catbirds, red-bellied woodpeckers, red-shouldered hawk, and gray squirrels. Observed mourning doves and five wild turkeys.
8	0930	Observed panther tracks on sandy trail, black racer, and pileated woodpecker. Heard gray catbirds and American crow.
9	0945	Heard and observed two red-shouldered hawks, Northern mockingbirds, gray catbirds, blue-gray gnatcatchers, and three-striped mud turtle.
	1000	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 18, 2007
Survey Transect: F
Start time of survey: 0735 **Weather conditions:** Light fog, calm winds, temperature in the low to mid 70's, and humid.

End time of survey: 1000 **Weather conditions:** Partly cloudy skies, calm winds, temperature in the mid 80's, and humid.

Observer: William R. Cox

Station	Time	Field Notes
1	0735	Observed gray catbird. Heard mourning dove.
2	0750	Observed mourning dove. Heard Carolina wren.
3	0810	Observed two red-shouldered hawks.
4	0830	Heard ground dove, Northern cardinal, and American crow.
5	0845	Heard gray catbird and American crow.
6	0905	Observed mourning dove and red-bellied woodpecker. Heard gray catbird.
7	0925	Heard great-crested flycatcher.
8	0945	Observed red-bellied woodpecker. Heard two downy woodpeckers.
	1000	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 18, 2007
Survey Transect: G
Start time of survey: 0726 **Weather conditions:** Partly cloudy skies, calm wind, temperature in the high 70's, and humid.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, light wind 0-5 mph, and temperature in the mid 80's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0726	Observed little blue heron fly overhead, approximately 30 feet.
2	0742	Observed American crow. Heard Carolina wren, white-eyed vireo, and gray catbird.
3	0755	Observed pine warbler, gray catbirds, common grackles, and black crowned night heron. Heard red-bellied woodpecker.
4	0810	Observed red-bellied woodpecker, little blue heron walking on berm, and pileated woodpecker. Heard pine warbler, white-eyed vireo, and blue-gray gnatcatcher.
5	0823	Observed little blue heron and two black crowned night herons in ditch. Heard pileated woodpecker and red-shouldered hawk.
6	0844	Observed pileated woodpecker and green heron. Heard red-shouldered hawk and red-winged blackbird.
7	0920	Heard Northern cardinal.
8	0936	Observed common grackle and yellow-rumped warbler. Heard blue-gray gnatcatcher.
9	0950	Observed green heron in ditch and yellow-rumped warbler.
10	1015	Observed anhinga in pine. Heard blue-gray gnatcatcher.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 19, 2007
Survey Transect: B
Start time of survey: 0735 **Weather conditions:** Foggy skies, calm winds, and temperatures in the high 70's.

End time of survey: 1035 **Weather conditions:** Cloudy/overcast skies, southwest winds at 5-10 mph, and temperatures in the high 80's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0735	Observed white-tailed deer. Heard and observed gray catbird and common grackle.
2	0750	Heard and observed common grackle, Northern cardinal, red-bellied woodpecker, gray catbird, red-shouldered hawk, and downy woodpecker. Observed blue jay.
3	0805	Heard and observed gray catbird, red-bellied woodpecker, blue-gray gnatcatcher, and Northern cardinal.
4	0820	Heard and observed red-shouldered hawk and gray catbird. Heard Eastern meadowlark, Northern cardinal, and blue jay.
5	0835	Heard and observed gray catbird, blue jay, Northern cardinal, and red-bellied woodpecker. Heard Eastern meadowlark. Observed pine warbler.
6	0850	Heard and observed red-shouldered hawk, Northern cardinal, downy woodpecker, and common grackles.
7	0905	Heard and observed downy woodpecker, red-bellied woodpecker, Northern cardinal, Carolina wren, white-eyed vireo, and blue-gray gnatcatcher. Heard common ground dove and red-shouldered hawk.
8	0920	Heard Eastern meadowlark, red-shouldered hawk, and red-bellied woodpecker. Heard and observed Northern mockingbird.
9	0935	Heard and observed Northern mockingbird. Heard Eastern meadowlark and gray catbird.
10	0950	Heard red-shouldered hawk and gray catbird. Observed turkey vultures flying overhead. Observed bear tracks on trail.
11	1005	Heard and observed Northern cardinal.
12	1020	Heard and observed common grackles. Heard red-shouldered hawk. Observed bear tracks on trail.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 19, 2007
Survey Transect: C
Start time of survey: 0730 **Weather conditions:** Mostly clear skies, calm winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, east winds at 0-5 mph, and temperatures in the mid 80's.

Observer: Marijke Noens

Station	Time	Field Notes
1	0730	Heard pileated woodpecker to the northeast and blue-gray gnatcatcher. Heard and observed gray catbirds to the south.
2	0750	Heard white-eyed vireo to the east. Heard and observed gray catbirds in all directions. Observed red-bellied woodpecker to the west. Heard red-bellied woodpecker to the south.
3	0810	Observed common yellowthroat to the west, three white ibis flying to the northeast, gray catbirds in all directions, blue jay flying overhead from southwest to northeast, and horses walking north on trail.
4	0830	Heard mourning dove to the northwest. Observed red-bellied woodpecker to the south.
5	0850	Heard Northern cardinal to the south, red-shouldered hawk to the east, and red-bellied woodpecker to the east. Observed common grackle fly overhead from southwest to northeast. Heard and observed downy woodpecker to the southwest.
6	0915	Heard pileated woodpecker to the southwest. Observed red-bellied woodpecker to the south and common grackles flying south.
7	0935	Heard belted kingfisher to the west. Observed three white ibis flying south. Heard blue-gray gnatcatcher to the west. Observed Northern cardinals to the northwest. Heard white-eyed vireo to the northeast.
8	0950	Heard pileated woodpecker to the east, red-bellied woodpecker to the southeast, blue jay to the west, and Carolina wren to the west.
9	1010	Heard belted kingfisher to the south, red-bellied woodpecker to the east, pileated woodpecker to the east, and Carolina wren to the north. Observed red-bellied woodpecker to the north and Eastern phoebe to the southwest.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 19, 2007
Survey Transect: D
Start time of survey: 0720 **Weather conditions:** Mostly clear skies, humid, calm winds, and temperatures in the high 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, southeast winds at 5-10 mph, and temperatures in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0720	Heard and observed red-bellied woodpecker, Northern cardinal, and blue-gray gnatcatcher.
2	0732	Heard blue-gray gnatcatcher and Northern cardinal.
3	0745	Heard blue-gray gnatcatcher, Northern mockingbird, and red-bellied woodpecker.
4	0755	Heard American crow, blue-gray gnatcatcher, red-bellied woodpecker, and pileated woodpecker.
5	0805	Heard and observed pileated woodpecker and mourning doves. Heard gray catbird and red-shouldered hawk.
6	0815	Heard red-shouldered hawk, mourning dove, and blue-gray gnatcatcher. Heard and observed gray catbird.
7	0827	Heard and observed mourning dove and blue-gray gnatcatcher. Heard pileated woodpecker.
8	0845	Heard blue-gray gnatcatcher and Northern mockingbird.
9	0900	Heard pileated woodpecker. Observed gray catbird. Heard Northern cardinal, red-shouldered hawk, and common grackle. Observed red-bellied woodpecker.
10	0910	Heard mourning dove, Northern cardinal, pileated woodpecker, and red-shouldered hawk. Observed cattle egret.
11	0920	Heard and observed gray catbird, Northern cardinal, and Northern mockingbird. Heard red-shouldered hawk. Observed pileated woodpecker and red-bellied woodpecker.
12	0930	Heard and observed gray catbird. Heard blue-gray gnatcatcher, red-shouldered hawk, and Northern cardinal.
13	0943	Observed white ibis and Northern cardinal. Heard red-bellied woodpecker and common grackle.
14	0955	Heard gray catbird, blue-gray gnatcatcher, and red-shouldered hawk.

Station	Time	Field Notes
15	1007	Heard common grackle, red-shouldered hawk, gray catbird, and Northern cardinal.
16	1020	Heard and observed gray catbird and Northern mockingbird. Heard Northern cardinal, blue-gray gnatcatcher, and common grackle.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 19, 2007
Survey Transect: E
Start time of survey: 0715 **Weather conditions:** Sunny skies, calm winds, and temperatures in the mid 70's.

End time of survey: 1025 **Weather conditions:** Partly cloudy skies, southwest winds at 5-10 mph, and temperatures in the mid 80's.

Observer: Stuart Spoede

Station	Time	Field Notes
1	0715	Heard American crow and blue-gray gnatcatcher.
2	0730	Heard blue-gray gnatcatcher. Observed Carolina wren. Heard pine warbler. Observed white-eyed vireo.
3	0745	Heard blue-gray gnatcatcher. Observed Northern cardinal and bear scat.
4	0800	Observed Carolina wren. Heard white-eyed vireo.
5	0815	Heard and observed blue-gray gnatcatchers. Observed Carolina wrens, red-winged blackbird, and bear scat.
6	0830	Heard blue-gray gnatcatcher. Observed red-shouldered hawk flying east, Carolina wren, and blue-gray gnatcatcher. Heard pileated woodpecker.
7	0845	Observed pileated woodpecker and blue-gray gnatcatchers. Heard white-eyed vireo, red-shouldered hawk, and pileated woodpecker.
8	0900	Heard blue-gray gnatcatcher. Observed Carolina wren and bear scat.
9	0915	Heard and observed red-bellied woodpeckers. Observed blue-gray gnatcatcher. Heard red-shouldered hawk.
10	0930	Observed blue jay. Heard pileated woodpecker and red-bellied woodpecker. Observed bear tracks.
11	0945	Observed Carolina wren, blue-gray gnatcatcher, and red-bellied woodpecker. Heard white-eyed vireo and red-bellied woodpecker.
12	1000	Observed palm warbler. Heard and observed pileated woodpecker.
13	1015	Heard red-bellied woodpecker. Observed blue-gray gnatcatcher, two deer, red-shouldered hawk, and common ground dove.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 19, 2007
Survey Transect: F
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies with fog, calm winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, calm winds, and temperatures in the mid 80's.

Observer: David Anthony

Station	Time	Field Notes
1	0730	Heard downy woodpecker to the east, mourning dove to the southeast, red-bellied woodpecker to the west, and blue-gray gnatcatcher to the south.
2	0747	Heard mourning dove to the southeast. Heard and observed blue-gray gnatcatcher in Brazilian pepper to the east.
3	0807	Heard and observed Northern cardinal in Brazilian pepper to the east. Heard motorcycles to the southeast on test track.
4	0829	Heard blue-gray gnatcatcher to the west and northwest. Heard motorcycle noises to the east-southeast.
5	0847	Heard blue jays to the north and northeast. Heard motorcycle noises to the east.
6	0900	Heard motorcycle noises to the east.
7	0920	Heard blue jays to the west and blue-gray gnatcatcher to the northwest. Heard motorcycle noises to the east.
8	0945	No birds heard or observed. Heard motorcycle noise from test track.
9	1007	No birds heard or observed. Heard motorcycle noise from test track.
10	1020	No birds heard or observed.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 19, 2007
Survey Transect: G
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies, humid, calm winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, humid, light winds at 0-5 mph, and temperatures in the mid 80's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0735	Observed blue-gray gnatcatcher. Heard downy woodpecker and gray catbird.
2	0747	Observed gray catbirds and common yellowthroat.
3	0759	Observed gray catbird, little blue heron in ditch, and Northern cardinal. Heard pine warbler. Observed three otters in ditch.
4	0814	Observed common grackle and gray catbird.
5	0825	Heard pileated woodpecker, gray catbirds, white-eyed vireo, and four roseate spoonbills flying 100± feet overhead to the southeast.
6	0839	Observed red-bellied woodpeckers. Heard pine warbler, white-eyed vireo, gray catbirds, and downy woodpecker.
7	0851	Heard and observed Northern mockingbird and downy woodpecker.
8	0904	Observed common grackle and blue-gray gnatcatcher.
9	0917	Heard white-eyed vireo. Observed common grackle
10	0927	Observed common grackle and blue-gray gnatcatcher.
11	0947	Observed downy woodpecker. Heard Carolina wren and Northern cardinal.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 22, 2007
Survey Transect: B
Start time of survey: 0725 **Weather conditions:** Mostly cloudy skies with fog, little to no wind, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, southeast winds at 0-5 mph, and temperatures in the high 80's.

Observer: Alicia Kruse

Station	Time	Field Notes
1	0730	Observed bear tracks heading west on trail. Heard gray catbirds, Northern cardinals, red-bellied woodpecker, downy woodpecker, and sandhill cranes.
2	0747	Heard red-bellied woodpecker, Northern cardinals, and gray catbirds. Heard and observed mourning doves.
3	0805	Heard and observed two Northern cardinals, yellow-throated warbler, red-bellied woodpecker, gray catbirds, and mourning doves. Observed four white-tailed deer and 10 sandhill cranes.
4	0821	Heard gray catbirds, American crow, and Northern cardinal. Observed osprey. Heard and observed red-shouldered hawk.
5	0836	Heard and observed two red-shouldered hawks, small flock of common grackles, and three Northern cardinals. Observed blue jay.
6	0850	Heard and observed gray catbirds and two Northern cardinals. Heard downy woodpecker.
7	0902	Observed black vulture. Heard red-shouldered hawk, gray catbird, and Northern cardinal.
8	0925	Observed bear scat near feeder and Big Cypress fox squirrel jumping among trees along wetland edge. Heard and observed gray catbirds, Northern cardinal, pileated woodpecker, and two red-shouldered hawks.
9	0945	Heard gray catbirds. Observed mourning dove. Heard and observed Northern mockingbird.
10	1000	Heard and observed red-shouldered hawk and American crow.
11	1015	Heard gray catbirds. Observed blue jay and Northern mockingbird.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 22, 2007
Survey Transect: C
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies, calm winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, calm winds, and temperatures in the mid 80's.

Observer: Marijke Noens

Station	Time	Field Notes
1	0730	Heard and observed belted kingfisher to the east. Heard blue-gray gnatcatcher, Carolina wren to the west, white-eyed vireo to the west, and pileated woodpecker to the east.
2	0750	Heard red-bellied woodpecker and pileated woodpecker to the west. Heard gray catbird and sandhill cranes to the east.
3	0810	Observed red-bellied woodpecker fly from west to east. Heard gray catbirds in all directions. Heard Carolina wren to the southwest, belted kingfisher to the northwest, and crow to the north. Heard and observed red-shouldered hawk to the south and three common grackles fly from south to north.
4	0830	Heard and observed pine warbler to the north and four white ibis fly from northwest to southeast.
5	0845	Observed pileated woodpecker to the north. Heard red-shouldered hawk to the south.
6	0905	Observed great blue heron fly from east to west and Northern cardinal fly from northwest to southeast. Heard Carolina wren to the southwest.
7	0925	Observed great egret to the south. Heard blue-gray gnatcatcher to the west and blue jay to the southwest.
8	0945	No wildlife heard or observed.
9	1005	Observed bear scat on trail. Observed two white ibis fly from south to southwest, two black vultures on tree to the south, and white ibis fly from west to east.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 22, 2007
Survey Transect: D
Start time of survey: 0725 **Weather conditions:** Partly cloudy skies, south winds at 0-5 mph, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Mostly sunny skies, south winds at 5-10 mph, and temperatures in the mid 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0725	Heard Northern cardinal, blue-gray gnatcatcher, red-shouldered hawk, mourning dove, and pileated woodpecker.
2	0735	Heard red-shouldered hawk, Northern cardinal, common grackle, gray catbird, blue-gray gnatcatcher, and Florida sandhill crane. Observed pileated woodpecker.
3	0745	Heard and observed Northern cardinal, gray catbird, and blue-gray gnatcatcher. Heard red-shouldered hawk.
4	0755	Heard and observed Northern cardinal and blue-gray gnatcatcher. Heard pileated woodpecker. Observed gray catbird and red-shouldered hawk. Heard mourning dove.
5	0805	Heard red-shouldered hawk. Heard and observed gray catbird, common ground dove, and mourning dove.
6	0815	Heard and observed red-shouldered hawk, gray catbird, mourning dove, and Northern cardinal.
7	0825	Observed great blue heron. Heard and observed Northern cardinal, gray catbird, red-shouldered hawk, and blue-gray gnatcatcher.
8	0835	Heard and observed gray catbird, Northern cardinal, and red-bellied woodpecker.
9	0845	Heard and observed Northern cardinal, gray catbird, and blue-gray gnatcatcher. Heard red-shouldered hawk. Observed pileated woodpecker.
10	0855	Heard and observed gray catbird, Northern cardinal, mourning dove, and warbler sp.
11	0907	Heard red-shouldered hawk, gray catbird, and Northern cardinal. Observed gray catbird and Northern cardinal.
12	0920	Heard and observed red-shouldered hawk, black vulture, and gray catbird. Heard Northern cardinal. Observed American alligator in ditch. Observed Northern mockingbird.

Station	Time	Field Notes
13	0933	Heard and observed red-shouldered hawk, Northern mockingbird, and Northern cardinal. Heard red-bellied woodpecker and blue-gray gnatcatcher.
14	0945	Observed four white-tailed deer. Heard and observed gray catbird, Northern mockingbird, red-bellied woodpecker, Northern cardinal, and blue jay.
15	0955	Heard and observed Northern mockingbird, Northern cardinal, turkey vulture, and gray catbird. Heard red-bellied woodpecker.
16	1007	Heard and observed red-shouldered hawk and turkey vulture. Observed red-shouldered hawk nest. Heard and observed blue jay. Heard American crow, mourning dove, and gray catbird.
17	1017	Heard red-shouldered hawk and red-bellied woodpecker. Observed Northern mockingbird, red-bellied woodpecker, and four turkeys.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 22, 2007
Survey Transect: E
Start time of survey: 0715 **Weather conditions:** Sunny skies, calm winds, and temperatures in the low 70's.

End time of survey: 1025 **Weather conditions:** Sunny skies, east winds at 0-5 mph, and temperatures in the mid 80's.

Observer: Stuart Spoede

Station	Time	Field Notes
1	0715	Observed Carolina wren and common ground dove. Heard blue-gray gnatcatcher and unknown owl.
2	0730	Heard and observed red-shouldered hawk. Heard American crow, white-eyed vireo, and red-bellied woodpecker.
3	0745	Observed Northern mockingbirds and Northern cardinal. Heard pine warbler. Observed white ibis flying west. Heard red-bellied woodpecker.
4	0800	Observed blue-gray gnatcatchers. Heard Northern mockingbird. Observed white ibis flying north. Heard American crow.
5	0815	Heard pine warbler. Heard and observed Northern mockingbird. Observed blue-gray gnatcatcher. Heard pileated woodpecker and red-bellied woodpecker.
6	0830	Observed red-winged blackbirds and pileated woodpecker.
7	0845	Observed blue-gray gnatcatcher, palm warbler, and common ground doves. Heard and observed Northern cardinal.
8	0900	Observed dove. Heard pileated woodpecker. Observed red-bellied woodpeckers and Carolina wren.
9	0915	Heard and observed red-bellied woodpecker and Northern mockingbird.
10	0930	Observed blue-gray gnatcatcher and white ibis flying east. Heard pileated woodpecker. Observed pine warbler.
11	0945	Observed Northern cardinal. Heard pine warbler. Observed common ground doves. Heard pileated woodpecker.
12	1000	Heard and observed red-shouldered hawk. Observed red-winged blackbirds.
13	1015	Heard and observed pileated woodpeckers. Observed red-bellied woodpecker and Carolina wren.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 22, 2007
Survey Transect: F
Start time of survey: 0735 **Weather conditions:** Partly cloudy skies, calm winds, and temperatures in the mid 70's.

End time of survey: 1035 **Weather conditions:** Partly sunny skies, calm winds, and temperatures in the mid 80's.

Observer: David Anthony

Station	Time	Field Notes
1	0735	Heard red-shouldered hawk to the north, blue-gray gnatcatcher to the west, Carolina wren to the southwest, and Northern cardinal to the northeast.
2	0751	Heard blue jay to the east. Observed white ibis flying south. Heard and observed red-bellied woodpecker in pine tree to the west.
3	0808	Heard Northern cardinal to the north. Heard and observed blue jay in pine tree to the southwest. Heard mourning dove to the east, red-bellied woodpecker to the southwest, and blue-gray gnatcatcher to the north.
4	0830	Observed blue jay flying south. Heard and observed red-bellied woodpecker flying south to slash pine and blue-gray gnatcatcher flying west to cypress tree.
5	0850	Heard Northern flicker to the east, blue-gray gnatcatcher to the west, pine warbler to the southeast, and red-shouldered hawk to the northwest.
6	0914	Heard Northern cardinal the east, pine warbler to the north, and blue-gray gnatcatcher to the west.
7	0930	Heard red-bellied woodpecker to the southwest.
8	0955	No birds heard or observed.
9	1011	No birds heard or observed.
10	1025	Heard red-shouldered hawk to the north.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 22, 2007
Survey Transect: G
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies, winds at 0-5 mph, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, winds at 0-10 mph, and temperatures in the mid 80's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0730	Heard gray catbirds. Observed great egret and red-shouldered hawk. Heard and observed common grackle. Heard sandhill cranes to the southeast.
2	0750	Observed little blue heron, pileated woodpecker foraging in cypress tree, common grackle, and green-backed heron. Heard and observed red-shouldered hawk, red-winged blackbird, and gray catbirds.
3	0810	Observed common ground doves and American alligator tracks. Heard gray catbirds and blue-gray gnatcatcher.
4	0831	Heard Carolina wren, gray catbirds, and sandhill cranes in the distance. Heard and observed common grackles. Heard splashing then observed two deer.
5	0853	Heard and observed killdeer in fields, pileated woodpecker, gray catbirds, white-eyed vireos, and common ground doves. Heard and observed red-shouldered hawk. Heard red-bellied woodpecker.
6	0922	Heard pileated woodpecker, Carolina wren, gray catbirds, common ground doves, and red-winged blackbird.
7	1000	Heard gray catbirds and red-winged blackbirds. Observed palm warblers on berm and three crested caracara in field. Heard gray catbirds.
8	1014	Observed great egret along ditch and woodstork flying east. Heard gray catbirds. Observed a gray squirrel in pine tree.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 23, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Clear sky, no wind, and the temperature was 74 degrees Fahrenheit.

End time of survey: 1040 **Weather conditions:** Mostly sunny, wind at 5-10 mph from the southeast, and the temperature was 82 degrees Fahrenheit.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0730	Heard and/or observed gray catbird, mourning dove, Northern cardinal, red-bellied woodpecker, white ibis, and Northern mockingbird.
2	0758	Heard and/or observed ground dove, blue jay, mourning dove, red-shouldered hawk, red-bellied woodpecker foraging on a pine snag to the north, Northern cardinal, Carolina wren, palm warbler, and great blue heron fly east with food material.
3	0835	Heard and/or observed downy woodpecker to the west, common grackles, red-winged blackbird, gray catbird, gray squirrels, wild turkeys, pine warblers, red-bellied woodpecker foraging on cabbage palm, and mourning dove.
4	0913	Heard and/or observed red-shouldered hawk, red-bellied woodpecker fly north, downy woodpecker to the east, gray catbird, Carolina wren, and fish crow.
5	0930	Heard and/or observed gray catbirds, mourning dove, Carolina wren, European starling, red-bellied woodpecker fly southeast, and pine warbler.
6	0953	Heard and/or observed turkey vultures, Carolina wren, Northern mockingbird, red-bellied woodpecker foraging on live pines, red-shouldered hawk, and gray catbird.
7	1018	Heard and/or observed red-shouldered hawk, blue-gray gnatcatcher, water moccasin, blue jay, and recent Florida panther tracks.
	1040	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 23, 2007
Survey Transect: D
Start time of survey: 0730 **Weather conditions:** Sunny, clear, calm, and the temperature was 75 degrees Fahrenheit.

End time of survey: 1031 **Weather conditions:** Sunny, clear, calm, and the temperature was 85 degrees Fahrenheit.

Observer: David Anthony

Station	Time	Field Notes
1	0730	Heard pileated woodpecker and mourning dove to the south, blue-gray gnatcatchers in all directions, and Northern cardinal to the north.
2	0753	Heard red-bellied woodpecker to the north and blue-gray gnatcatcher to the south.
3	0814	Heard Northern cardinal to the west, blue jay and red-shouldered hawk to the east, blue-gray gnatcatcher to the southwest, and mourning dove to the south.
4	0839	Observed blue jay on a Brazilian pepper to the south. Heard pine warbler to the west.
5	0900	Heard red-bellied woodpecker to the southeast, blue-gray gnatcatcher to the east, and killdeer to the north.
6	0920	Observed red-shouldered hawk flying overhead to the southwest and turkey vulture flying to the east.
7	0942	Heard blue-gray gnatcatcher to the west and red-bellied woodpecker to the south.
8	1001	Heard red-shouldered hawk and blue jay to the south and Northern cardinal to the northwest.
9	1021	No birds were heard or observed.
	1031	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 23, 2007
Survey Transect: E
Start time of survey: 0725 **Weather conditions:** Clear sky, humid, calm and temperatures in the low 80's.

End time of survey: 1030 **Weather conditions:** Partly cloudy, wind at 5-8 mph, and temperatures in the upper 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0725	Heard mourning doves. Observed wild turkeys and cottontail rabbits.
2	0745	Heard and observed gray catbirds, two red-shouldered hawks, and red-bellied woodpeckers.
3	0800	Heard and observed blue-gray gnatcatchers, Northern cardinal, and gray catbirds. Observed two deer and a flock of cattle egret flying.
4	0820	Heard American crow. Observed gray squirrel, mourning doves, red-shouldered hawk flying, and gray catbirds.
5	0840	Observed a bear signal tree at the trail intersection. Heard and observed red-bellied woodpecker and gray catbirds. Heard white-eyed vireo.
6	0905	Observed approximately eight wild turkeys on the trail, mourning doves, black vulture flying, and Northern cardinals.
7	0920	Heard mourning doves and gray catbird.
8	0935	Heard red-shouldered hawk. Heard and observed red-bellied woodpeckers and gray catbirds. Observed common grackles flying.
9	0950	Heard and observed gray catbirds and Northern cardinals.
10	1005	Observed gray squirrel, common grackles, and mourning doves. Heard gray catbirds.
11	1020	Heard and observed three wild turkeys, gray catbirds, and red-bellied woodpeckers.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 23, 2007
Survey Transect: F
Start time of survey: 0725 **Weather conditions:** Humid, light fog, calm, and the temperature was 75 degrees Fahrenheit.

End time of survey: 0945 **Weather conditions:** Humid, partly cloudy, wind at 3-5 mph from the southwest, and temperatures in the mid 80's.

Observer: William R. Cox

Station	Time	Field Notes
1	0725	Heard red-bellied woodpecker and Carolina wren.
2	0745	Observed Carolina wren and American crow.
3	0805	Observed downy woodpecker. Heard American crow and blue-gray gnatcatcher.
4	0820	Observed brown thrasher. Heard great crested flycatcher and gray catbird.
5	0840	Heard Carolina wren. Observed gray catbird.
6	0900	Observed great crested flycatcher and red-shouldered hawk.
7	0920	Heard Northern cardinal. Observed American crow.
8	0945	Heard Carolina wren. Observed pileated woodpecker.
	0945	End of survey. No red-cockaded woodpeckers heard or observed during this survey.
		Note: Bear scat was observed near Station 8.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 23, 2007
Survey Transect: G
Start time of survey: 0725 **Weather conditions:** Patchy fog, calm winds, and temperatures in the high 70's.

End time of survey: 1015 **Weather conditions:** Clear skies, winds at 5-10 mph from the south-southeast, and temperatures in the high 80's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0725	Observed American alligator. Heard and observed common grackles, white-eyed vireo, Carolina wren, and blue jay. Heard red-shouldered hawk, Northern cardinal, gray catbird, blue-gray gnatcatcher, and red-bellied woodpecker.
2	0745	Observed cattle egrets flying overhead and a flock of eight white ibis flying southwest. Heard and observed common grackles and red-shouldered hawk. Heard Northern cardinal, Carolina wren, and gray catbird.
3	0800	Heard and observed Northern cardinal and gray catbird. Heard red-bellied woodpecker and white-eyed vireo. Observed little blue heron in a ditch and red-bellied woodpecker.
4	0815	Observed anhinga fly overhead, common grackle, and red-shouldered hawk. Heard and observed blue-gray gnatcatcher. Heard gray catbird and white-eyed vireo.
5	0825	Heard and observed blue-gray gnatcatcher and common grackles. Observed cattle egret and great egret flying overhead.
6	0840	Heard and observed common grackle. Observed great egret and unknown warbler. Heard gray catbird.
7	0855	Heard and observed gray catbird. Observed white ibis flying northwest.
8	0910	Heard and observed gray catbird, common yellowthroat, and Carolina wren. Heard Northern cardinal, red-bellied woodpecker, and Northern parula. Observed Northern cardinal.
9	0925	Heard and observed gray catbird. Observed red-shouldered hawk.

Station	Time	Field Notes
10	0940	Heard and observed green heron, palm warbler, gray catbird, and common grackle. Observed white ibis.
11	0955	Heard and observed common grackle. Heard gray catbird. The wind gusts increased to approximately 5-10 mph.
12	1005	Heard and observed unknown warbler and green heron. Heard red-bellied woodpecker, white-eyed vireo, common grackles, and gray catbird.
13	1015	Heard gray catbird and blue-gray gnatcatcher. Observed great egret, cattle egret flying, white ibis flying to the north, snowy egret in a ditch, and blue-gray gnatcatcher. Heard and observed immature black-crowned night heron in a ditch.
	1015	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 24, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Clear sky with light fog, no wind, and the temperature was 73 degrees Fahrenheit.

End time of survey: 1030 **Weather conditions:** Partly cloudy, wind at 0-5 mph from the southwest, and the temperature was 83 degrees Fahrenheit.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0730	Heard and/or observed Carolina wren, gray catbird, pileated woodpecker, red-bellied woodpecker foraging on live pines, boat-tailed grackles, mourning dove, white ibis flying south, and red-shouldered hawk.
2	0801	Heard and/or observed gray catbird, white ibis flying south, Northern cardinal, and red-bellied woodpecker and pileated woodpecker to the south.
3	0823	Heard and/or observed red-bellied woodpecker flying east, red-shouldered hawk, gray catbird, red-bellied woodpecker foraging on a pine snag, boat-tailed grackles flying north, pileated woodpecker flying north to a pine snag, and downy woodpecker to the south. Heard sandhill cranes to the northeast.
4	0900	Heard and/or observed Northern cardinal, gray catbird, red-bellied woodpecker to the south, red-bellied woodpecker foraging on pines to the north, pine warbler, red-shouldered hawk, and palm warblers.
5	0937	Heard and/or observed pine warbler, gray catbird, red-shouldered hawk, downy woodpecker to the south, red-bellied woodpecker foraging on pines, and Northern cardinal.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 24, 2007
Survey Transect: D
Start time of survey: 0720 **Weather conditions:** Clear skies, no wind, and temperatures in the mid 70's.

End time of survey: 1020 **Weather conditions:** Clear skies, wind at 10-15 mph from the southeast, and temperatures in the low 80's.

Observer: Matt Brosious

Station	Time	Field Notes
1	0720	Heard pileated woodpecker to the east and gray catbirds to the north and east.
2	0745	Heard red-bellied woodpecker to the east, gray catbirds all around, pileated woodpecker to the southwest, and mourning dove to the northeast.
3	0805	Heard and observed red-shouldered hawk to the northwest. Heard pileated woodpecker to the west and red-bellied woodpecker to the north.
4	0820	Observed turkey vulture to the west and pileated woodpecker fly to the east. Heard and observed two American kestrels to the southeast.
5	0840	Heard and observed Northern mockingbird to the southwest. Heard Carolina wren to the south, Northern cardinal to the east, and mourning dove to the southwest.
6	0900	Heard and observed red-bellied woodpecker to the north. Heard Northern mockingbird to the west. Observed black vulture to the northwest.
7	0925	Heard mourning dove and blue jay to the north and common ground dove to the south. Heard and observed red-bellied woodpecker and American kestrel to the north and belted kingfisher fly to the east. Observed Northern cardinal to the east and five white-tailed deer to the north.
8	0945	Heard downy woodpecker to the northeast, Northern mockingbird to the southwest, and common ground dove to the west. Observed Northern cardinal to the west.
9	1005	Observed Northern mockingbird to the west. Heard mourning dove to the east and gray catbird to the southeast.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 24, 2007
Survey Transect: E
Start time of survey: 0745 **Weather conditions:** Clear, calm, and temperatures in the mid 70's.

End time of survey: 1025 **Weather conditions:** Partly cloudy, slight breeze, and temperatures in the mid 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0745	Heard and observed red-shouldered hawk, barred owl, and gray catbirds. Heard Cuban tree frogs.
2	0800	Heard and observed gray catbirds and mourning doves.
3	0815	Heard gray catbirds. Observed Northern cardinal.
4	0835	Heard and observed red-shouldered hawk, red-bellied woodpecker, and gray catbirds. Observed two pileated woodpeckers.
5	0855	Observed blue-gray gnatcatchers and gray catbirds.
6	0910	Observed Northern mockingbird and blue-gray gnatcatcher. Heard gray catbirds.
7	0925	Heard fish crow and gray catbirds. Observed red-bellied woodpecker, pileated woodpecker, and Northern cardinal.
8	0945	Observed fish crow, Northern cardinal, and mourning doves. Heard sandhill crane in the distance to the north.
9	1000	Heard and observed common grackles flying, gray squirrels, gray catbirds, and red-bellied woodpeckers.
10	1015	Observed red-shouldered hawk, Northern mockingbird, and turkey vulture. Heard gray catbirds and fish crow.
	1025	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 24, 2007
Survey Transect: F
Start time of survey: 0730 **Weather conditions:** Light fog, calm, humid, and temperatures in the low 70's.

End time of survey: 0950 **Weather conditions:** Humid, partly cloudy, wind at 0-2 mph from the southwest, and temperatures in the mid 80's.

Observer: William R. Cox

Station	Time	Field Notes
1	0730	Observed gray catbird. Heard Carolina wren.
2	0750	Observed downy woodpecker and turkey.
3	0810	Heard Carolina wren.
4	0830	Observed mourning doves. Heard great crested flycatcher.
5	0845	Heard Northern cardinal.
6	0910	Heard American crow and red-bellied woodpecker.
7	0930	Heard great crested flycatcher and ground doves.
8	0950	Observed red-shouldered hawk. Heard American crows.
	0950	End of survey. No red-cockaded woodpeckers heard or observed during this survey.
		Note: Observed Florida panther tracks near Station 2.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 24, 2007
Survey Transect: G
Start time of survey: 0725 **Weather conditions:** Partly cloudy, calm winds, and temperatures in the mid 70's.

End time of survey: 1025 **Weather conditions:** Partly cloudy, winds at 0-5 mph, and temperatures in the mid 80's.

Observer: Jean Ihnat

Station	Time	Field Notes
1	0725	Heard gray catbirds. Observed deer tracks.
2	0737	Heard sandhill cranes to the south, ground doves, and gray catbirds.
3	0755	Observed several deer on the berm. Heard gray catbirds, belted kingfisher, red-shouldered hawk, and common grackles.
4	0818	Heard downy woodpecker. Heard and observed red-bellied woodpecker, common grackles, blue-gray gnatcatcher, white-eyed vireo, and gray catbirds.
5	0843	Observed bobcat tracks. Heard ground dove, Carolina wren, and gray catbird.
6	0904	Heard Carolina wren and blue-gray gnatcatcher. Observed common grackle.
7	0915	Heard and observed gray catbirds. Heard ground dove and red-shouldered hawk. Observed great egret.
8	0927	Heard and observed red-shouldered hawk. Heard gray catbirds.
9	0940	Heard gray catbirds, red-shouldered hawk, pileated woodpecker, white-eyed vireo, and pine warbler.
10	1003	Heard white-eyed vireo and gray catbird.
11	1012	Heard gray catbird, white-eyed vireo, and traffic.
	1025	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 25, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Cloudy skies, light winds at 0-5 mph, and temperatures in the upper 60's.

End time of survey: 1030 **Weather conditions:** Cloudy skies, light winds at 5-10 mph, and temperatures in the low 70's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0730	Heard pine warbler and American crow. Observed 12 white ibis flying west 50± feet overhead.
2	0743	Heard gray catbirds, Northern cardinal, barred owl, red-bellied woodpecker, blue-gray gnatcatcher, and Carolina wren.
3	0808	Heard sandhill cranes to the north, Northern cardinal, and red-bellied woodpecker. Observed three white ibis flying east 50± feet overhead. Winds increasing to 5-10 mph.
4	0824	Heard and observed common grackles. Observed gray catbird and Northern mockingbird.
5	0839	Heard gray catbirds and Northern cardinal. Observed common grackles.
6	0855	Heard Northern cardinal and pine warbler.
7	0911	Heard gray catbirds, red-bellied woodpecker, and belted kingfisher. Observed five whit ibis flying north 50± feet overhead. Heard sandhill cranes to the west.
8	0924	Heard Northern cardinals, gray catbirds, and Eastern towhee. Observed pine warblers. Heard red-shouldered hawk.
9	0936	Heard red-bellied woodpeckers, Northern cardinals, and pine warbler. Observed common grackles.
10	0950	Heard red-bellied woodpeckers, Northern cardinals, red-shouldered hawk, gray catbirds, and common grackles.
11	1007	Heard gray catbird and common grackles.
12	1023	Heard gray catbird and common grackles. Observed Northern cardinal and Northern mockingbird.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 25, 2007
Survey Transect: D
Start time of survey: 0725 **Weather conditions:** Cloudy skies, southwest winds at 0-5 mph, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Cloudy skies, southwest winds at 0-5 mph, and temperatures in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0725	Heard gray catbird, Northern cardinal, red-bellied woodpecker, and mourning dove.
2	0740	Heard mourning dove. Observed Northern mockingbird. Heard red-bellied woodpecker, red-shouldered hawk, and Northern cardinal.
3	0753	Heard and observed red-bellied woodpecker, red-headed woodpecker, 20± white ibis, pileated woodpecker, Northern mockingbird, and blue-gray gnatcatcher. Heard American crow and common grackle.
4	0805	Heard red-shouldered hawk and mourning dove. Heard and observed red-bellied woodpecker, gray catbird, and Northern cardinal.
5	0818	Heard and observed gray catbird, mourning dove, red-shouldered hawk, common grackle, red-bellied woodpecker, blue jay, and Northern mockingbird.
6	0830	Heard and observed gray catbird, Northern mockingbird, and red-bellied woodpecker.
7	0840	Heard and observed gray catbird, red-bellied woodpecker, and Northern cardinal. Heard American crow.
8	0850	Heard and observed Northern mockingbird, red-bellied woodpecker, gray catbird, and common ground dove.
9	0905	Heard gray catbird, red-bellied woodpecker, red-shouldered hawk, Northern cardinal, and mourning dove.
10	0917	Heard and observed pileated woodpecker, gray catbird, red-bellied woodpecker, and blue jay.
11	0930	Heard pileated woodpecker, gray catbird, Northern cardinal, and red-bellied woodpecker.
12	0942	Heard and observed warbler sp. Heard mourning dove and red-shouldered hawk. Observed three white ibis. Heard blue jay and red-bellied woodpecker.

Station	Time	Field Notes
13	0955	Heard mourning dove. Heard and observed red-bellied woodpecker. Heard red-shouldered hawk, warbler sp., Northern cardinal, and gray catbird.
14	1005	Heard red-shouldered hawk, gray catbird, and red-bellied woodpecker.
15	1015	Heard and observed gray catbird. Heard mourning dove.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 25, 2007
Survey Transect: E
Start time of survey: 0725 **Weather conditions:** Mostly cloudy skies, light rain, northeast winds at 0-3 mph, and temperatures in the low 70's.

End time of survey: 0945 **Weather conditions:** Mostly cloudy skies, northeast winds at 0-3 mph, and temperatures in the low 80's.

Observer: William R. Cox

Station	Time	Field Notes
1	0725	Heard gray catbirds. Observed mourning doves.
2	0745	Observed downy woodpeckers.
3	0805	Observed 23 turkeys (jakes), Northern cardinal, and mourning doves.
4	0825	Observed red-shouldered hawks.
5	0845	Observed four turkeys (jakes). Heard Carolina wren.
6	0900	Heard gray catbirds, Carolina wren, and downy woodpecker.
7	0920	Heard common ground doves and great crested flycatcher. Observed Carolina wren.
8	0945	Observed mourning doves, Northern cardinal, and American kestrel. Heard gray catbirds.
NOTE: Observed bear signal trees throughout the survey. Observed bear and two cubs.		
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 25, 2007
Survey Transect: G
Start time of survey: 0720 **Weather conditions:** Cloudy/overcast skies, north winds at 0-5 mph, and temperatures in the high 60's.

End time of survey: 1040 **Weather conditions:** Overcast skies, north winds at 0-5 mph, and temperatures in the high 70's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0720	Heard red-shouldered hawk, gray catbird, blue-gray gnatcatcher, Northern cardinal. Observed two wood storks flying southwest,
2	0740	Heard and observed common grackles, gray catbird, and Carolina wren. Observed great egret in ditch, two white ibis flying northwest, and red-shouldered hawk. Heard blue-gray gnatcatcher.
3	0755	Heard and observed gray catbird and Northern cardinal. Heard blue-gray gnatcatcher.
4	0810	Heard and observed common yellowthroat, Northern cardinal, gray catbird, and blue-gray gnatcatcher. Observed adult crested caracara in snag tree. Observed second adult crested caracara fly to same snag from the south. Observed juvenile crested caracara in farm field. Observed two adult crested caracaras fly to pine tree, then heard juvenile crested caracara and observed it fly to same pine. All three crested caracaras flew to cabbage palm tree 20± feet from berm. Observed two adult crested caracara fly to the north-northeast and out of view. Heard juvenile crested caracara. Heard common ground dove. Observed tri-colored heron in ditch.
5	0830	Heard and observed gray catbird and red-bellied woodpecker. Observed cattle egret flying and mourning dove.
6	0850	Heard and observed Northern cardinal, common yellowthroat, and gray catbird. Observed red-shouldered hawk. Heard white-eyed vireo. Heard and observed unknown warbler, Carolina wren, and blue jay.
7	0905	Heard and observed common grackles. Observed two white ibis in snag tree and great blue heron in ditch. Heard red-bellied woodpecker and white-eyed vireo.
8	0920	Heard and observed common yellowthroat, unknown warbler, red-shouldered hawk, and common grackles. Heard gray catbird, Northern cardinal, and blue jay.
9	0935	Heard and observed Northern cardinal, common yellowthroat, common grackle, and great blue heron. Heard gray catbird, blue jay, and Carolina wren. Observed great blue heron.

Station	Time	Field Notes
10	1005	Heard and observed great blue heron, little blue heron in ditch, Carolina wren, blue-gray gnatcatcher, and unknown warblers. Heard Northern cardinal.
11	1015	Heard gray catbird and Northern cardinal.
12	1025	Heard and observed two sandhill cranes flying south 100± overhead, red-shouldered hawk, and great egret. Observed wood stork in ditch. Heard gray catbird and Northern cardinal. Observed gray squirrels and belted kingfisher.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 26, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Cloudy skies, north winds at 0-5 mph, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Mostly cloudy skies, northeast winds at 0-5 mph, and temperatures in the high 70's.

Observer: Marijke Noens

Station	Time	Field Notes
1	0730	Heard red-shouldered hawks to the south, gray catbird to the southeast and northeast, and crow sp. to the east. Observed common grackles flying from north to south. Heard red-bellied woodpecker to the northwest, belted kingfisher to the northwest, and Carolina wren to the southeast. Observed great egret flying from south to northeast.
2	0750	Observed two white ibis flying from west to northeast. Heard belted kingfisher to the south and pileated woodpecker to the north.
3	0810	Heard sandhill cranes to the northeast (several calls heard) and red-bellied woodpecker to the east.
4	0830	Heard blue-gray gnatcatcher to the south. Observed common grackles flying from north to south. Heard gray catbirds to the south. Heard belted kingfisher to the south. Heard and observed Northern cardinals to the west.
5	0850	Heard Northern cardinal to the southeast and red-shouldered hawk to the north.
6	0910	Heard blue-gray gnatcatcher to the southwest, Northern cardinal to the west, and gray catbirds in all directions.
7	0930	No wildlife heard or observed.
8	0955	Heard sandhill cranes to the northwest and blue-gray gnatcatcher to the west. Observed sandhill cranes moving toward the southwest.
9	1015	No wildlife heard or observed.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 26, 2007
Survey Transect: D
Start time of survey: 0730 **Weather conditions:** Overcast skies, calm winds, and temperatures in the high 60's.

End time of survey: 1030 **Weather conditions:** Overcast skies, calm winds, and temperatures in the mid 70's.

Observer: David Anthony

Station	Time	Field Notes
1	0730	Heard mourning dove to the south and blue-gray gnatcatcher to the south. Observed red-shouldered hawk flying to the south.
2	0750	Heard Northern cardinal to the north and common grackle to the northwest. Observed blue-gray gnatcatcher to the southeast in Brazilian pepper.
3	0808	Heard American crow to the northeast, blue-gray gnatcatcher to the north, gray catbird to the west, and red-bellied woodpecker to the east.
4	0830	Heard pine warbler to the north, Northern cardinal to the east, and American crow to the east.
5	0847	Heard Northern cardinal to the south.
6	0905	Heard blue-gray gnatcatcher to the north and red-bellied woodpecker to the east. Heard and observed Northern cardinal to the west on slash pine.
7	0926	Light rain. No birds heard or observed.
8	0944	Heard blue-gray gnatcatcher to the south.
9	1004	Heard blue-gray gnatcatcher to the east and American crow to the north. Heard and observed black-eyed vireo to the west on Brazilian pepper.
10	1019	Heard Northern cardinal to the west and east, American crow to the west, and blue-gray gnatcatcher to the north. Heard and observed gray squirrel to the west on cabbage palm.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 26, 2007
Survey Transect: E
Start time of survey: 0730 **Weather conditions:** Cloudy skies, southeast winds at 0-5 mph, and temperatures in the high 70's.

End time of survey: 1030 **Weather conditions:** Cloudy skies, southeast winds at 5-10 mph, and temperatures in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0730	Observed barred owl. Heard red-shouldered hawk, mourning dove, and gray catbird.
2	0743	Heard red-bellied woodpecker, gray catbird, common grackle, and mourning dove.
3	0755	Heard and observed gray catbird. Heard pileated woodpecker.
4	0808	Observed red-shouldered hawk. Heard and observed gray catbird and Northern cardinal. Heard red-bellied woodpecker, red-shouldered hawk, and Northern mockingbird.
5	0820	Heard and observed gray catbird, red-bellied woodpecker, and Northern cardinal. (Light rain.)
6	0832	Observed warbler sp. Heard gray catbird, red-bellied woodpecker, and Northern cardinal.
7	0845	Observed two white ibis. Heard wild turkeys, red-shouldered hawk, Northern cardinal, blue-gray gnatcatcher, and gray catbird.
8	0857	Heard gray catbird, Northern cardinal, and red-shouldered hawk. (Light rain.)
9	0915	Heard gray catbird and red-shouldered hawk. Heard and observed red-bellied woodpecker, Northern cardinal, and pileated woodpecker.
10	0930	Heard and observed gray catbird, Northern cardinal, red-shouldered hawk, warbler sp., Northern mockingbird, and mourning dove.
11	0942	Heard and observed gray catbird. Heard red-shouldered hawk, blue-gray gnatcatcher, red-bellied woodpecker, and mourning dove.
12	0955	Heard and observed gray catbird and red-shouldered hawk.
13	1009	Heard red-shouldered hawk, gray catbird, and American crow.
14	1020	Heard and observed Northern mockingbird, gray catbird, and Northern cardinal.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 26, 2007
Survey Transect: G
Start time of survey: 0725 **Weather conditions:** Overcast skies, north winds at 0-5 mph, and temperatures in the high 60's.

End time of survey: 1025 **Weather conditions:** Overcast skies, north winds at 0-5 mph, and temperatures in the high 70's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0725	Observed great blue heron and great egret. Heard red-shouldered hawk, Northern cardinal, and gray catbird.
2	0740	Heard and observed gray catbird, red-bellied woodpecker, and Eastern phoebe. Heard Northern cardinal, red-shouldered hawk, and Carolina wren.
3	0755	Heard and observed Northern cardinal. Observed common grackles, red-shouldered hawk, great egret, and river otter. Heard Carolina wren and gray catbird.
4	0815	Heard and observed common grackles, unknown warbler, and green heron. Observed three striped mud turtles, great egret, and anhinga. Heard Northern cardinal.
5	0830	Heard and observed Northern cardinal and common grackles. Observed great egret and anhinga. Heard gray catbird.
6	0845	Heard and observed Carolina wren and little blue heron in ditch. Heard red-shouldered hawk and gray catbird. Observed great egret.
7	0900	Observed little blue heron in snag. Heard and observed gray catbird and Carolina wren. Heard Northern cardinal, white-eyed vireo, and gray catbird. Heard and observed common grackle.
8	0930	Heard and observed common grackles and Carolina wren. Heard red-shouldered hawk, white-eyed vireo, and red-bellied woodpecker. Observed white ibis flying northwest.
9	0945	Observed white ibis flying southwest. Heard and observed blue-gray gnatcatcher and Carolina wren. Heard common grackles and gray catbird.
10	1000	Heard and observed red-shouldered hawk, Carolina wren, belted kingfisher, and common grackle. Observed four white ibis flying to northeast. Heard gray catbird and Northern cardinal.

Station	Time	Field Notes
11	1015	Heard and observed pileated woodpecker, common grackles, and Carolina wren. Heard gray catbird. Observed three white ibis flying northeast.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 29, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Overcast skies, calm winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Overcast skies, northeast winds at 0-10 mph, and temperatures in the low 80's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0730	Heard and observed gray catbird and red-shouldered hawk. Heard Northern cardinal and blue-gray gnatcatcher.
2	0745	Heard and observed red-bellied woodpecker and gray catbird. Observed great egret flying, downy woodpecker, and Northern mockingbird. Observed bear scat on trail.
3	0800	Heard and observed common grackles. Heard gray catbird.
4	0815	Heard and observed Northern cardinal, gray catbird, and common grackles. Heard Florida sandhill cranes to the north.
5	0830	Observed flock of wild turkeys on trail. Heard and observed gray catbird, common grackles, and Northern cardinal.
6	0845	Heard gray catbird and red-bellied woodpecker.
7	0900	Heard and observed gray catbird, common yellowthroat, and common grackle. Heard Northern cardinal and red-bellied woodpecker.
8	0915	Heard and observed Northern cardinal, gray catbird, and unknown warbler.
9	0930	Heard Northern cardinal and gray catbird.
10	0945	Heard sandhill cranes to the north. Heard and observed common grackles and gray catbird.
11	1000	Heard and observed group of nine Florida sandhill cranes in open area along fence. Observed two more Florida sandhill cranes in fields. Heard and observed common grackles and red-bellied woodpecker.
12	1015	Heard Northern cardinal and common grackle. Observed blue-gray gnatcatcher.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 29, 2007
Survey Transect: C
Start time of survey: 0730 **Weather conditions:** Cloudy skies, northwest winds at 0-5 mph, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Cloudy skies, north winds at 0-5 mph, and temperatures in the low 80's.

Observer: Marijke Noens

Station	Time	Field Notes
1	0730	Heard and observed red-shouldered hawk to the west. Observed white ibis flying from southeast to northwest and black vulture flying from east to west. Heard belted kingfisher to the north, red-bellied woodpecker to the northwest, and catbirds in all directions. Observed another white ibis flying from southeast to northwest and two white ibis perched in pine to the east.
2	0745	Observed white ibis flying from south to north.
3	0805	Heard and observed two Carolina wrens to the east, Northern cardinal to the north, and five white ibis flying from south to north.
4	0825	No wildlife heard or observed.
5	0850	Observed great egret flying from south to northeast, Eastern phoebe to the west, 10-15 white ibis flying from north to southeast, and red-shouldered hawk to the east. Heard gray catbirds in all directions.
6	0910	Heard belted kingfisher to the east and west and blue jays to the north. Observed seven white ibis flying from north to south.
7	0935	No wildlife heard or observed.
8	0955	Heard red-bellied woodpeckers and pileated woodpeckers to the east.
9	1015	No wildlife heard or observed.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 29, 2007
Survey Transect: D
Start time of survey: 0725 **Weather conditions:** Very cloudy skies, little to no wind, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Mostly cloudy skies, east winds at 0-5 mph, and temperatures in the high 70's.

Observer: Alicia Kruse

Station	Time	Field Notes
1	0730	Heard Northern cardinal and Northern mockingbird. Observed and heard farm equipment.
2	0746	Heard gray catbirds, Northern cardinals, and red-bellied woodpecker.
3	0800	Heard gray catbirds, blue-gray gnatcatcher, pileated woodpecker, American crow, and sandhill cranes. Observed two piles of bear scat and scratching on downed pine tree.
4	0824	Heard gray catbirds, Northern mockingbird, and red-bellied woodpecker. Observed bear scat.
5	0850	Observed bear scat, scratch tree, and bite tree. Heard gray catbirds and blue jay.
6	0909	Observed bear scratch tree and scat. Heard and observed red-bellied woodpecker and gray catbirds. Heard Northern cardinal and American crow.
7	0935	Observed bear scat and water moccasin. Heard gray catbirds.
8	1004	Observed bear scat. Heard gray catbirds, mourning dove, and red-bellied woodpeckers. Observed black vulture
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 29, 2007
Survey Transect: E
Start time of survey: 0720 **Weather conditions:** Cloudy skies, south winds at 0-5 mph, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Cloudy skies, southwest winds at 0-5 mph, and temperatures in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0720	Heard red-shouldered hawk, mourning dove, gray catbird, American crow, and sandhill crane.
2	0735	Heard red-shouldered hawk, pileated woodpecker, and gray catbird. Observed Northern cardinal.
3	0745	Heard American crow and mourning dove. Heard and observed gray catbird. Heard red-shouldered hawk.
4	0757	Heard and observed gray catbird. Heard mourning dove and blue-gray gnatcatcher.
5	0810	Heard and observed gray catbird and mourning dove. Heard red-shouldered hawk and blue jay.
6	0822	Heard blue-gray gnatcatcher, gray catbird, red-bellied woodpecker, and Northern cardinal.
7	0834	Heard red-bellied woodpecker and gray catbird. Heard and observed Northern cardinal. Observed gray catbird.
8	0845	Heard and observed gray catbird. Heard red-bellied woodpecker.
9	0858	Heard and observed blue-gray gnatcatcher and common grackle. Heard gray catbird.
10	0910	Heard gray catbird, red-shouldered hawk, and red-bellied woodpecker.
11	0925	Heard gray catbird, red-bellied woodpecker, and mourning dove.
12	0937	Heard wild turkey and mourning dove. Heard and observed red-bellied woodpecker and blue-gray gnatcatcher. Observed black vulture.
13	0950	Observed turkey vulture. Heard gray catbird and common grackle.
14	1000	Heard gray catbird and blue-gray gnatcatcher. Observed turkey vulture.
15	1010	Observed black vulture. Heard gray catbird.

Station	Time	Field Notes
16	1020	Heard blue jay and gray catbird.
	1030	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 29, 2007
Survey Transect: F
Start time of survey: 0730 **Weather conditions:** Mostly cloudy skies, humid, calm winds, and temperatures in the low 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, humid, east winds at 3-7 mph, and temperatures in the mid 80's.

Observer: William R. Cox

Station	Time	Field Notes
1	0730	Observed gray catbird and Northern cardinal. Heard American crow.
2	0750	Heard gray catbird. Observed Coopers hawk.
3	0810	Heard great crested flycatcher and gray squirrel.
4	0830	Heard Coopers hawk and American crow.
5	0850	Heard Carolina wren. Observed blue jay.
6	0915	Heard red-bellied woodpecker and blue jay.
7	0935	Observed gray catbird and blue-gray gnatcatcher. Heard turkey.
8	0955	Heard red-shouldered hawk and white-eyed vireo. Observed blue jay.
9	1015	Observed American crow. Heard great crested flycatcher.
NOTE: Observed panther scrape and fresh scat.		
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 29, 2007
Survey Transect: G
Start time of survey: 0710 **Weather conditions:** Mostly cloudy skies, northeast winds at 5-10 mph, and temperatures in the low 70's.

End time of survey: 1020 **Weather conditions:** Mostly cloudy skies, northeast winds at 10 mph, and temperatures in the mid 70's.

Observer: Stuart Spoede

Station	Time	Field Notes
1	0710	Observed cattle egrets. Heard gray catbird. Observed three white ibis.
2	0725	Observed little blue heron, great egret, 13 white ibis, cattle egrets, and belted kingfisher.
3	0740	Heard Carolina wren and Northern cardinal. Observed white ibis and Carolina wren. Heard and observed blue-gray gnatcatcher.
4	0755	Observed blue-gray gnatcatcher. Heard red-bellied woodpecker. Observed Northern cardinal and 100± white ibis flying to east.
5	0810	Heard and observed red-bellied woodpeckers. Observed blue-gray gnatcatchers. Heard pine warbler. Observed Carolina wrens.
6	0825	Observed Northern cardinal. Heard gray catbird. Observed blue-gray gnatcatchers and belted kingfisher.
7	0840	Heard Northern cardinal. Observed blue-gray gnatcatchers. Heard and observed gray catbird. Observed Carolina wren. Heard pileated woodpecker.
8	0855	Observed little blue heron, tri-colored heron, Northern cardinal, common grackles, great egret, and cattle egret.
9	0910	Heard and observed red-shouldered hawk, anhinga flying to southwest, great egret, belted kingfisher, and pine warbler.
10	0925	Observed common ground doves, anhingas, and Carolina wren. Heard red-bellied woodpecker. Observed cattle egret. Heard pine warbler.
11	0940	Observed blue-gray gnatcatcher, gray catbird, and anhinga. Heard red-shouldered hawk. Observed Carolina wren, common ground doves, and red-bellied woodpecker.
12	0955	Observed great egret, Carolina wren, 12 white ibis flying to east, and 2 snowy egrets.

Station	Time	Field Notes
13	1010	Observed wood stork, six white ibis, cattle egrets, little blue heron, and great blue heron.
	1035	End of survey. No red-cockaded woodpecker heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 30, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Partly cloudy, calm winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Mostly cloudy, northeast winds at 5-15 mph, and temperatures in the low 80's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0730	Heard blue-gray gnatcatcher to the northwest, Northern cardinal to the north, gray catbird to the south, red-shouldered hawk to the southwest, and Carolina wren to the northwest. Observed great egret fly overhead to the northwest. Heard red-bellied woodpecker to the northwest.
2	0744	Heard red-bellied woodpecker to the northeast. Heard and observed small flock of common grackles fly overhead to southeast. Heard pileated woodpecker to the south, Northern cardinal to the southwest, gray catbird to the east, and Florida sandhill cranes to the northeast.
3	0809	Heard Northern cardinal to the north, gray catbird to the southwest, and blue jay to the northeast. Observed yellow-bellied sapsucker to the northeast, white-eyed vireo to the north, and downy woodpecker to the north.
4	0827	Heard red-shouldered hawk and gray catbird to the west. Observed small flock of black vultures perched in snag to the southwest. Gusty conditions.
5	0847	Heard Florida sandhill cranes to the north. Observed black vulture circling to the northeast. Heard gray catbird to the north, red-bellied woodpecker to the east, and Northern cardinal to the east.
6	0903	Windy/gusty conditions. Heard Northern cardinal to the west.
7	0920	Heard and observed common grackle fly overhead to the west. Heard blue-gray gnatcatcher to the west and Carolina wren to the west.
8	0934	Observed black vultures circling to the northwest. Heard gray catbird to the southwest and common grackle to the south. Observed great blue heron fly overhead to the southeast.
9	0948	Heard red-bellied woodpecker to the east and Northern cardinal to the west. Heard and observed Northern mockingbird to the west.
10	1001	Heard warbler sp. to the west. Observed turkey vulture circling to the northwest and red-shouldered hawk perched in pine snag to the northwest. Heard gray catbird to the northwest.

Station	Time	Field Notes
11	1014	Observed turkey vulture circling to the southwest and flock of common grackles fly from south to north. Heard red-bellied woodpecker to the northeast and Carolina wren to the northeast. Heard and observed Northern cardinal to the east.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 30, 2007
Survey Transect: C
Start time of survey: 0720 **Weather conditions:** 90 percent cloud cover, 0-5 mph north winds, and temperatures in the mid 70's.

End time of survey: 1020 **Weather conditions:** 50 percent cloud cover, 10-15 mph northeast winds, and temperatures in the mid 80's.

Observer: Marijke Noens

Station	Time	Field Notes
1	0720	Heard belted kingfisher from the east and west and observed it to the east. Heard red-shouldered hawk from the west and south and red-bellied woodpecker to the east.
2	0740	Heard and observed gray catbird to the southwest. Observed Carolina wren to the north, two white ibis flew east to west, and pileated woodpecker to the east. Heard mourning doves to the southwest, sandhill cranes to the north, and red-bellied woodpecker to the north, south, and east.
3	0800	Observed Northern cardinal to the north, three great egrets flew north to south, pine warbler to the north, and five white ibis flew north to south. Heard blue-gray gnatcatcher to the south and gray catbirds in all directions.
4	0820	Heard red-bellied woodpecker to the west, Carolina wren to the west, and blue jay to the south and west.
5	0840	Observed wild turkey to the southwest.
6	0900	Heard and observed two white ibis fly south to northeast. Observed great blue heron fly west to east.
7	0925	Observed and heard red-bellied woodpecker from all directions. Five to ten white ibis in cypress dome when passing through. Black vulture soaring in the sky toward the south.
8	0945	No wildlife heard or observed.
9	1000	Heard and observed Northern mockingbird to the west. Heard gray catbirds to the south. Observed two white ibis flew north to south.
	1020	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 30, 2007
Survey Transect: D
Start time of survey: 0735 **Weather conditions:** Clear skies, 5-10 mph south winds, and temperatures in the low 70's.

End time of survey: 1025 **Weather conditions:** Mostly cloudy skies, 10-15 mph west winds, and temperatures in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0735	Heard blue jay, gray catbird, American crow, Florida sandhill cranes, and blue-gray gnatcatcher.
2	0750	Heard red-shouldered hawk, gray catbird, Northern cardinal, and pileated woodpecker.
3	0805	Heard and observed gray catbirds. Heard Northern cardinal, blue-gray gnatcatcher, red-bellied woodpecker, red-shouldered hawk, and common grackle.
4	0820	Heard and observed red-bellied woodpecker, gray catbird, blue-gray gnatcatcher, and cattle egret. Heard Northern cardinal and blue jay.
5	0835	Heard red-bellied woodpecker. Heard and observed Northern cardinal, blue-gray gnatcatcher, and gray catbird.
6	0850	Heard and observed gray catbird. Heard Northern cardinal and pileated woodpecker. Observed white ibis and pileated woodpecker.
7	0905	Observed turkey vulture. Heard gray catbird and Northern cardinal.
8	0920	Observed turkey vulture and black vulture. Heard blue jay. Heard and observed gray catbird and red-shouldered hawk.
9	0935	Observed turkey vulture. Heard gray catbird, blue-gray gnatcatcher, and Northern cardinal.
10	0950	Heard Northern cardinal and gray catbird.
	1025	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 30, 2007
Survey Transect: E
Start time of survey: 0735 **Weather conditions:** Partly cloudy skies, calm winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Mostly cloudy skies, 3-8 mph winds, and temperatures in the low 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0735	Heard and observed gray catbirds and Northern cardinal.
2	0750	Heard and observed red-bellied woodpeckers, gray catbirds, blue-gray gnatcatcher, and red-shouldered hawk.
3	0810	Observed wild turkeys and unknown warbler. Heard and observed red-bellied woodpeckers, gray catbirds, and mourning doves.
4	0830	Heard and observed gray catbirds and gray squirrels. Heard barred owl. Observed two white-tailed deer.
5	0850	Heard and observed red-shouldered hawk, mourning doves, and red-bellied woodpeckers. Heard gray catbirds.
6	0915	Heard white-eyed vireo and gray catbird.
7	0935	Heard and observed red-bellied woodpecker, American crow, tree swallows flying, and gray catbirds.
8	0950	Heard and observed Northern cardinals and gray catbirds. Observed great egret flying and turkey vulture.
9	1015	Observed red-shouldered hawks, gray squirrel, and gray catbird. Observed water moccasin on trail. Heard red-bellied woodpeckers.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 30, 2007
Survey Transect: F
Start time of survey: 0725 **Weather conditions:** Partly cloudy skies, 3-5 mph north-northeast winds, and temperatures in the low 70's.

End time of survey: 1020 **Weather conditions:** Partly cloudy skies, 3-7 mph north-northeast winds, and temperatures in the low 80's.

Observer: William R. Cox

Station	Time	Field Notes
1	0725	Heard American crow. No red-cockaded woodpeckers observed.
2	0745	Heard gray catbird and common grackle. No red-cockaded woodpeckers observed.
3	0800	Observed red-shouldered hawk. Heard blue-gray gnatcatcher. No red-cockaded woodpeckers observed.
4	0820	Observed barred owl, mourning dove, and turkey vulture. No red-cockaded woodpeckers observed.
5	0840	Heard ground dove, blue jay, and Carolina wren. No red-cockaded woodpeckers observed.
6	0900	Heard pileated woodpecker. No red-cockaded woodpeckers observed.
7	0920	Observed red-bellied woodpecker. Heard blue jay. No red-cockaded woodpeckers observed.
8	0940	Heard white-eyed vireo and Carolina wren. No red-cockaded woodpeckers observed.
9	1000	Heard great crested flycatcher. Observed mourning dove. No red-cockaded woodpeckers observed.
10	1020	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 30, 2007
Survey Transect: G
Start time of survey: 0700 **Weather conditions:** 30 percent cloud cover, 10-15 mph northeast winds, and temperatures in the low 70's.

End time of survey: 1040 **Weather conditions:** 50 percent cloud cover, 10-15 mph northeast winds, and temperatures in the low 80's.

Observer: Stuart Spoede

Station	Time	Field Notes
1	0700	Heard red-shouldered hawk and gray catbird. Observed two cattle egrets fly south.
2	0715	Heard red-shouldered hawk, Northern mockingbird, and red-bellied woodpecker.
3	0730	Observed little blue heron fly east, blue-gray gnatcatcher, nine common grackle fly south, red-shouldered hawk, and Carolina wren. Heard red-shouldered hawk.
4	0745	Observed six cattle egrets fly south and gray catbird. Heard red-bellied woodpecker and Carolina wren.
5	0800	Observed two wood storks, great egret, little blue heron, and two sandhill cranes. Heard red-shouldered hawk, gray catbird, and red-bellied woodpecker.
6	0830	Observed cattle egret, great egret, belted kingfisher, anhinga, snowy egret, and little blue heron.
7	0845	Observed snowy egret, two belted kingfishers, anhinga, and great egret.
8	0900	Observed black vulture and Carolina wren. Heard pine warbler, red-shouldered hawk, gray catbird, and Carolina wren.
9	0915	Observed turkey vulture, two mourning doves, and blue-gray gnatcatcher.
10	0930	Observed black vulture, six mourning doves, and blue-gray gnatcatcher. Heard gray catbird and Carolina wren.
11	0945	Heard Northern mockingbird, pine warbler, and gray catbird. Observed two black vultures.
12	1000	Observed blue-gray gnatcatcher and two sandhill cranes flying south. Heard Carolina wren and red-shouldered hawk.
13	1015	Observed white ibis, belted kingfisher, and two sandhill cranes. Heard gray catbird and red-bellied woodpecker.

Station	Time	Field Notes
14	1030	Observed six white ibis flying west, blue-gray gnatcatcher, little blue heron, red-shouldered hawk, anhinga, and Carolina wren.
	1040	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 31, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies, northeast winds at 5-10 mph, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Mostly cloudy skies, northeast winds at 10-15 mph and gusting to 25 mph, and temperatures in the low 80's.

Observer: Matt Brosious

Station	Time	Field Notes
1	0730	Heard red-shouldered hawk to the northwest.
2	0745	Heard and observed Florida sandhill cranes fly to the north. Heard Northern cardinal to the east.
3	0800	Wind increasing to 15 mph. Heard American crow to the north.
4	0815	Observed black vulture flying to the west.
5	0830	Observed gray catbird to the west.
6	0845	Heard Northern cardinal and red-bellied woodpecker to the south.
7	0900	Observed black vulture to the north and white ibis flying to the west. Heard pileated woodpecker to the northeast.
8	0925	Heard blue-gray gnatcatcher to the east.
9	0950	Heard downy woodpecker to the northeast.
10	1010	No birds heard or observed.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 31, 2007
Survey Transect: C
Start time of survey: 0725 **Weather conditions:** Partly cloudy skies, 5-10 mph northeast winds, and temperatures in the low 70's.

End time of survey: 1025 **Weather conditions:** Cloudy skies, 10-15 mph northeast winds, and temperatures in the high 70's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0725	Heard and observed gray catbird. Heard red-shouldered hawk, blue jay, Northern cardinal, and red-bellied woodpecker.
2	0738	Heard gray catbird, red-bellied woodpecker, and red-shouldered hawk. Observed black vulture.
3	0752	Heard red-bellied woodpecker, gray catbird, and Northern cardinal. Observed white ibis and gray catbird.
4	0805	Heard and observed gray catbird. Observed black vulture, turkey vulture, white ibis, belted kingfisher, and cattle egret. Heard Northern cardinal and red-shouldered hawk.
5	0818	Observed Florida sandhill cranes. Heard and observed gray catbird and black vulture. Heard Northern cardinal and Northern mockingbird.
6	0832	Heard red-shouldered hawk, red-bellied woodpecker, Northern cardinal, and Northern mockingbird. Heard and observed gray catbird and cattle egret.
7	0847	Observed cattle egret. Heard and observed red-shouldered hawk, gray catbird, common grackle, white ibis, and red-bellied woodpecker.
8	0900	Heard Florida sandhill cranes and red-shouldered hawk. Observed black vulture.
9	0915	Heard and observed common grackle and red-wing blackbird. Observed osprey.
10	0928	Observed turkey vulture and black vulture. Heard Northern cardinal and red-bellied woodpecker.
11	0942	Heard red-wing blackbird, red-shouldered hawk, gray catbird, and Northern cardinal. Observed white ibis. Light rain.

Station	Time	Field Notes
12	0955	Heard and observed red-shouldered hawk, gray catbird, Northern mockingbird, red-wing blackbird, mourning dove, and common grackle.
13	1010	Heard red-shouldered hawk, gray catbird, and Northern cardinal. Observed black vulture and white ibis.
	1025	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 31, 2007
Survey Transect: E
Start time of survey: 0730 **Weather conditions:** Partly cloudy skies, calm winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Overcast skies, 5-10 mph northeast winds, light drizzle, and temperatures in the low 80's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0730	Heard gray catbird to the southeast and pine warblers to the south.
2	0747	Heard red-bellied woodpecker to the north, blue-gray gnatcatcher to the southeast, Northern cardinal to the west, and gray catbird to the north.
3	0806	Heard blue jay to the north, pileated woodpecker to the north, gray catbird to the north, and common grackle to the south.
4	0820	Heard and observed red-bellied woodpecker to the west, yellow-bellied sapsucker to the west, and gray catbird to the west. Heard pileated woodpecker to the north, common grackles to the southeast, and Carolina wren to the northwest.
5	0843	Heard and observed pine warblers to the south. Observed turkey vulture circling to the northwest. Heard blue-gray gnatcatcher to the south, red-bellied woodpecker to the west, and gray catbird to the southwest.
6	0857	Heard gray catbird to the southeast and pine warblers to the northeast.
7	0912	Heard pine warblers to the northeast and gray catbird to the north. Observed turkey circling to the northeast.
8	0924	Heard gray catbird to the west and Northern cardinal to the southwest. Observed black vulture circling to the north.
9	0941	Heard gray catbird to the north and pine warblers to the west.
10	0955	Heard gray catbird to the northwest and pine warblers to the north.
11	1011	Heard Northern cardinal to the west and pine warblers to the northwest.
12	1024	Heard Northern cardinal to the west and blue-gray gnatcatcher to the east.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 31, 2007
Survey Transect: F
Start time of survey: 0740 **Weather conditions:** Partly cloudy skies, 3-5 mph winds, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Mostly cloudy skies, 5-10 mph winds, occasional light rain, and temperatures in the low 80's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0740	Heard gray catbirds.
2	0755	Observed red-shouldered hawk and wild turkeys on the trail.
3	0820	Heard and observed gray catbirds and black vulture flying.
4	0840	Observed red-bellied woodpecker. Heard gray catbird.
5	0855	Observed gray catbird and unknown warbler.
6	0910	Heard gray catbird. Observed black racer and gray squirrel.
7	0925	No wildlife heard or observed.
8	0945	Heard and observed gray catbird and Northern cardinal.
9	1000	No wildlife heard or observed.
10	1015	Heard gray catbird.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: October 31, 2007
Survey Transect: G
Start time of survey: 0728 **Weather conditions:** Mostly cloudy skies, 10-15 mph moderate winds with higher gusts, and temperatures in the low 70's.

End time of survey: 1037 **Weather conditions:** Cloudy skies with light rain, 10-15 mph moderate winds with higher gusts, and temperatures in the mid 70's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0728	Heard gray catbirds, red-shouldered hawk, and red-bellied woodpecker. Observed European starlings, sandhill cranes flying south 50± feet over.
2	0746	Heard Northern cardinal, gray catbirds, and red-bellied woodpecker. Observed black vulture, common grackles, and mourning dove.
3	0802	Observed kestrel, anhinga, yellow-rumped warbler, and little blue heron in ditch. Heard pine warbler and gray warbler.
4	0815	Observed common grackle, anhinga, and three white ibis flying south 100± feet over. Heard Northern cardinal and gray catbirds.
5	0830	Observed great crested flycatcher, red-bellied woodpecker, and cattle egrets. Heard gray catbirds and red-wing blackbird.
6	0854	Observed three glossy ibis flying 25± feet over and 15 sandhill cranes in field to the southeast. Heard common grackle, Northern cardinal, and red-wing blackbird.
NOTE: Observed bear scat on berm between Stations 6 and 7.		
7	0908	Heard gray catbird. Observed common grackles.
8	0921	Observed panther tracks on berm. Heard common grackles and gray catbirds.
NOTE: Panther scat observed near Station 9.		
9	0942	Heard kestrel and gray catbirds. Light rain.
10	1004	Heard kestrel. Observed cattle egrets.
11	1016	Observed great crested flycatchers, red-wing blackbird, and gray catbirds. Light rain.
	1037	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 1, 2007
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Overcast skies, northeast winds at 10-15 mph, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly sunny skies, northeast winds at 15-20 mph, and temperatures in the low 80's.

Observer: Matt Brosious

Station	Time	Field Notes
1	0730	Heard gray catbird to the north and red-shouldered hawk to the west.
2	0745	Heard red-bellied woodpecker to the west. Observed Northern mockingbird to the east.
3	0800	Observed black vulture to the north. Heard American crow to the northeast.
4	0820	Heard Northern cardinal to the southwest and great crested flycatcher to the south.
5	0840	Heard downy woodpecker and red-bellied woodpecker to the north.
6	0900	Observed black vulture to the north. Heard and observed Northern cardinal to the west. Observed common ground dove to the north on trail.
7	0920	Observed Florida sandhill cranes fly to the east.
8	0940	Heard gray catbird to the south and Northern cardinal to the east.
9	1000	Heard downy woodpecker to the northeast.
10	1015	Heard and observed Northern mockingbird to the northeast. Observed red-shouldered hawk fly to the north.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 1, 2007
Survey Transect: C
Start time of survey: 0730 **Weather conditions:** Cloudy skies, east winds at 10-15 mph, and temperatures in the mid 70's.

End time of survey: 1027 **Weather conditions:** Partly cloudy skies, east winds at 10-15 mph, and temperatures in the low 80's.

Observer: Jonathan Bakken

Station	Time	Field Notes
1	0730	Heard red-shouldered hawk. Observed black vulture and turkey vulture. Heard red-bellied woodpecker and Florida sandhill crane.
2	0743	Observed white ibis and cattle egret. Heard and observed gray catbird and red-shouldered hawk. Heard red-bellied woodpecker, Northern cardinal, blue-gray gnatcatcher, and American crow.
3	0757	Heard red-shouldered hawk, blue-gray gnatcatcher, red-bellied woodpecker, and gray catbird. Observed anhinga.
4	0810	Heard red-bellied woodpecker, red-shouldered hawk, and gray catbird. Observed downy woodpecker and white ibis.
5	0825	Heard and observed red-bellied woodpecker, great egret, great blue heron, Northern cardinal, gray catbird, and warbler sp.
6	0840	Heard Northern cardinal, red-bellied woodpecker, and red-shouldered hawk. Observed white ibis, turkey vulture, and gray catbird.
7	0855	Observed white ibis. Heard red-shouldered hawk, gray catbird, blue-gray gnatcatcher, red-bellied woodpecker, and Northern cardinal.
8	0908	Heard and observed red-bellied woodpecker. Observed black vulture and white ibis. Heard red-shouldered hawk, Northern cardinal, gray catbird, and common grackle.
9	0920	Heard red-shouldered hawk and gray catbird. Observed common grackle and red-bellied woodpecker.
10	0935	Heard and observed red-shouldered hawk, gray catbird, white ibis, barred owl, American crow, and red-bellied woodpecker.
11	0950	Heard gray catbird, red-shouldered hawk, American crow, Northern cardinal, and red-bellied woodpecker.
12	1003	Heard Northern cardinal and gray catbird. Observed black vulture. Heard red-bellied woodpecker.

Station	Time	Field Notes
13	1015	Heard blue-gray gnatcatcher. Observed white ibis. Heard gray catbird and red-bellied woodpecker. Heard and observed red-shouldered hawk. Observed black vulture.
	1027	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 1, 2007
Survey Transect: D
Start time of survey: 0730 **Weather conditions:** Cloudy skies, north-northeast winds at 10-15 mph, and temperatures in the mid 70's.

End time of survey: 1038 **Weather conditions:** Partly cloudy skies, north-northeast winds at 15-20 mph, and temperatures in the low 80's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0730	Heard and/or observed gray catbird, Carolina wren, and blue-gray gnatcatcher.
2	0805	Heard and/or observed gray catbird, red-bellied woodpecker, red-shouldered hawk, and Carolina wren.
3	0833	Heard and/or observed gray catbird, red-bellied woodpecker, downy woodpecker, fish crow, and pileated woodpecker to the south.
4	0915	Heard and/or observed fish crow, gray catbird, red-bellied woodpecker foraging on pines, and Northern cardinal.
5	0947	Heard and/or observed downy woodpecker, gray catbird, Carolina wren, pileated woodpecker, blue jay, and cattle egret.
	1038	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 1, 2007
Survey Transect: E
Start time of survey: 0725 **Weather conditions:** Overcast skies, calm north-northeast winds at 0-5 mph, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Mostly cloudy skies, north-northeast winds at 5-10 mph, and temperatures in the low 80's.

Observer: Jennifer Evans

Station	Time	Field Notes
1	0725	Heard Northern cardinal, Carolina wren, and gray catbird. Observed two wild dogs.
2	0740	Observed red-shouldered hawk.
3	0755	Heard and observed gray catbird. Heard Northern cardinal and common grackle.
4	0810	Heard pileated woodpecker, common grackle, and red-bellied woodpecker.
5	0825	Heard and observed red-bellied woodpecker and blue jay. Heard Northern cardinal, gray catbird, and blue-gray gnatcatcher. Observed mourning doves. Observed one adult Florida black bear and one cub cross trail just south of feeder, heading east. Wind gusts increased.
6	0840	Heard and observed Northern cardinal. Heard red-shouldered hawk and blue-gray gnatcatcher. Heard and observed gray catbird, Eastern phoebe, and red-bellied woodpecker. Heard white-eyed vireo.
7	0900	Heard and observed gray catbird. Observed turkey vulture flying and white-tailed deer.
8	0915	Heard and observed gray catbird. Heard Northern cardinal and pine warbler.
9	0930	Observed turkey vultures flying overhead. Wind gusts increased to approximately 10-15 mph out of the north-northeast.
10	0945	Observed black vultures flying overhead. Heard Northern cardinal.
11	1005	Observed bear scat on trail. Observed numerous bear scratch trees. Observed one adult Florida black bear hidden behind trees. Heard and observed red-shouldered hawk. Heard Northern cardinal and gray catbird.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 1, 2007
Survey Transect: F
Start time of survey: 0730 **Weather conditions:** Overcast skies, northeast winds at 5-15 mph, and temperatures in the mid 70's.

End time of survey: 1030 **Weather conditions:** Partly cloudy skies, northeast winds at 5-15 mph, and temperatures in the low 80's.

Observer: Chris Ryan

Station	Time	Field Notes
1	0730	Heard gray catbird to the south, pine warbler to the southeast, and red-shouldered hawk.
2	0744	Observed black vulture fly overhead to the northwest. Heard red-shouldered hawk to the northeast, common grackle to the north, and pine warbler to the southwest.
3	0800	Heard pine warbler to the northeast, gray catbird to the southwest, and Eastern towhee to the west.
4	0815	Heard gray catbird to the southwest, red-shouldered hawk to the southwest, and pine warbler to the east.
5	0831	Observed pileated woodpecker to the west. Heard blue-gray gnatcatcher to the east, and pine warbler to the north.
6	0842	Heard pine warbler to the southwest.
7	0900	Heard pine warblers to the north. Observed hairy woodpecker to the south. Heard gray catbird to the southeast.
8	0923	Heard gray catbird to the east.
9	0936	Heard gray catbird to the south.
10	0949	Heard gray catbird and pine warbler to the west.
11	1003	Heard gray catbirds and pine warbler to the southwest.
12	1015	Heard pine warbler to the northwest.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 1, 2007
Survey Transect: G
Start time of survey: 0700 **Weather conditions:** Cloudy skies, northeast winds at 15-20 mph, and temperatures in the low 70's.

End time of survey: 1025 **Weather conditions:** Cloudy skies, northeast winds at 15-20 mph, and temperatures in the upper 70's.

Observer: Stuart Spoede

Station	Time	Field Notes
1	0700	Heard red-shouldered hawk and gray catbird.
2	0715	Observed red-shouldered hawk, two wood storks, and 14 white ibis flying south.
3	0730	Heard white-eyed vireo. Observed little blue heron flying south, blue-gray gnatcatcher, and little blue heron.
4	0745	Heard red-bellied woodpecker. Heard and observed pileated woodpecker. Observed Northern cardinal and Carolina wren.
5	0800	Observed turkey vulture, blue-gray gnatcatcher, Carolina wren, six white ibis flying south, and five cattle egrets flying east. Heard red-shouldered hawk.
6	0815	Observed great blue heron, belted kingfisher, ten white ibis, little blue heron and Carolina wren. Heard gray catbird.
7	0830	Heard gray catbird, Carolina wren, and white-eyed vireo. Observed white ibis and great egret.
8	0845	Heard red-bellied woodpecker. Observed wood stork, eight white ibis, three mourning doves, and Northern mockingbird.
9	0900	Heard Northern cardinal. Observed red-bellied woodpecker, black vulture, and cattle egret.
10	0915	Heard gray catbird, blue-gray gnatcatcher, and red-shouldered hawk. Observed Carolina wren, three common grackles, and palm warbler.
11	0930	Heard pine warbler. Observed four roseate spoonbills, three white ibis, great blue heron, great egret, Carolina wren, and two belted kingfishers.
12	0945	Observed anhinga, red-shouldered hawk, Carolina wren, ground dove, little blue heron, and Eastern phoebe. Heard white-eyed vireo.

Station	Time	Field Notes
13	1000	Observed Carolina wren, Northern cardinal, white ibis, cattle egret, and snowy egret. Heard red-bellied woodpecker.
14	1015	Observed three ground doves, gray catbird, red-shouldered hawk, tri-color heron, palm warbler, Carolina wren, four white ibis, and kestrel.
	1025	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 7, 2007
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Clear skies, calm wind, and temperature in the low 50's.

End time of survey: 0930 **Weather conditions:** Clear skies, light wind 0-5 mph, and temperature in the upper 60's.

Observer: Bethany Bachelor

Station	Time	Field Notes
1	0635	Observed 10± white ibis flying 100± feet overhead to the north. Heard Northern cardinal, red-shouldered hawk, Carolina wren, and pine warbler.
2	0654	Observed pine warbler. Heard gray catbird and red-shouldered hawk.
3	0708	Observed red-bellied woodpecker. Heard gray catbird, Northern cardinal, and downy woodpecker.
4	0722	Heard Northern cardinal and gray catbird.
5	0737	Observed common grackles and red-bellied woodpecker. Heard Northern cardinal, downy woodpecker, and Carolina wren.
6	0753	Observed two white ibis flying 100± feet overhead. Heard gray catbird downy woodpecker, red-bellied woodpecker, pileated woodpecker, and blue-gray gnatcatcher.
7	0811	Observed Northern cardinal, red-bellied woodpecker, and pileated woodpecker. Heard downy woodpecker.
8	0826	Observed common grackle. Heard Northern cardinal, gray catbirds, blue-gray gnatcatcher, and red-bellied woodpecker.
9	0839	Heard Northern cardinal, red-bellied woodpecker, pileated woodpecker, downy woodpecker, blue-gray gnatcatcher, pine warbler, and blue jay.
10	0900	Observed Northern cardinal, Northern mockingbird, and red-shouldered hawk. Heard common grackles and red-bellied woodpecker.
11	0915	Observed black vultures. Heard pine warbler and red-bellied woodpecker.
	0930	End of survey. No red-bellied woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 7, 2007
Survey Transect: F
Start time of survey: 0640 **Weather conditions:** Clear skies, calm wind, and temperature in the upper 50's.

End time of survey: 0935 **Weather conditions:** Partly cloudy skies, calm wind, and temperature in the low 70's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0640	Heard red-shouldered hawk.
2	0655	Observed gray catbirds and turkey vultures.
3	0715	Heard and observed red-bellied woodpecker and downy woodpecker. Heard American crow.
4	0730	Heard and observed Northern cardinal. Observed black vulture and mourning doves.
5	0750	Observed pileated woodpecker. Heard gray catbirds.
6	0810	Observed unknown warbler and mourning dove. Heard American crow and red-shouldered hawk.
7	0825	Heard and observed gray catbirds, brown thrasher, and Northern cardinal. Observed Florida panther tracks in mud.
8	0845	Observed black racer and pileated woodpecker. Heard white-eyed vireo and red-bellied woodpecker.
9	0905	Heard and observed gray catbirds, red-bellied woodpecker, and red-shouldered hawk. Heard white-eyed vireo.
10	0920	Observed downy woodpeckers. Heard American crow and gray catbirds.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 8, 2007
Survey Transect: C
Start time of survey: 0640 **Weather conditions:** Clear skies, no wind, and temperature in the low 50's.

End time of survey: 0943 **Weather conditions:** Partly cloudy skies, wind 0-5 mph north, and temperature in the high 60's.

Observer: Chris Emblidge

Station	Time	Field Notes
1	0640	Heard and observed mourning doves, red-shouldered hawk, cattle egret, gray catbird, boat-tailed grackles, and red-bellied woodpeckers foraging on pine snags.
2	0708	Heard and observed red-shouldered hawk, gray catbird, Carolina wren, and red-bellied woodpeckers foraging on live pines.
3	0748	Heard and observed gray catbird, Northern cardinal, boat-tailed grackles, and red-bellied woodpeckers foraging on pine snags. Heard red-bellied woodpecker to the north and Florida sand hill cranes to the east.
4	0832	Heard and observed red-shouldered hawk, downy woodpecker to the north, gray catbird, white ibis, pine warbler, turkey vultures, and black vultures.
5	0907	Heard and observed white ibis flying overhead, vultures, gray catbird, Carolina wren, and red-bellied woodpeckers foraging on live pines.
	0943	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 8, 2007
Survey Transect: D
Start time of survey: 0635 **Weather conditions:** Clear skies, wind 5-10 mph north, and temperature in the mid 50's.

End time of survey: 0935 **Weather conditions:** Clear skies, wind 10-15 mph north, and temperature in the low 70's.

Observer: Matthew Brosious

Station	Time	Field Notes
1	0635	Heard red-shouldered hawk to the west and gray catbird to the east.
2	0650	Heard Northern mockingbird and red-bellied woodpecker to the north.
3	0710	Heard and observed pileated woodpecker to the northwest and downy woodpecker to the west. Heard American crow to the northeast and southwest.
4	0730	Heard downy woodpecker to the east and Northern mockingbird to the northeast.
5	0750	Heard pileated woodpecker to the northeast.
6	0815	Heard gray catbird to the southwest and American crow to the north.
7	0835	Heard Northern cardinal to the east and American crow to the southwest.
8	0855	Heard and observed red-bellied woodpecker to the west.
9	0915	Observed black vultures to the west.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 8, 2007
Survey Transect: F
Start time of survey: 0630 **Weather conditions:** Clear skies, calm, winds, and temperature in the low 50's.

End time of survey: 0910 **Weather conditions:** Sunny skies, wind 0-5 mph, and temperature in the upper 60's.

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0630	Heard and observed gray catbirds and blue-gray gnatcatchers.
2	0645	Heard and observed red-bellied woodpecker, red-shouldered hawk, and gray catbirds. Observed great egret flying.
3	0700	Observed black vultures, blue-gray gnatcatchers, and raccoon in pine tree. Heard white-eyed vireo.
4	0720	Heard and observed Northern cardinal, gray catbirds, mourning doves, and American crow.
5	0735	Heard and observed red-bellied woodpeckers.
6	0755	Observed white-tailed deer. Heard red-shouldered hawk.
7	0820	Heard and observed American crow, red-bellied woodpeckers, and gray catbirds. Observed mourning doves and tree swallows flying.
8	0840	Heard and observed gray squirrel.
9	0855	Heard and observed red-bellied woodpeckers and mourning doves.
	0910	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

BIG CYPRESS STEWARDSHIP DISTRICT
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: November 9, 2007
Survey Transect: C
Start time of survey: 0640 **Weather conditions:** Clear skies, no wind, and temperature in the mid 50's.

End time of survey: 0945 **Weather conditions:** Mostly sunny skies, wind 0-5 mph north-northwest, and temperature in the low 70's.

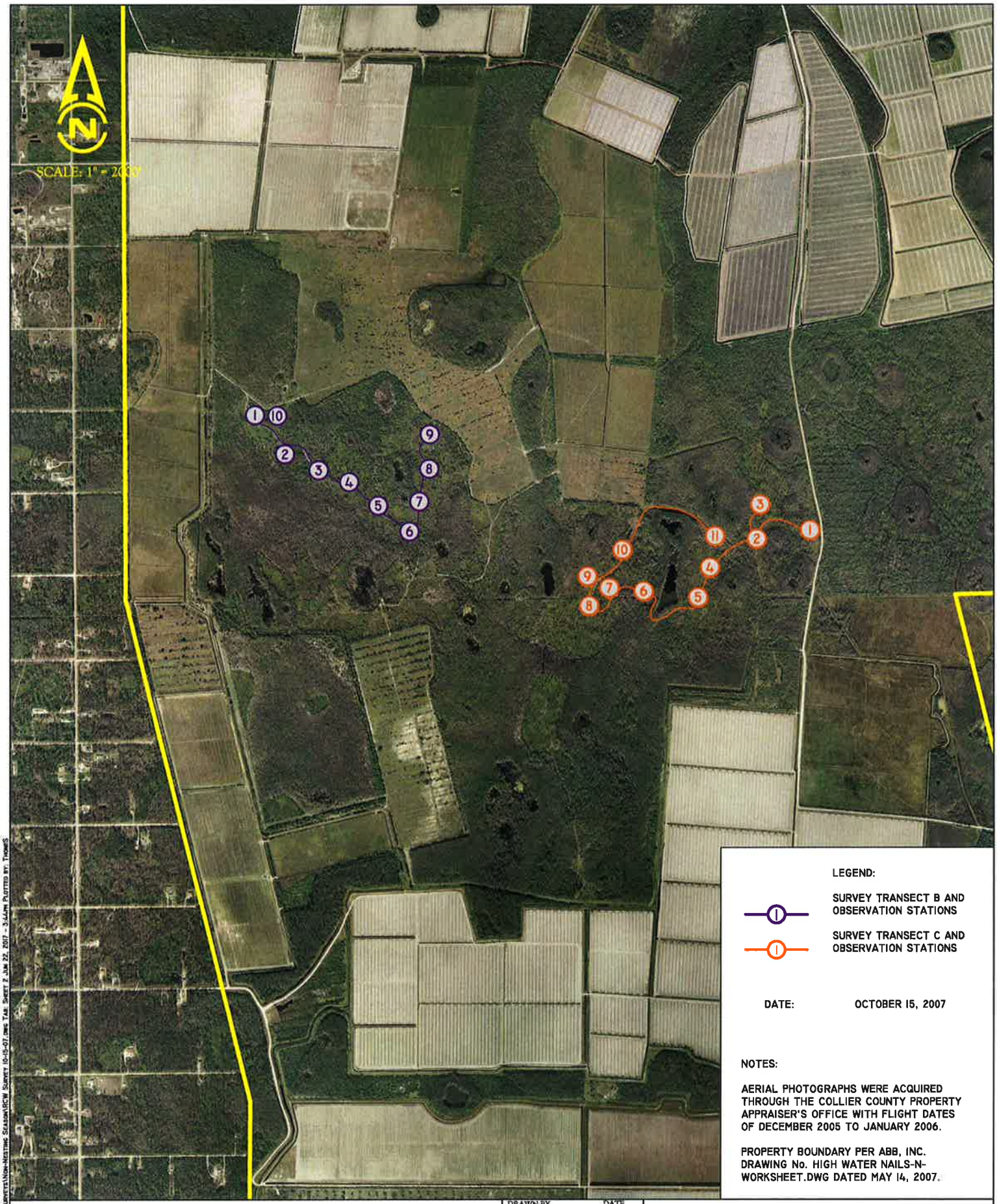
Observer: Chris Emblidge

Station	Time	Field Notes
1	0640	Heard and observed mourning dove, red-shouldered hawk, Florida sandhill cranes to the east, red-bellied woodpecker to the north, gray catbirds, and white ibis.
2	0710	Heard and observed red-shouldered hawk, red-bellied woodpecker foraging on live pines, gray catbird, grey squirrel, white ibis, pileated woodpecker fly south, and Carolina wren.
3	0728	Heard and observed gray catbird, white ibis, red-bellied woodpecker foraging on live pines, great-crested flycatcher, pileated woodpecker foraging on pine snag, red-shouldered hawk, blue jay, and downy woodpecker to the west.
4	0807	Heard and observed gray catbird, red-shouldered hawk, red-bellied woodpecker to the south, Carolina wren, downy woodpecker fly to the west, and white ibis.
5	0840	Heard and observed red-bellied woodpeckers foraging on live pines and gray catbird.
6	0908	Heard and observed red-shouldered hawk, red-bellied woodpecker foraging on cypress tree, Northern cardinal, turkey vultures, black vultures, great egret fly east, and gray catbird.
	0945	End of survey. No red-cockaded woodpeckers heard or observed during this survey.

Note: Observations are summarized for time period noted.

APPENDIX D

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY MAPS WITH STATION NUMBERS



LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: OCTOBER 15, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

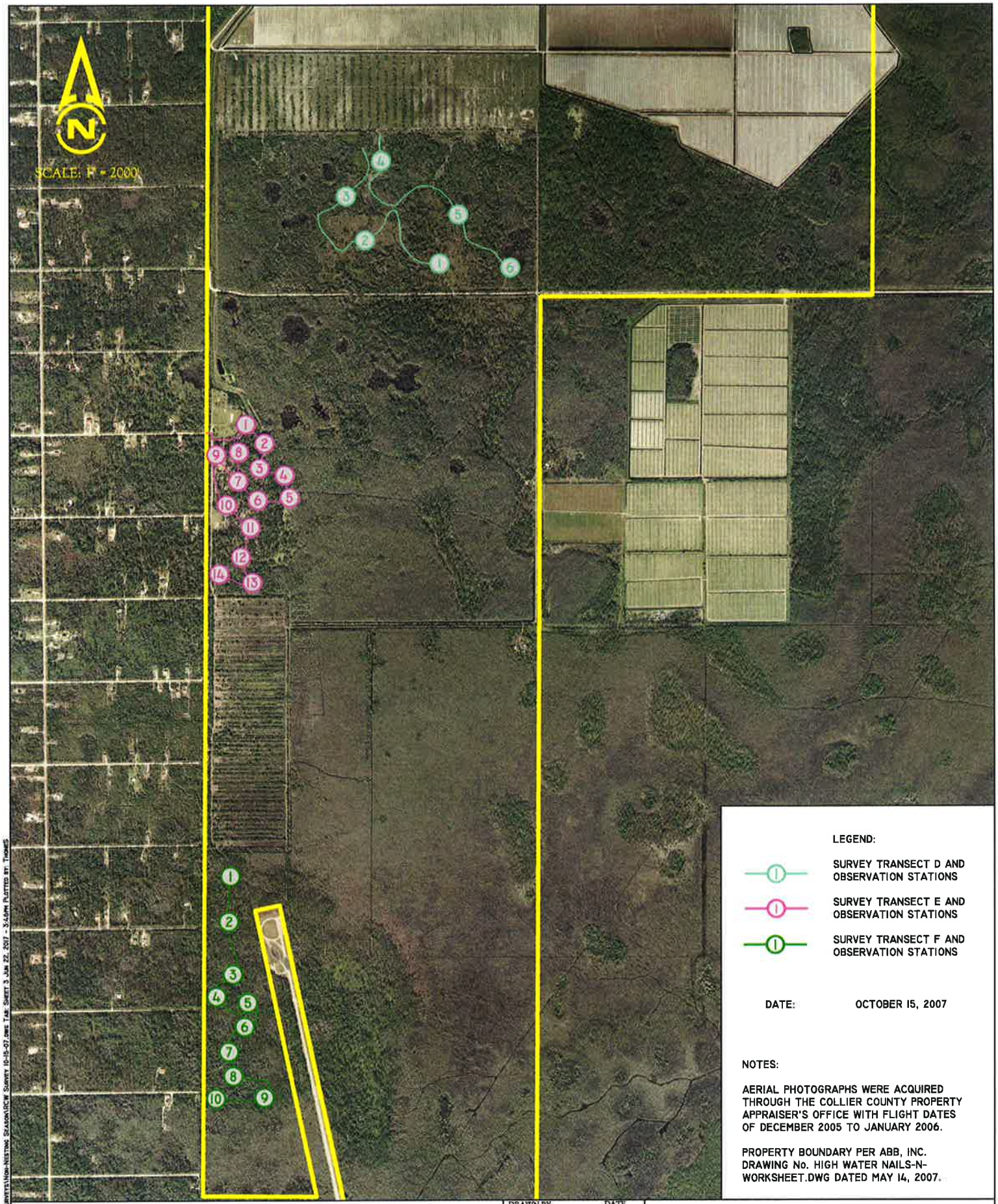
RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY: F.L.	DATE: 11/2/07
REVIEWED BY: C.G.R.	DATE: 11/2/07
REVISED	DATE

Consulting Ecologists

PASSARELLA & ASSOCIATES INC

J:\2005\05CEN&E\NRCW Surveys\Non-Nesting Season\RCW Survey 10-15-07.dwg Tab: Sheet 2 Jun 22, 2007 - 3:44pm Plotted by: Thomas

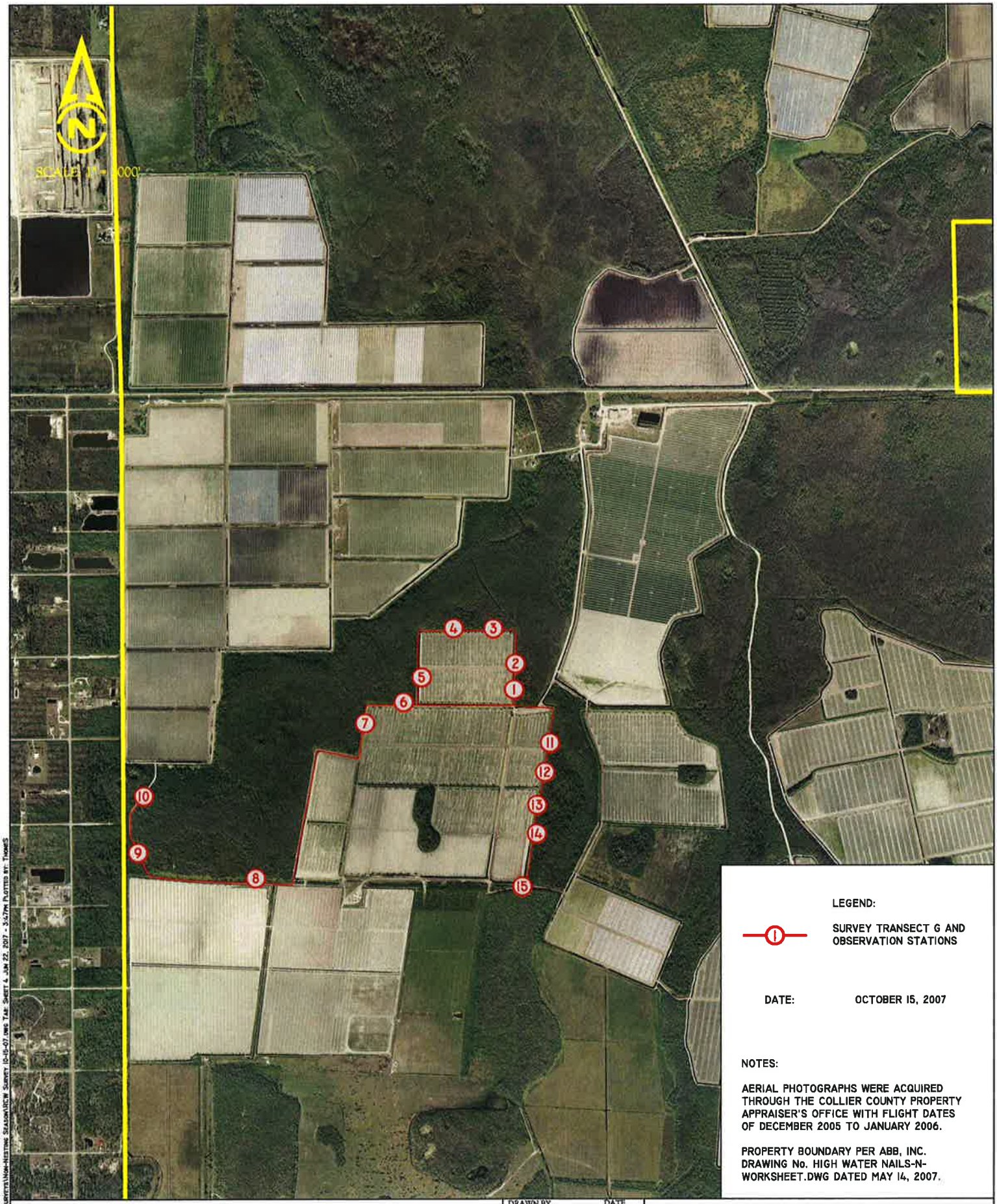


RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	11/2/07
REVIEWED BY	DATE
C.G.R.	11/2/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen4&1\RCW Surveys\Non-Nesting Season\RCW Survey 10-15-07.dwg Tab: Sheet 3 Jun 22, 2007 - 3:40pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 15, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

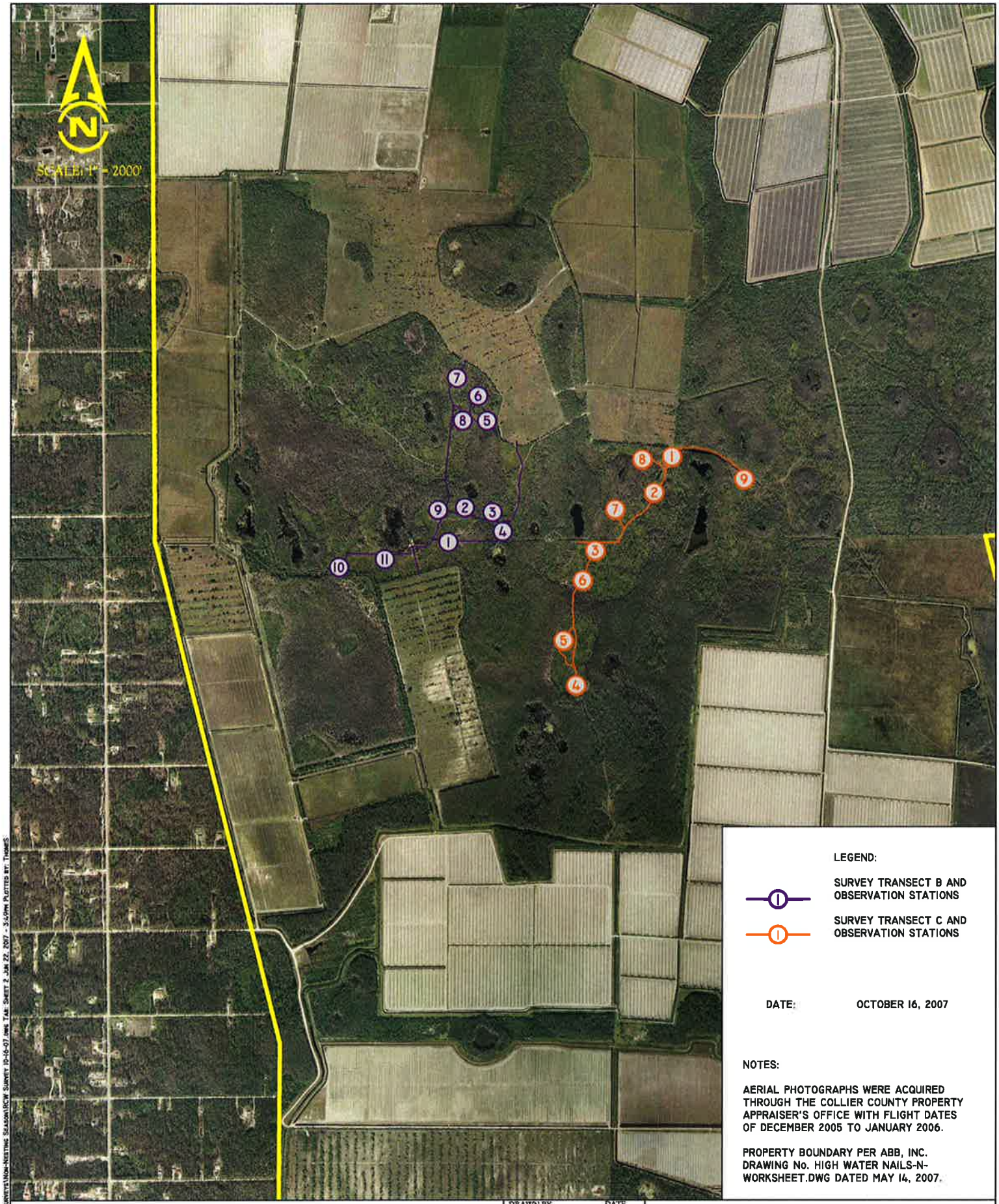
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	11/2/07
REVIEWED BY	DATE
C.G.R.	11/2/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\17005\05CEN\4&1\RCW Surveys\NON-NESTING SEASON\RCW Survey 10-18-07.dwg Tab: Sheet 4 JAN 22, 2007 - 3:57PM PLOTTED BY: THOMES

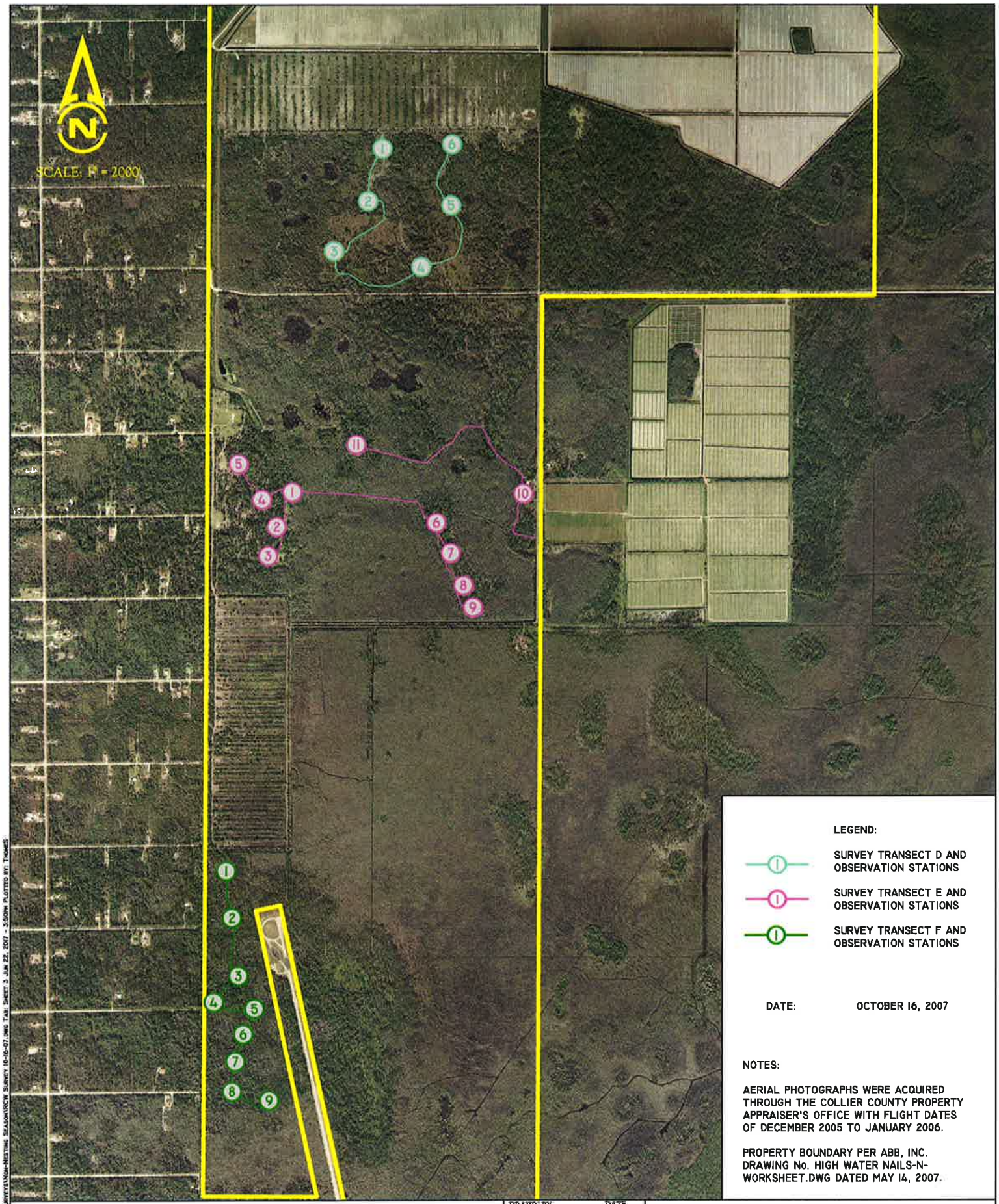


RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	11/2/07
REVIEWED BY	DATE
C.G.R.	11/2/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEHIA01RCW SURVEYS\NON-NESTING SEASON\RCW SURVEY 10-16-07.DWG TAB: SHEET 2 JUN 23, 2007 - 3:40PM PLOTTED BY: THOMES



RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	11/2/07
REVIEWED BY	DATE
C.G.R.	11/2/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cehla\RCW Surveys\Non-Nesting Season\RCW Survey 10-16-07.dwg Tab: Sheet 3 Jun 22, 2007 - 3:50pm Plotted by: Thomas

LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 16, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	11/2/07
REVIEWED BY	DATE
C.G.R.	11/2/07
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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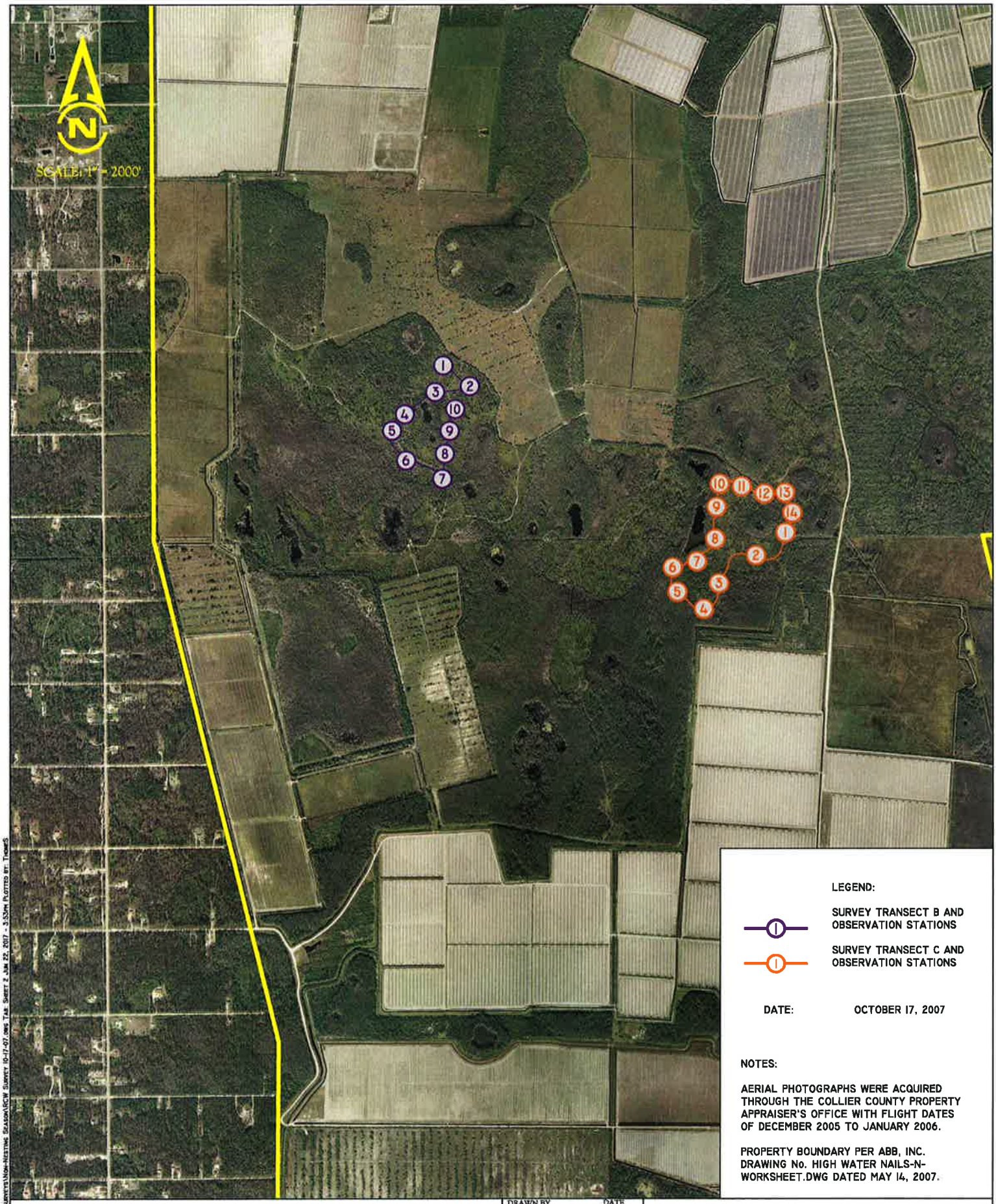


LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: OCTOBER 17, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

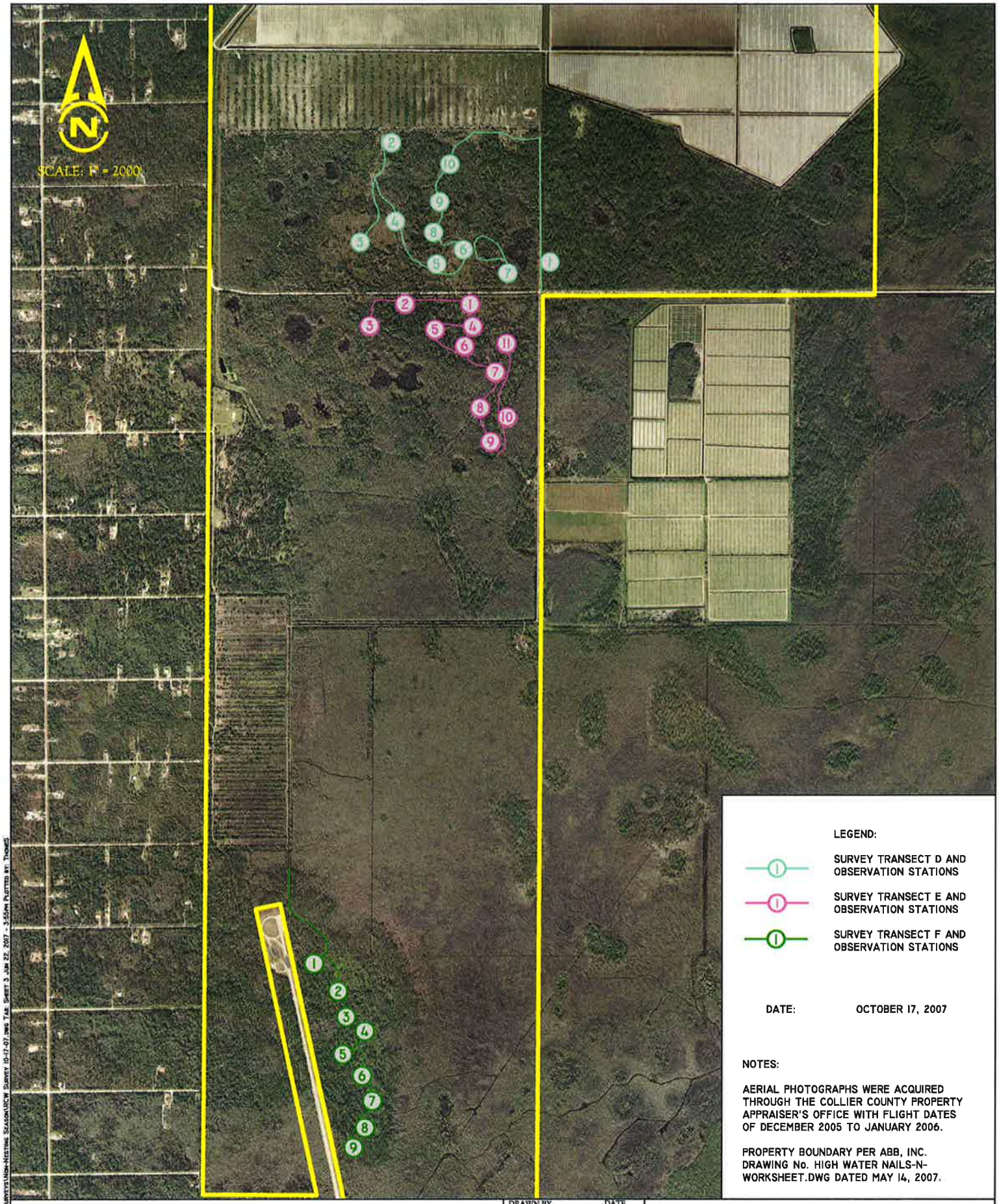
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEHIL81\RCW Surveys\Non-Nesting Season\RCW Survey 10-17-07.dwg Tab: Sheet 2 Jan 22, 2007 - 3:53pm Plotted by: Thomas



RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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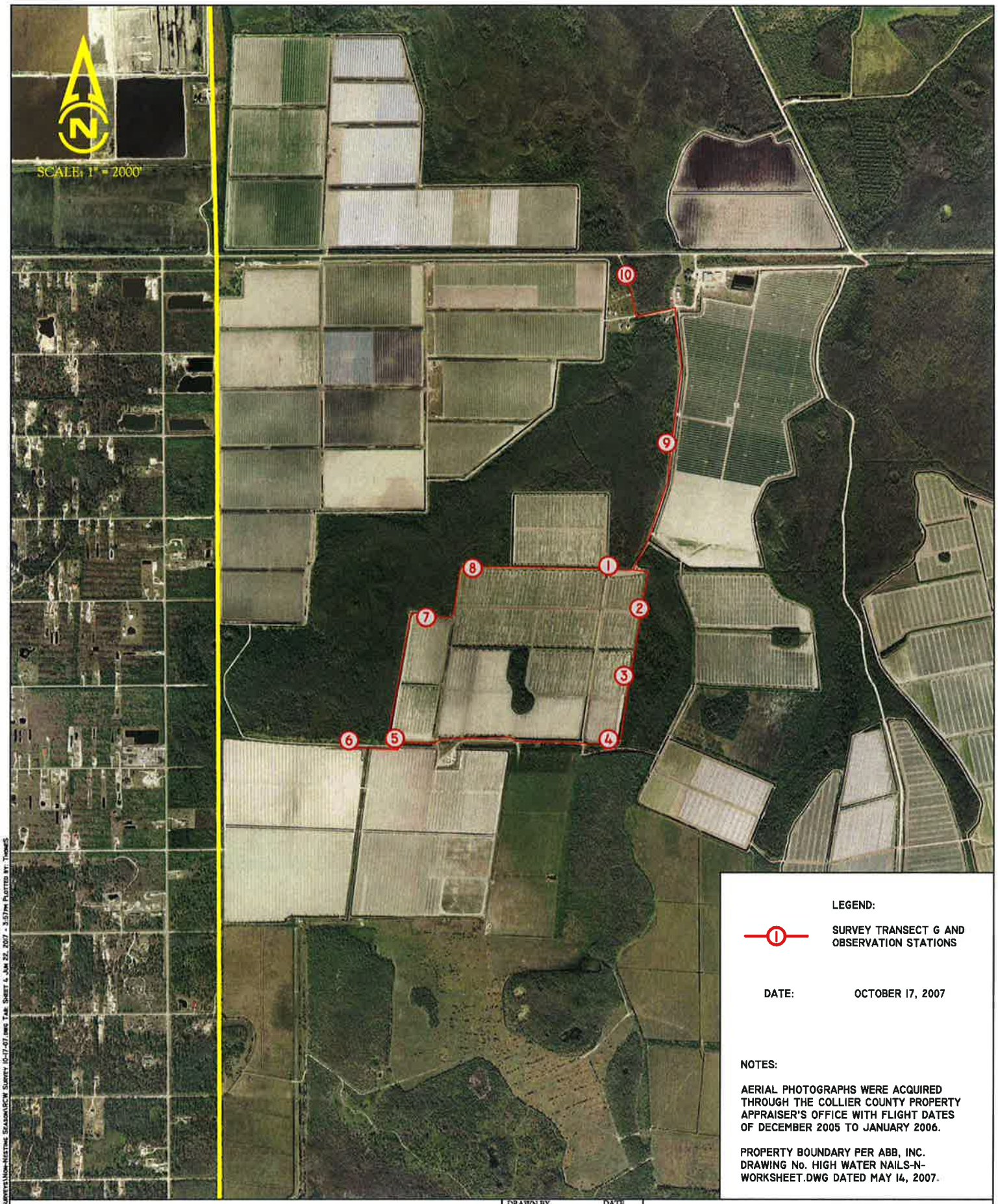


LEGEND:

1 SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 17, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

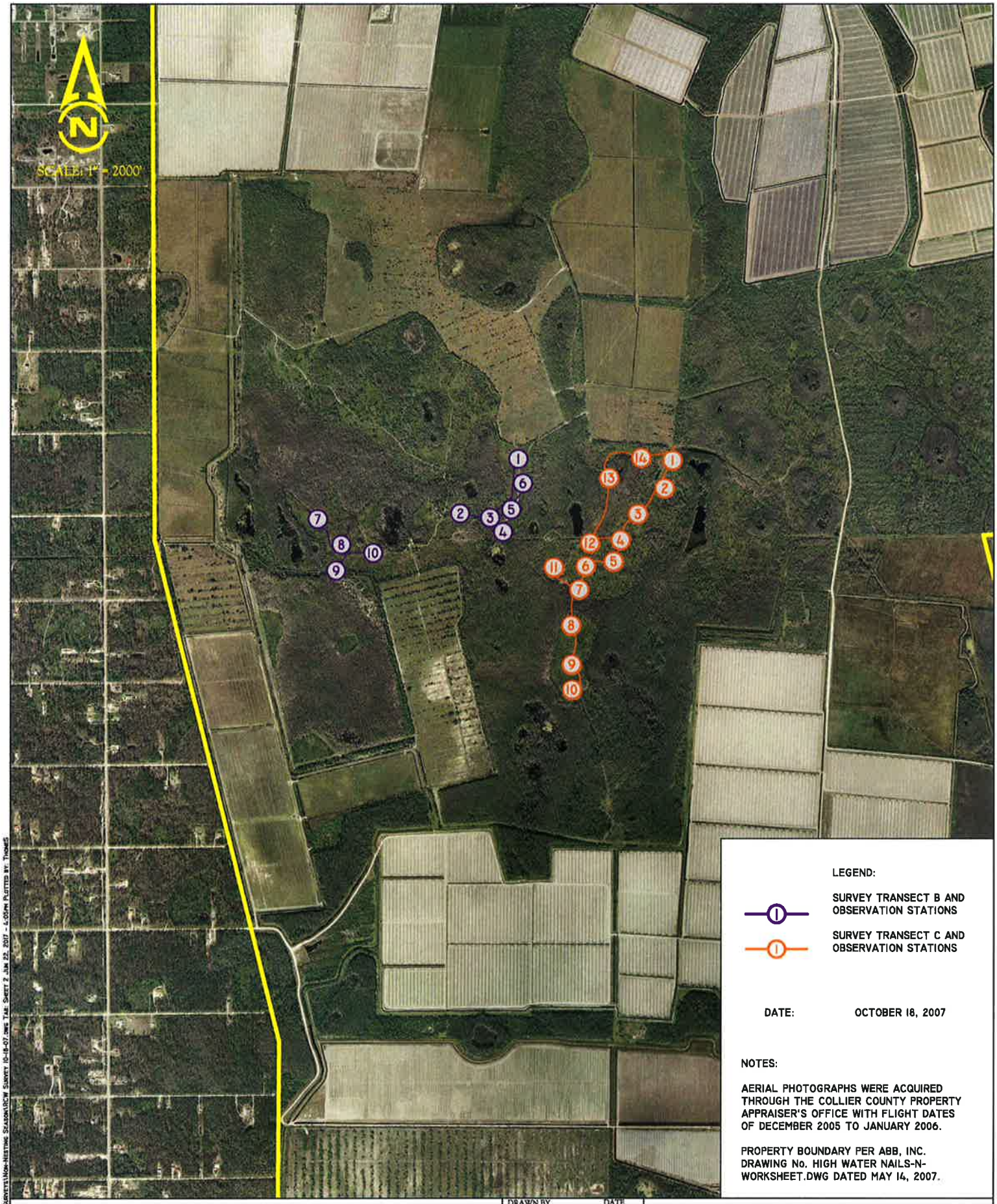
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05csmi&ll\RCW Surveys\Non-Nesting Season\RCW Survey 10-17-07.dwg Tab: Sheet 6 Jan 22, 2007 - 3:57pm Plotted by: Thomas

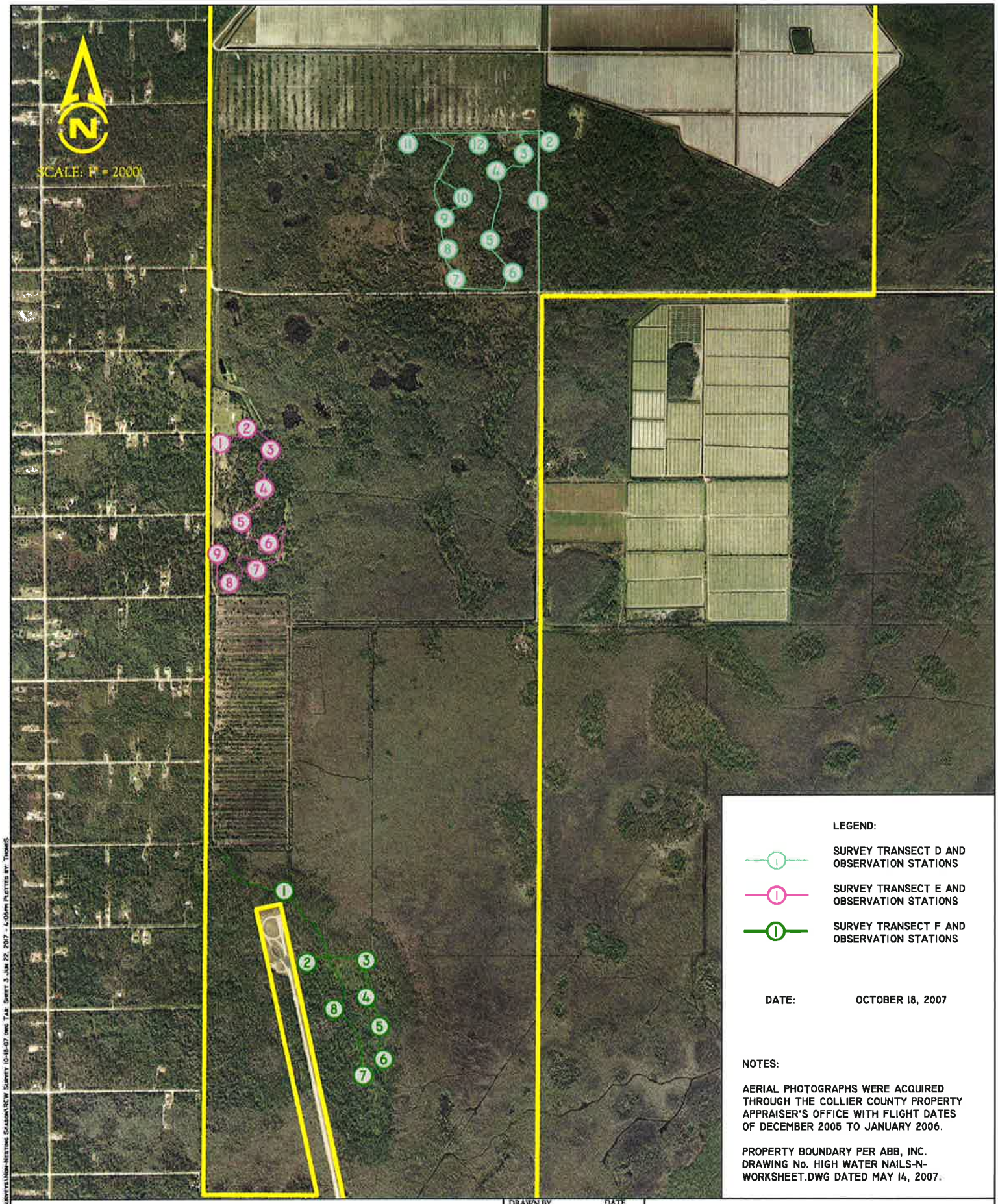


RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen\481\RCW Surveys\Non-Nesting Season\RCW Survey 10-18-07.dwg TAB: Sheet 2 JUN 23, 2017 - 4:05PM PLOTTED BY: Thomas

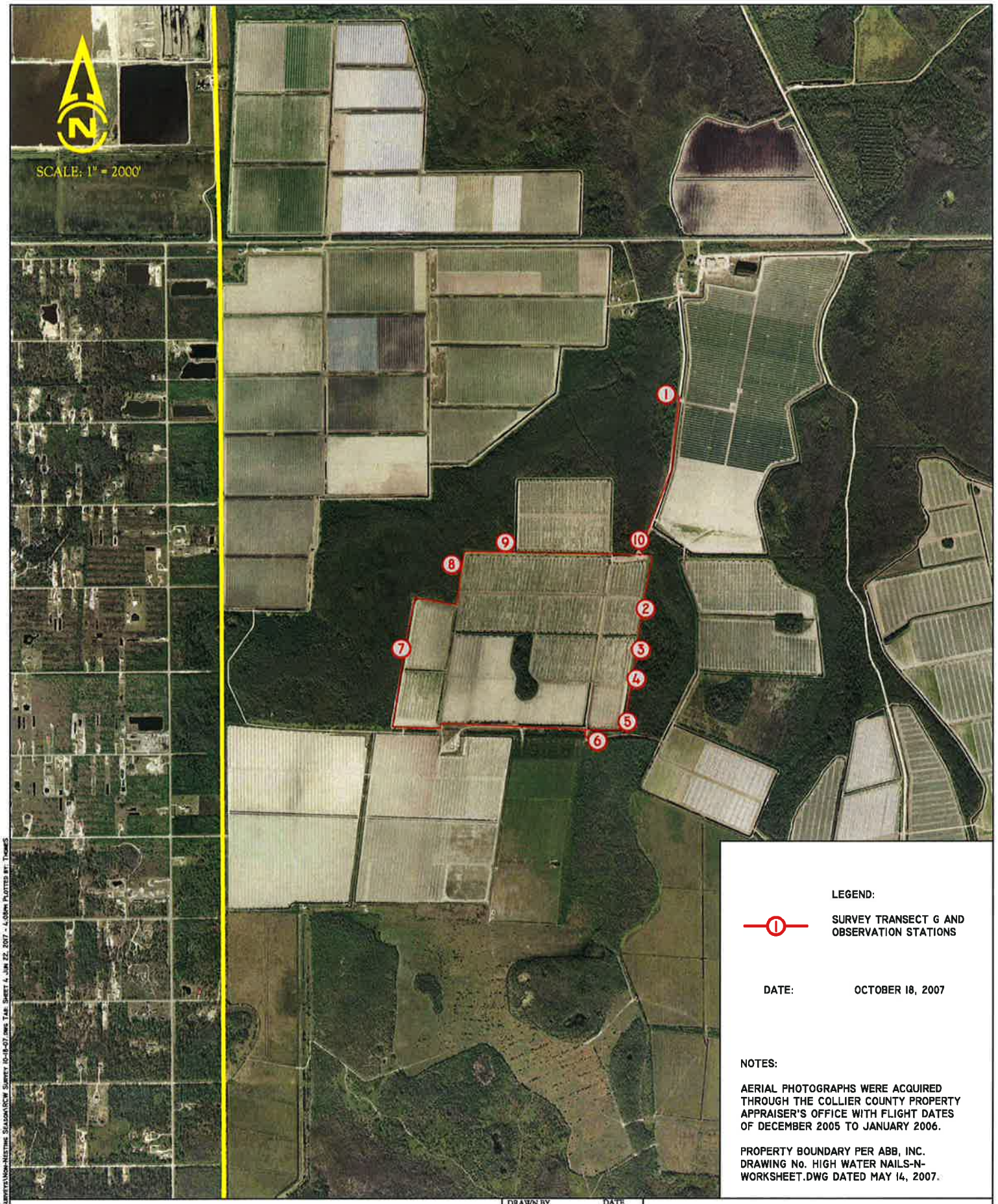


RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

Passarella & Associates, Inc. — Consulting Ecologists

J:\2005\05CEMAI\RCW Surveys\Non-Nesting Season\RCW Survey 10-18-07.dwg TAB: Sheet 3 JAN 22, 2007 - 4:06pm PLOTTED BY: THOMES



LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 18, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

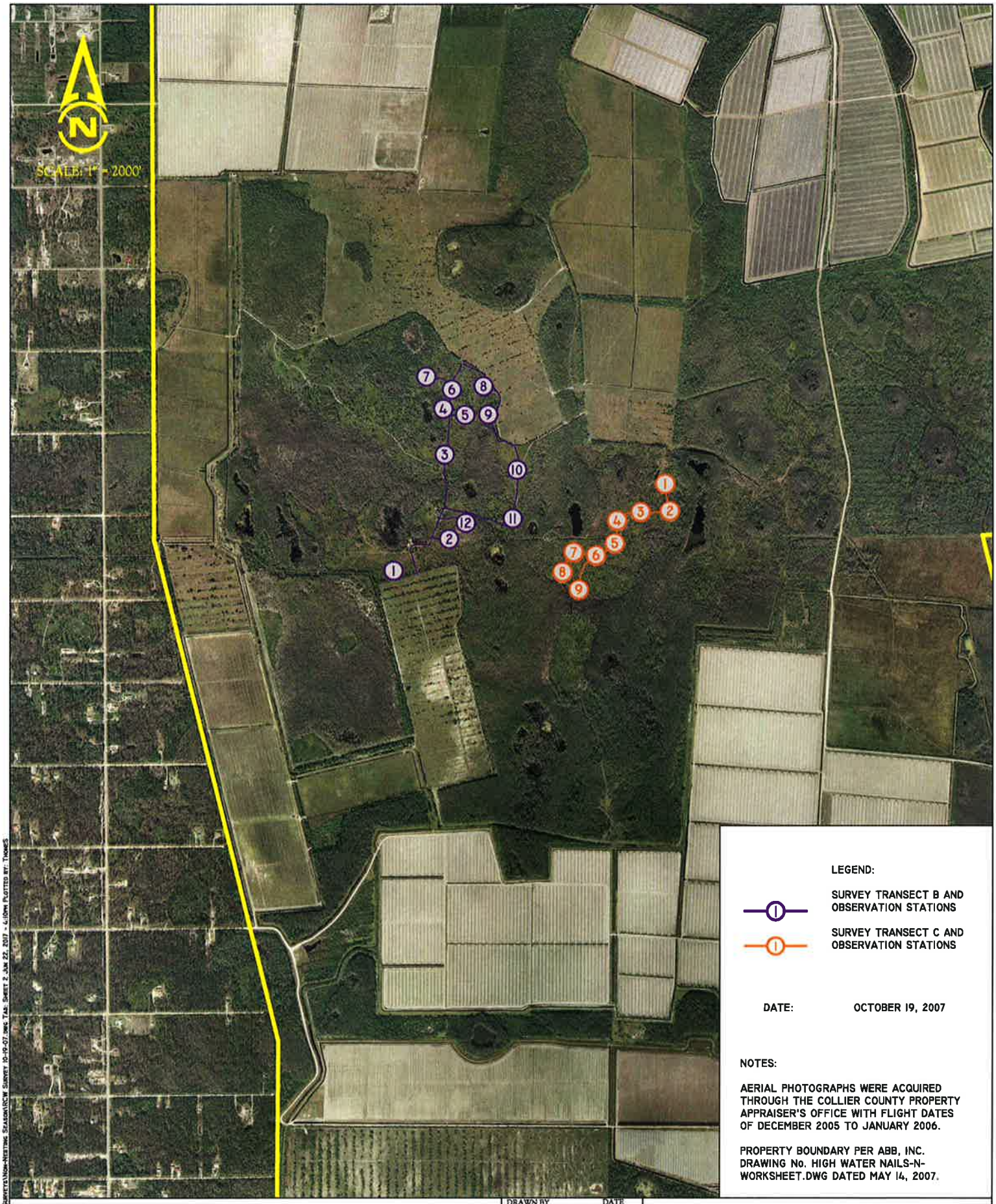
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cmi&s\RCW Surveys\Non-Nesting Season\RCW Survey 10-18-07.dwg Tab: Sheet 4, Jun 22, 2017 - 4:08pm Plotted By: Thomas

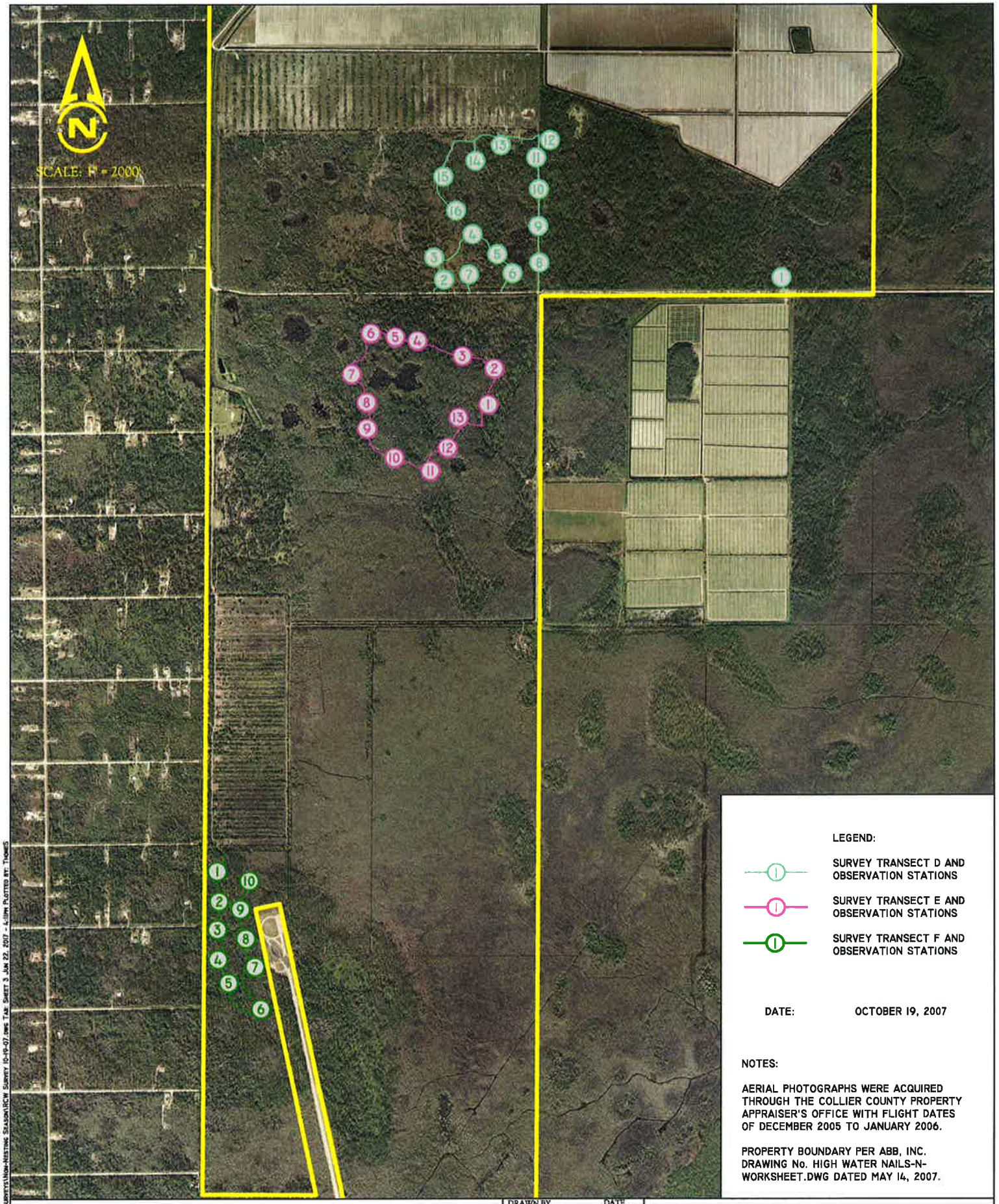


RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

J:\2005\05cem\ab1\RCW Surveys\Non-Nesting Season\RCW Survey 10-19-07.dwg Tab: Sheet 2 Jun 22, 2017 - 4:10pm Plotted By: Thomas



DATE: OCTOBER 19, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

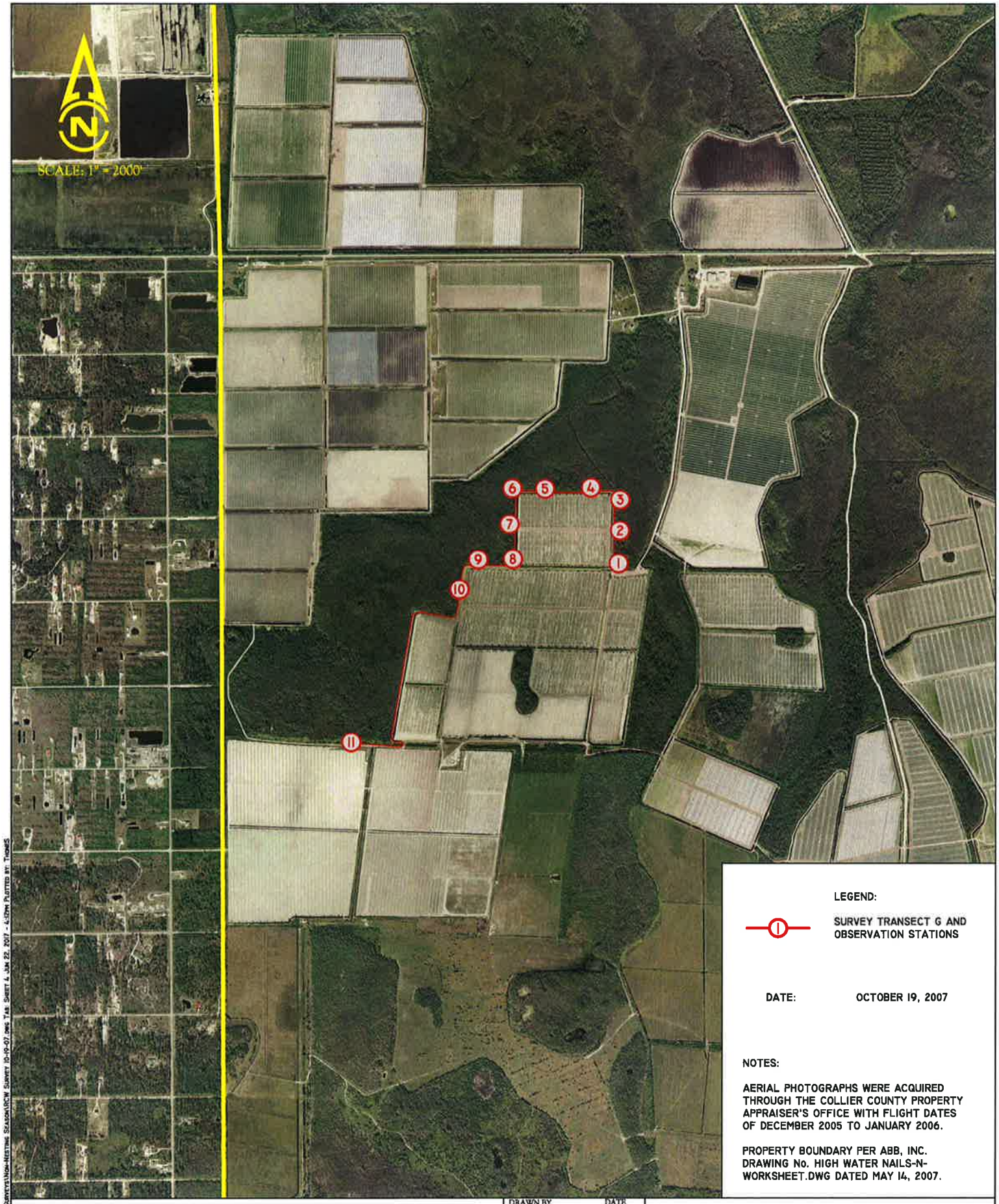
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CSN\GIS\RCW Surveys\NON-NESTING SEASON\RCW Survey 10-19-07.dwg TAB: Sheet 3 JAN 22, 2007 - 4:18PM PLOTTED BY: THOMES



LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 19, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

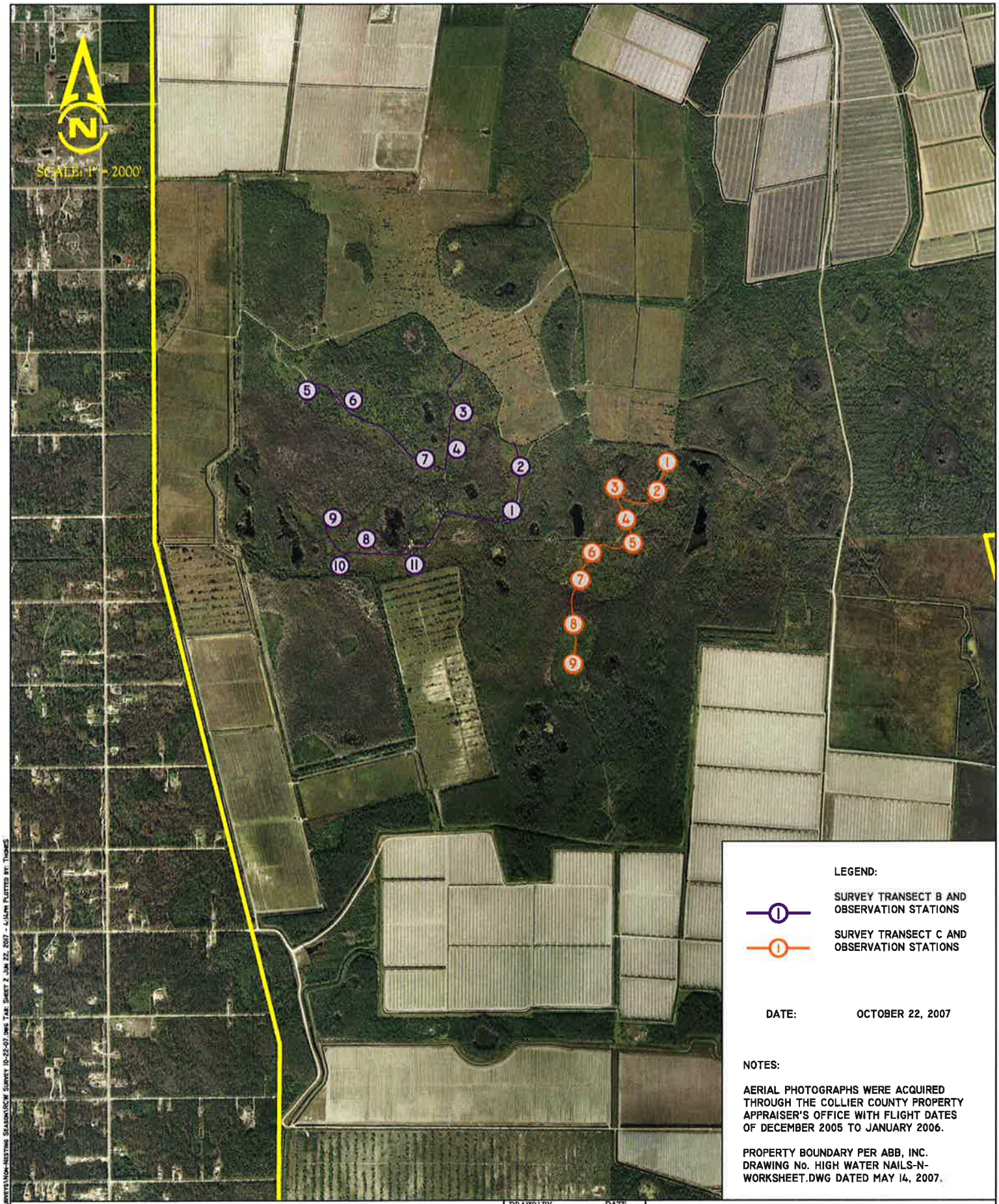
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen\all\ROW Surveys\Non-Nesting Season\ROW Survey 10-19-07.dwg Tab: Sheet 4, Jun 22, 2017 - 4:02pm Plotted By: Thomes

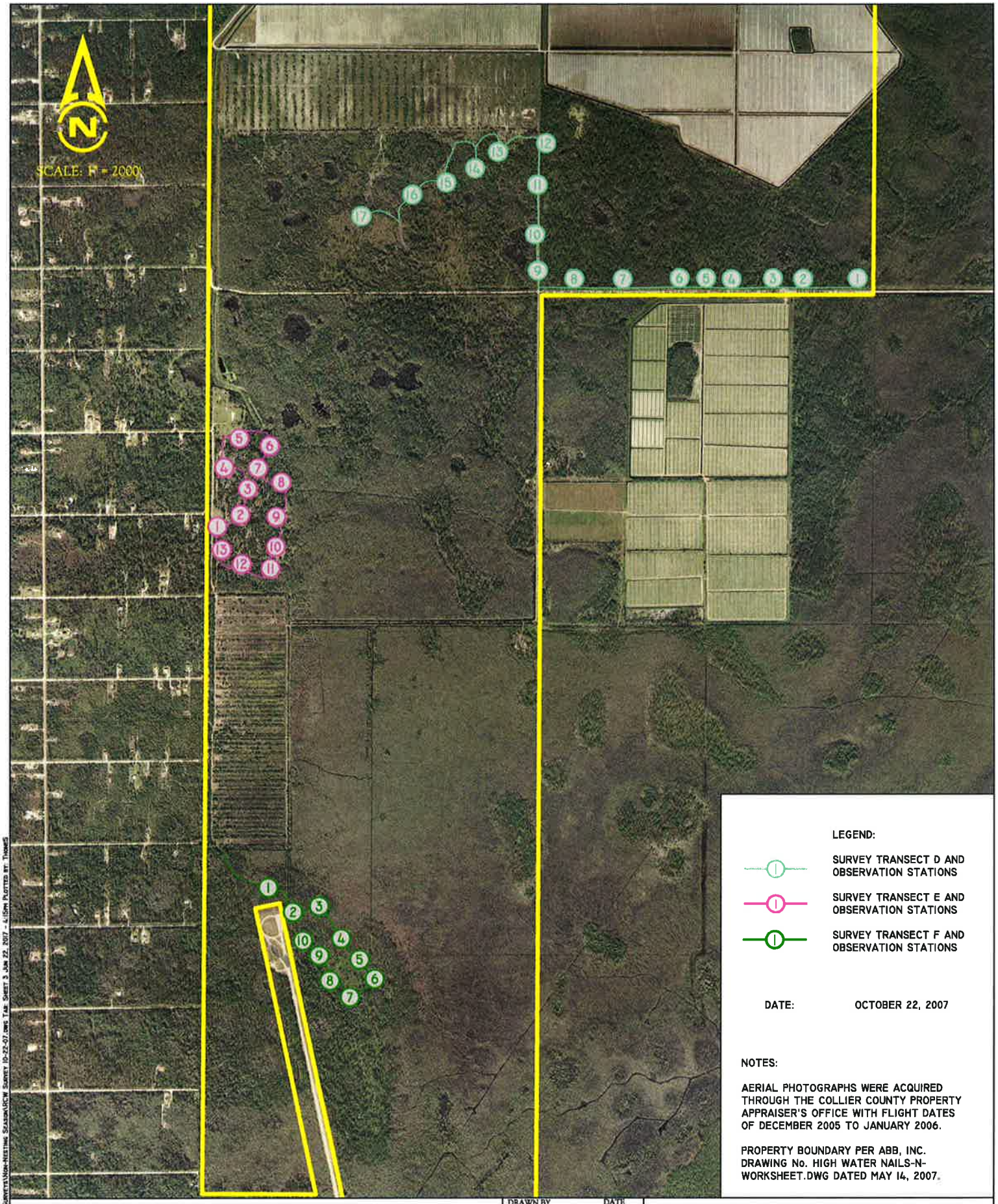


J:\2005\05csm\Main\RCW Surveys\Non-Nesting Season\RCW Survey 10-22-07.dwg Tab: Sheet 2 Jun 22, 2007 - 4:14pm Plotted by: Thomes

RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC



RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN\61\RCW Surveys\Non-Nesting Season\RCW Survey 10-22-07.dwg Tab: Sheet 3 Jan 22, 2007 - 4:15pm Plotted by: Thomas

LEGEND:

1 SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 22, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

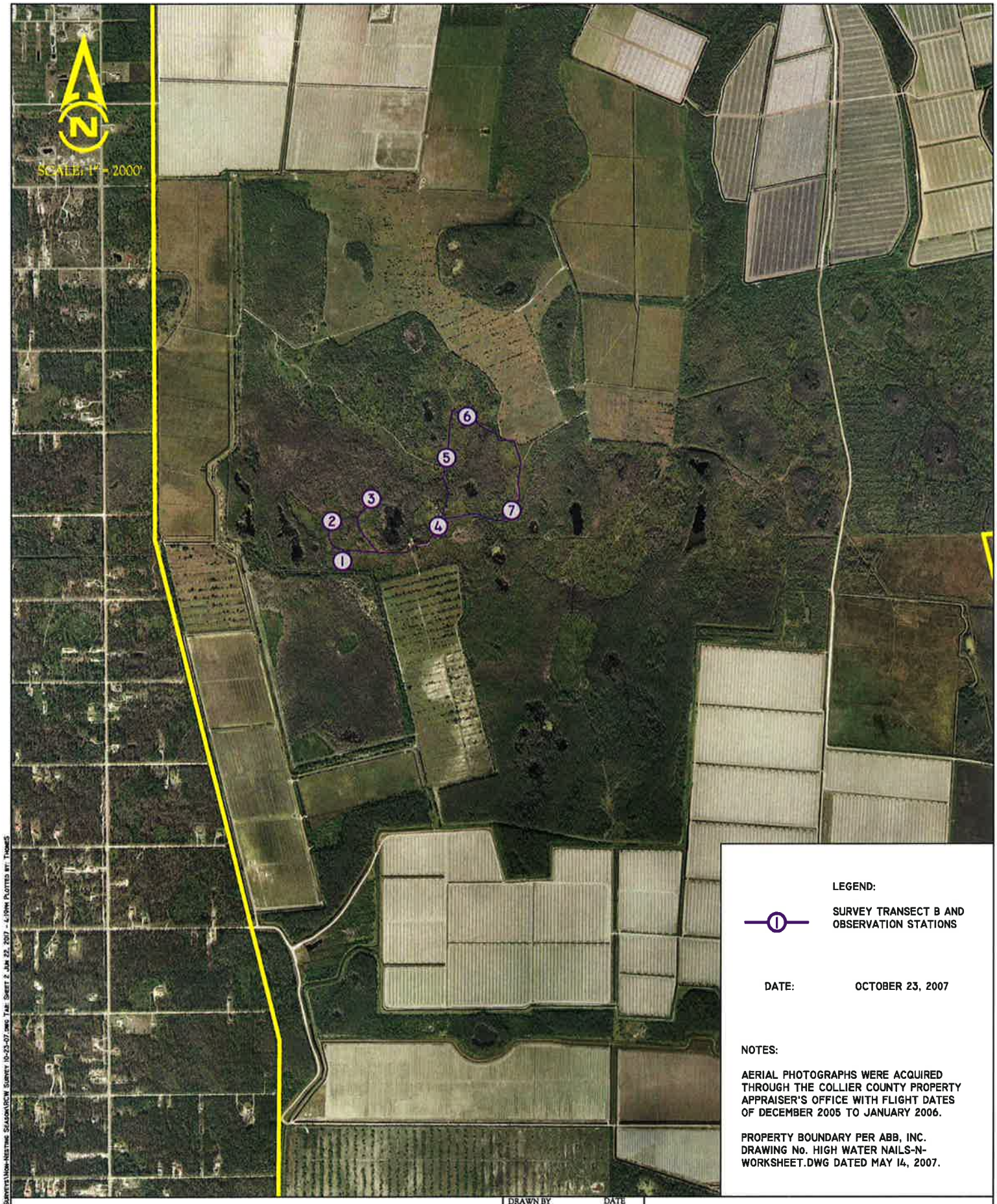
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

J:\2005\05-029\GIS\RCW Surveys\Non-Nesting Season\RCW Survey 10-22-07.dwg Tab: Sheet 4, Jan 23, 2007 - 4:17pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

DATE: OCTOBER 23, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

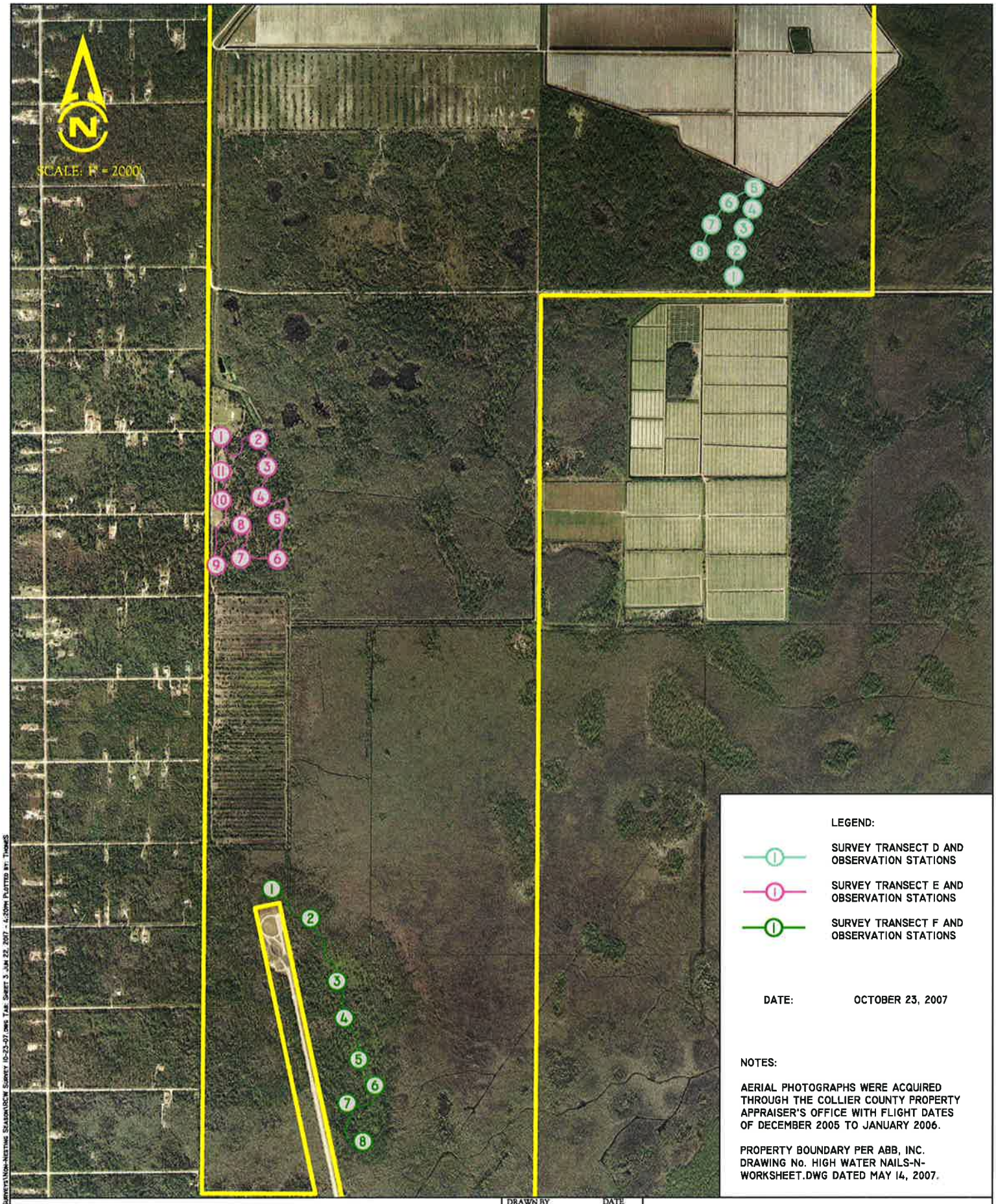
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen\arcw Surveys\Non-Nesting Season\arcw Survey 10-23-07.dwg Tab: Sheet 2 Jan 22, 2007 - 4:19pm Plotted by: Thomas



RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen\BIRDS\NON-NESTING SEASON\RCW Survey 10-23-07.dwg TAB: Sheet 3 JUN 22, 2007 - 4:20PM PLOTTED BY: THOMAS

LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 23, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

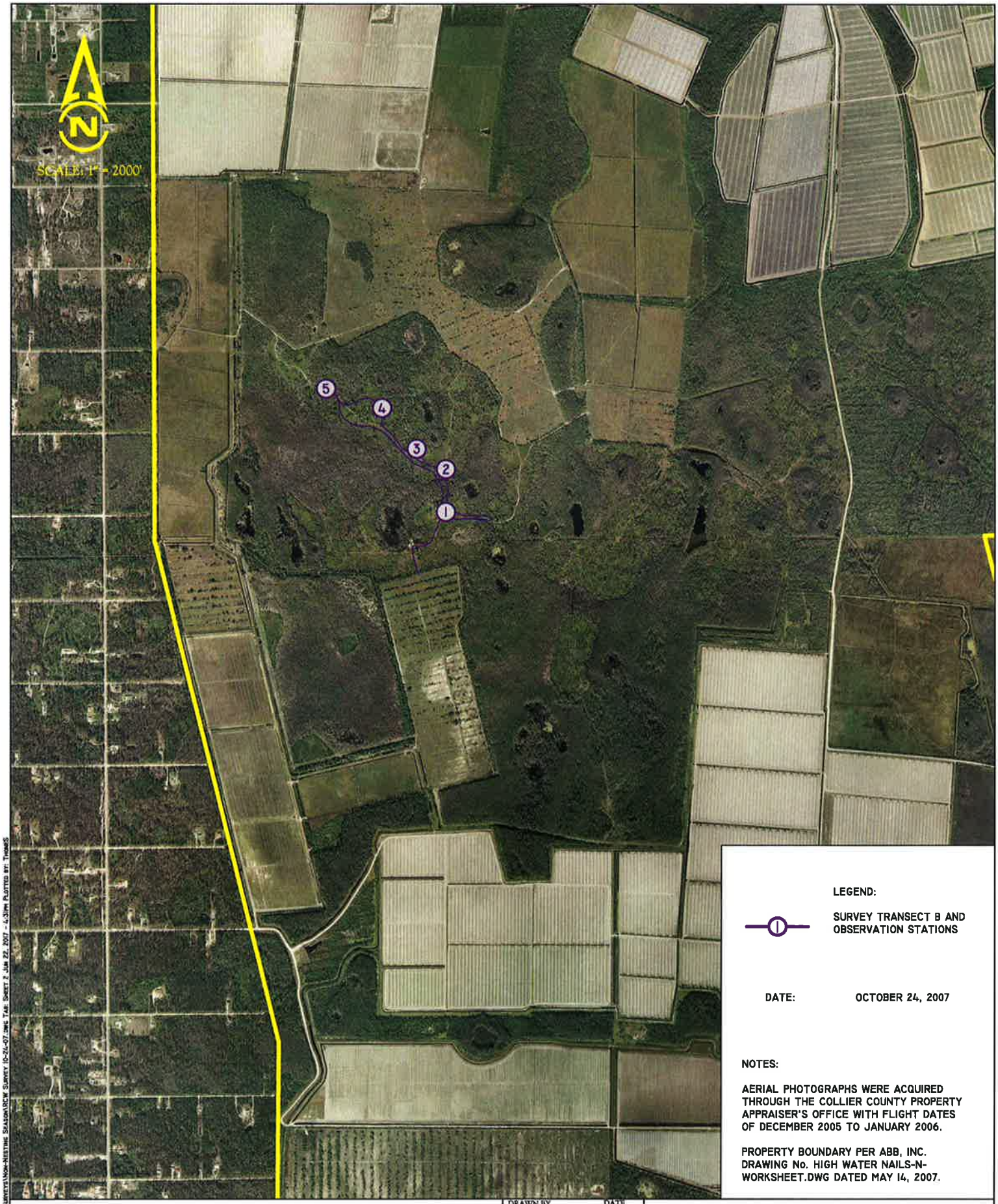
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists

J:\2005\05CEN\GIS\RCW SURVEYS\NON-NESTING SEASON\RCW SURVEY 10-23-07.DWG TAB: SHEET 4, JAN 22, 2007 - 4:21PM PLOTTED BY: THOMES



LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

DATE: OCTOBER 24, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

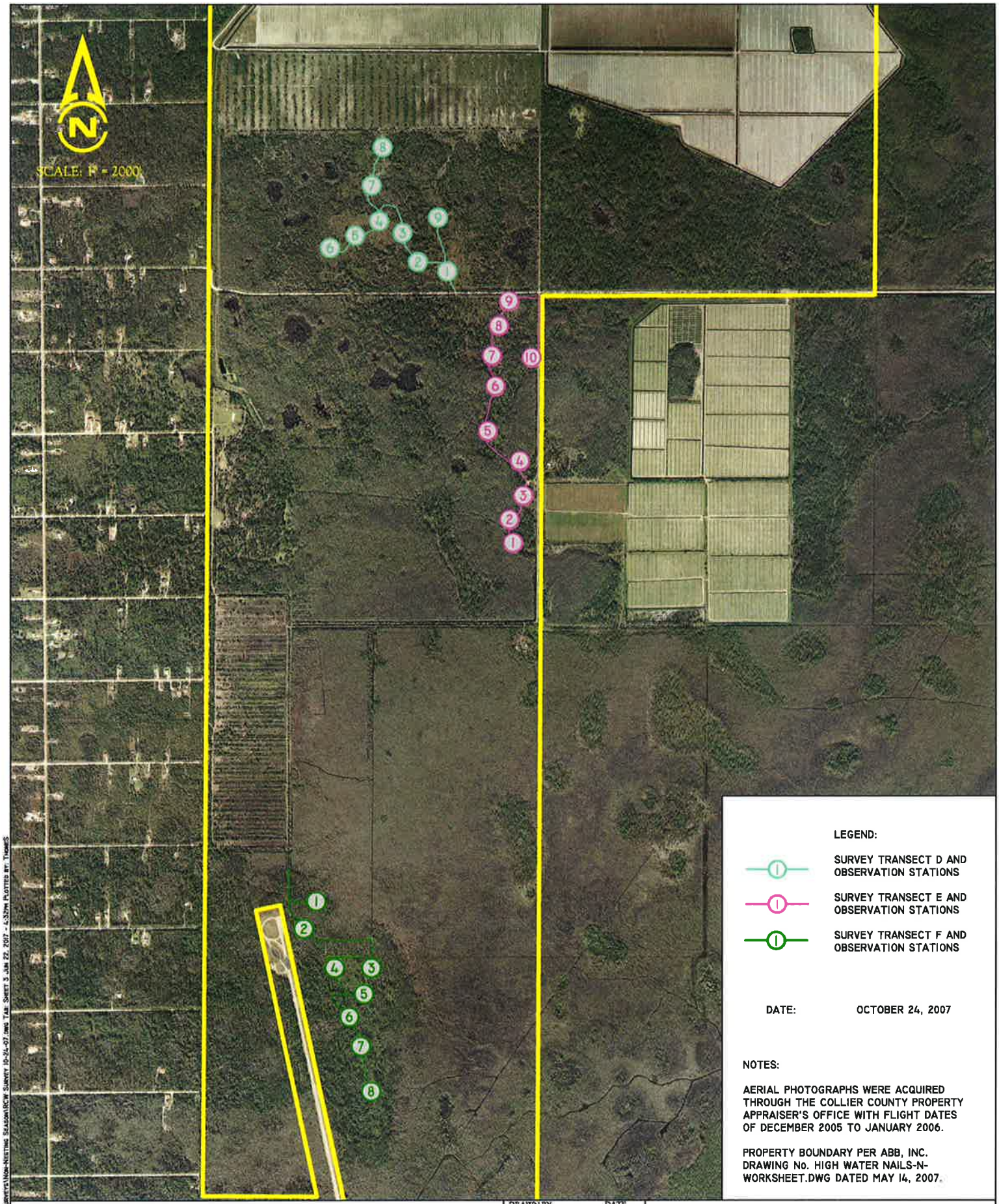
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpn\gis\BIG\RCW Surveys\Non-Nesting Season\RCW Survey 10-24-07.mxd TAB: Sheet 2 Jan 22, 2007 - 4:31pm Plotted by: Thomas



RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

J:\2005\05-03\MISC\RCW Surveys\Non-Nesting Season\RCW Survey 10-24-07.dwg TAB: Sheet 3 Jan 22, 2007 - 4:32pm Plotted By: Thomas

LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 24, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

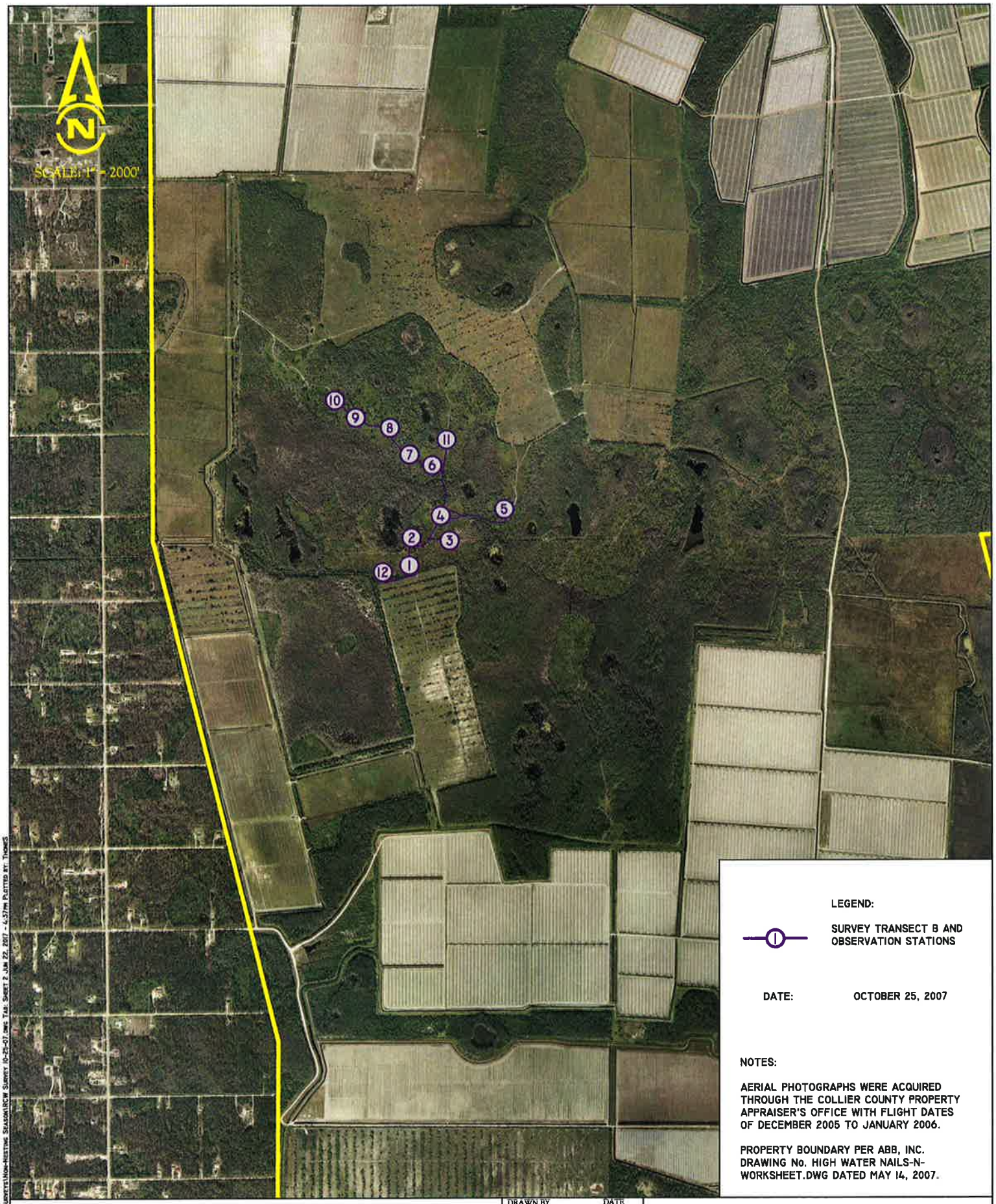
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\105cen\GIS\RCW Surveys\Non-Nesting Season\RCW Survey 10-24-07.mxd Tab: Sheet 4 JUN 22, 2007 - 4:33PM Plotted By: Thomas



LEGEND:

SURVEY TRANSECT B AND OBSERVATION STATIONS

DATE: OCTOBER 25, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

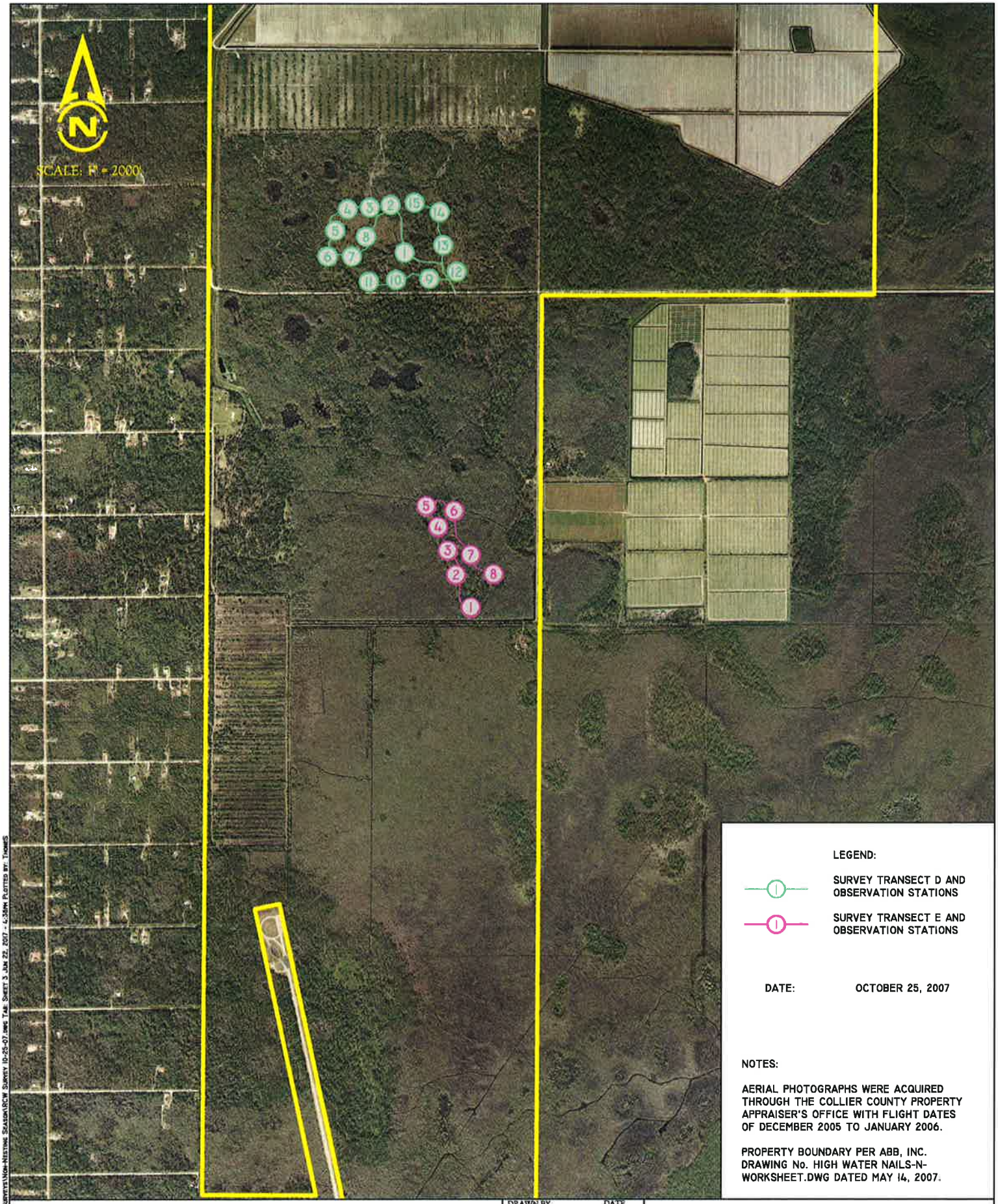
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY: F.L.	DATE: 1/3/08
REVIEWED BY: C.G.R.	DATE: 1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CSHA&B\RCW Surveys\Non-Nesting Season\RCW Survey 10-25-07.dwg Tab: Sheet 2 Jan 22, 2007 - 4:37pm Plotted by: Thomas



LEGEND:

SURVEY TRANSECT D AND OBSERVATION STATIONS

SURVEY TRANSECT E AND OBSERVATION STATIONS

DATE: OCTOBER 25, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN&B\RCW Surveys\Non-Nesting Season\RCW Survey 10-25-07.dwg Tab: Sheet 3 Jun 22, 2007 - 4:38PM Plotted by: THOMES

LEGEND:

1 SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 25, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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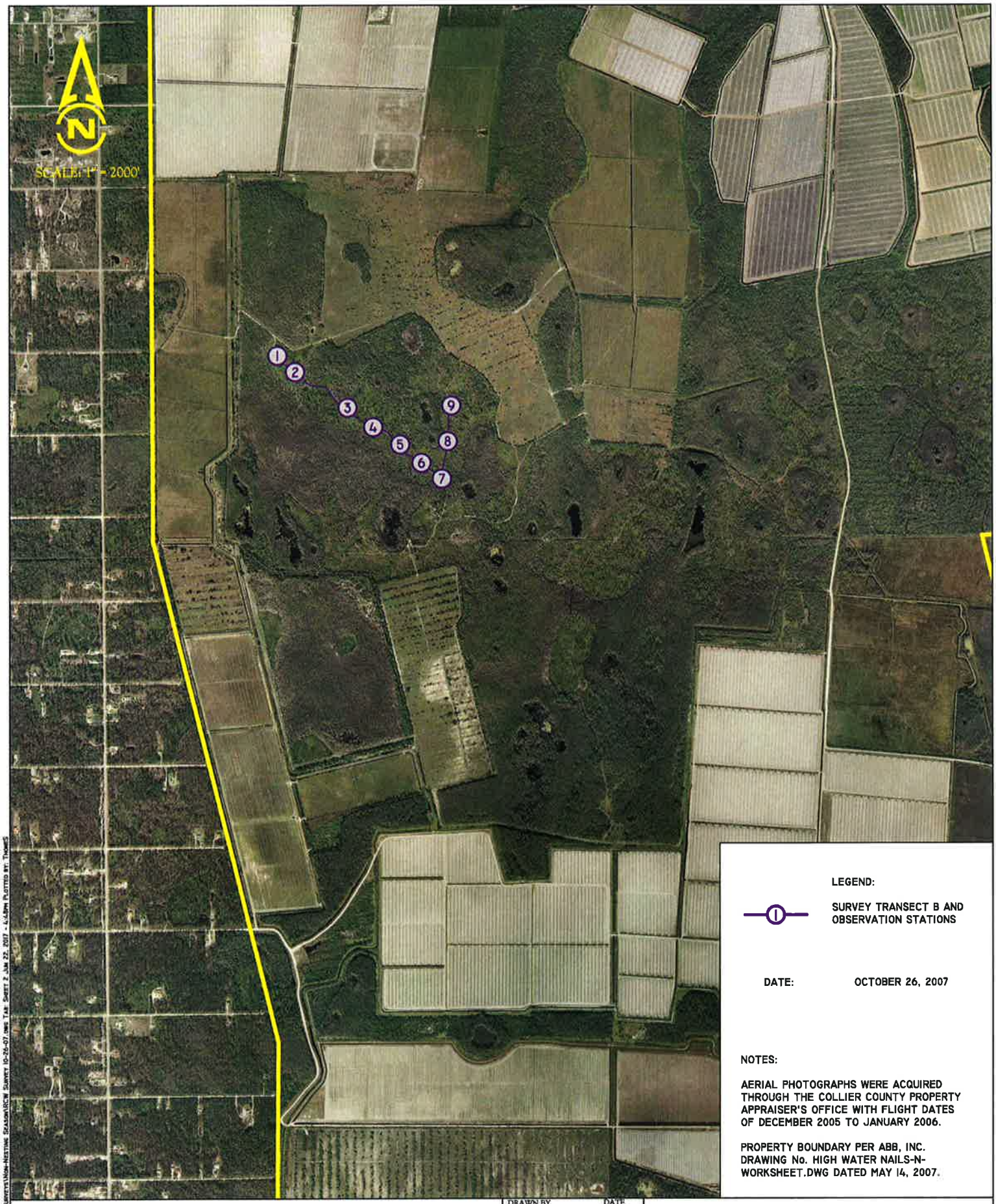


LEGEND:

1 SURVEY TRANSECT B AND OBSERVATION STATIONS

DATE: OCTOBER 26, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

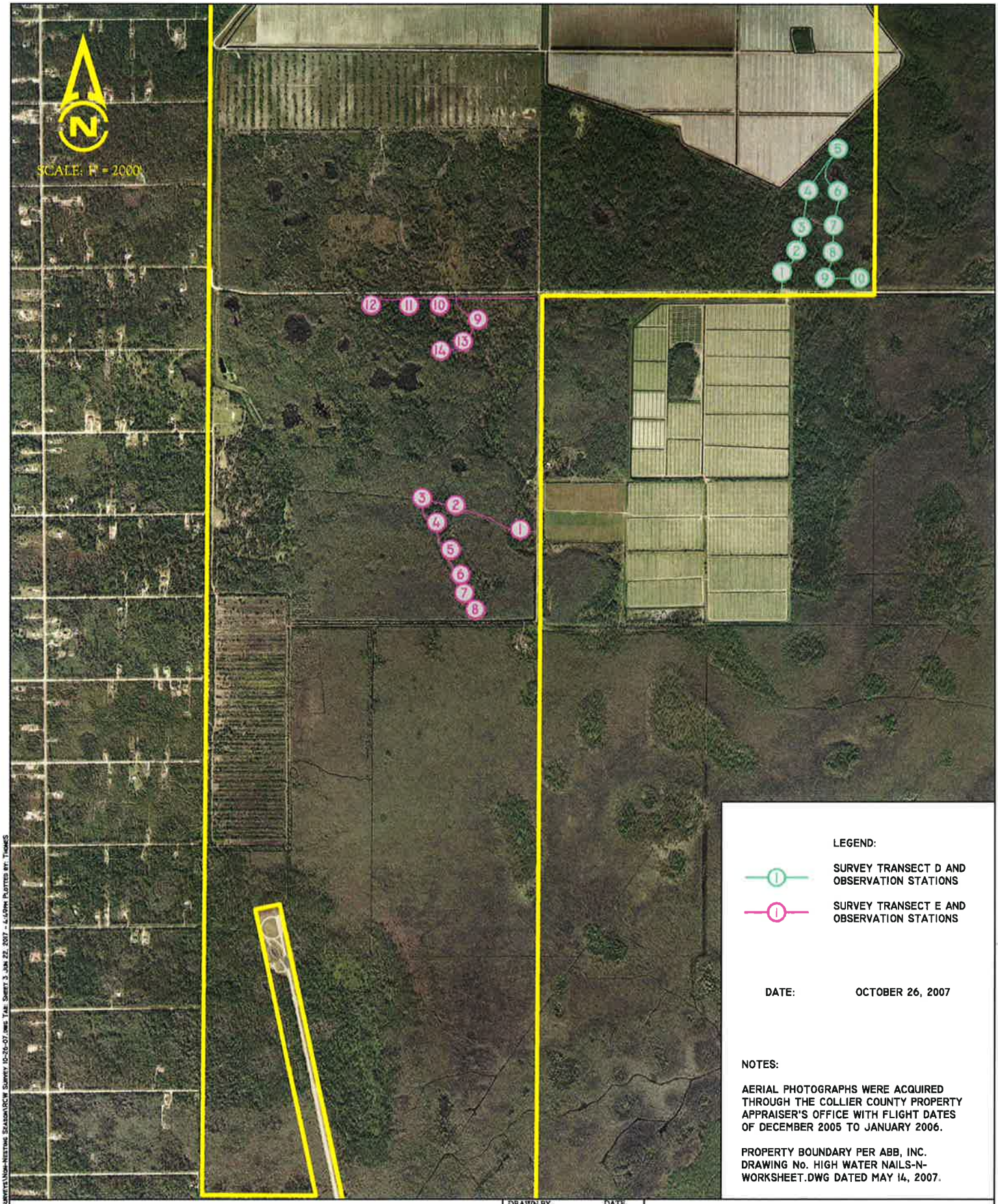
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cre\ai\RCW Surveys\Non-Nesting Season\RCW Survey 10-26-07.dwg T.M. Sheet 2 Jan 22, 2017 - 4:48pm Plotted by: Thomas

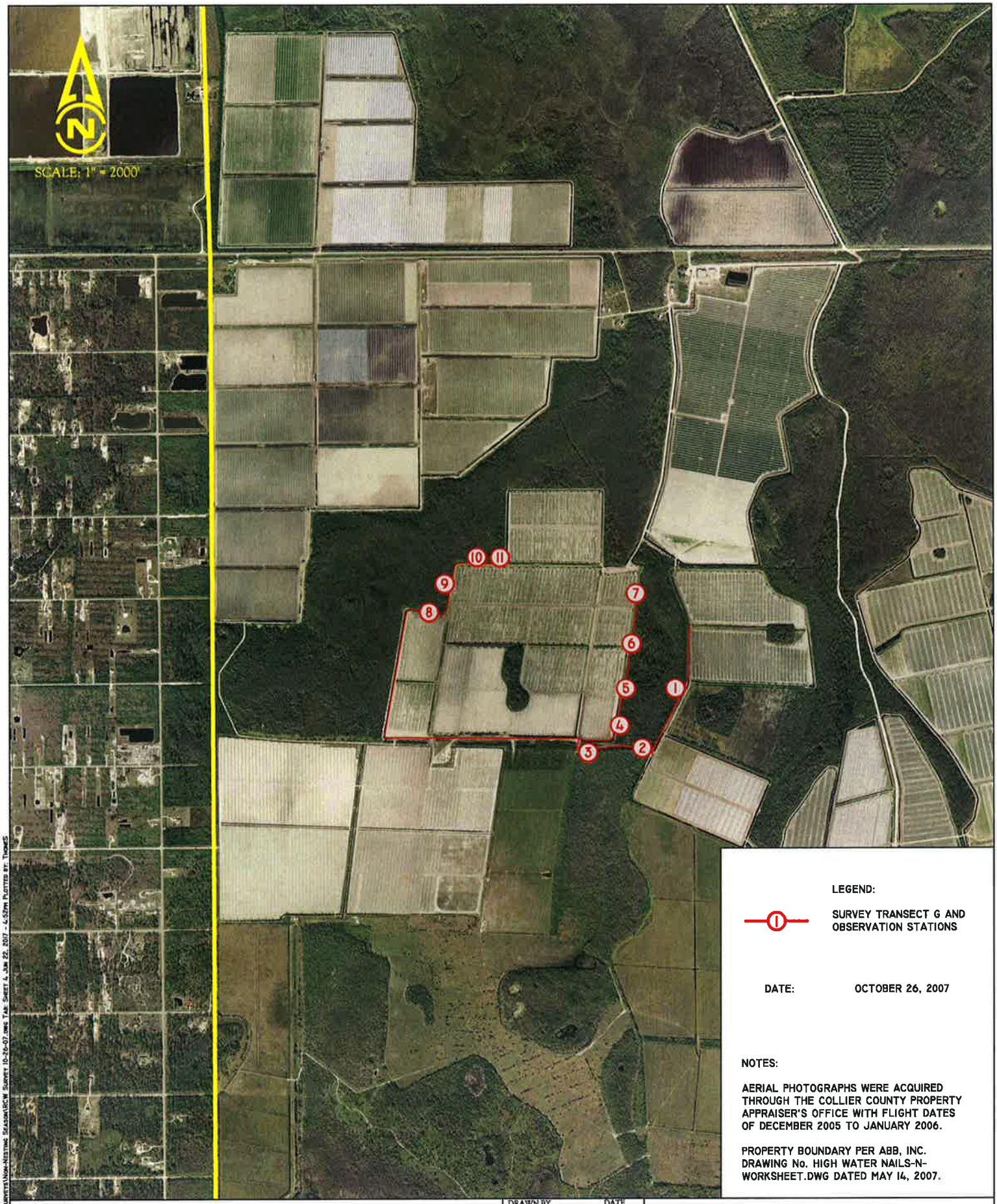


RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CENSUS\RCW Surveys\Non-Nesting Season\RCW Survey 10-26-07.dwg Tab: Sheet 3 Jun 22, 2017 - 4:49PM Plotted by: THOMAS



LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 26, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	F.L.	DATE	1/3/08
REVIEWED BY	C.G.R.	DATE	1/3/08
REVISED		DATE	

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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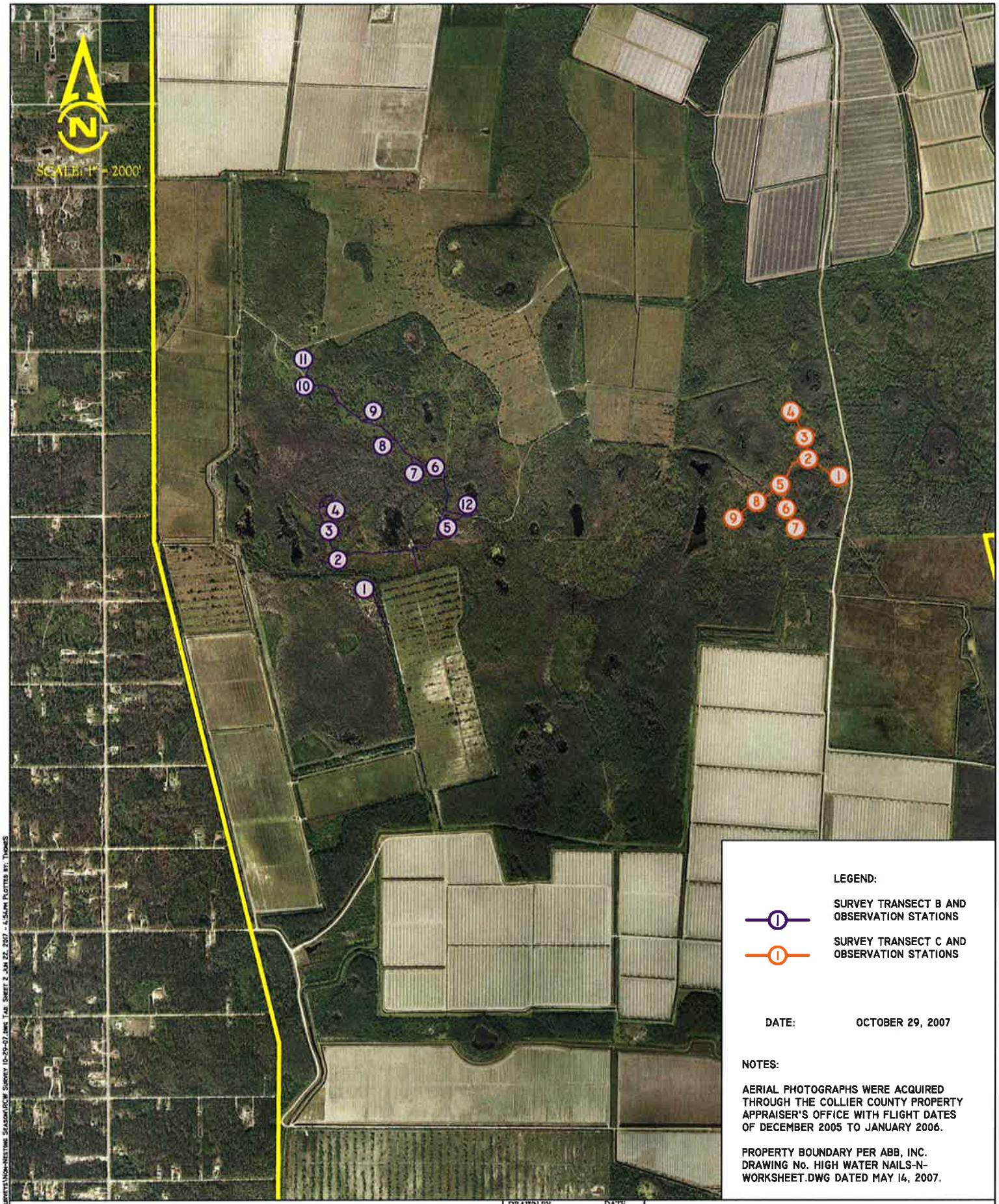

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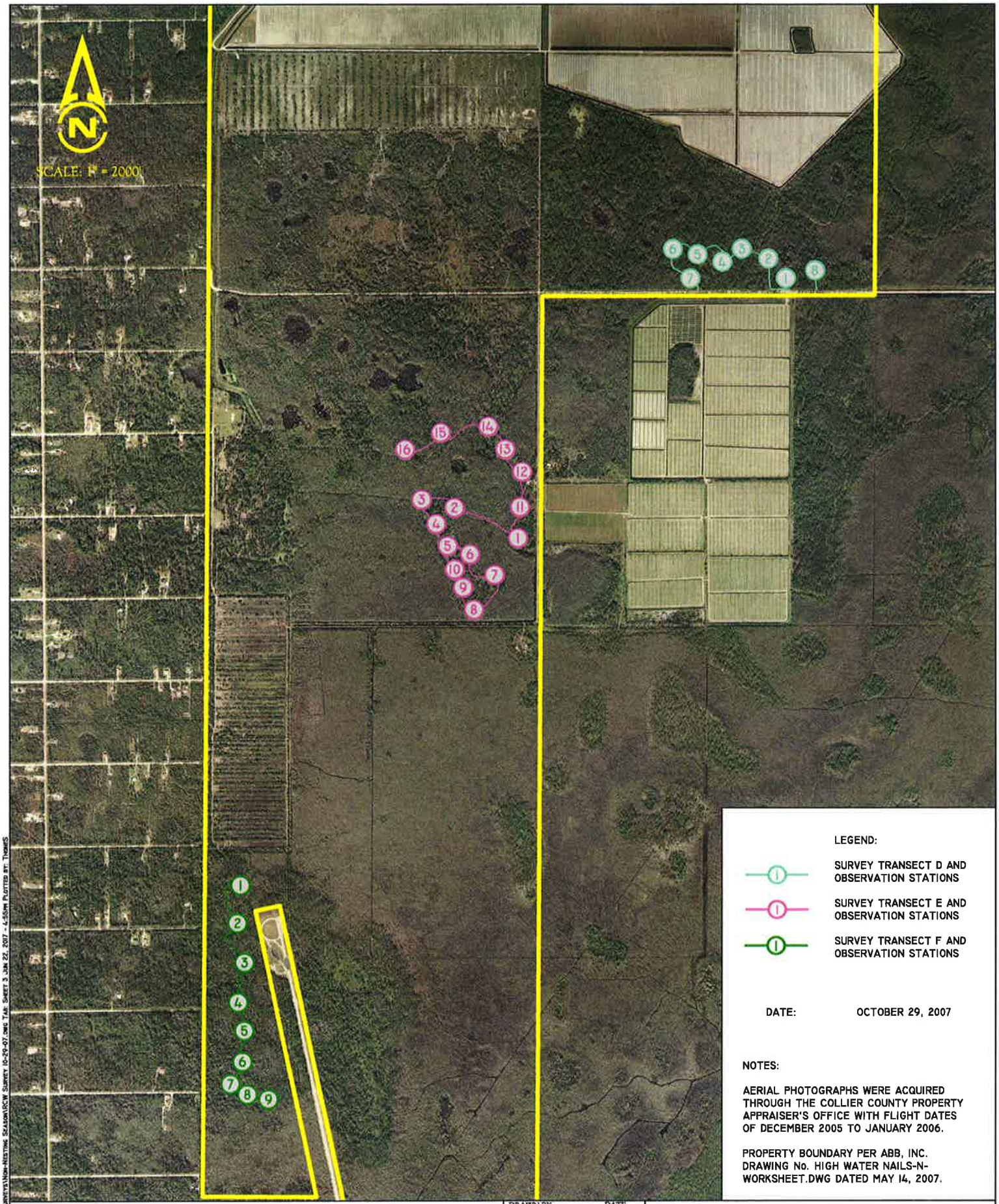
RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

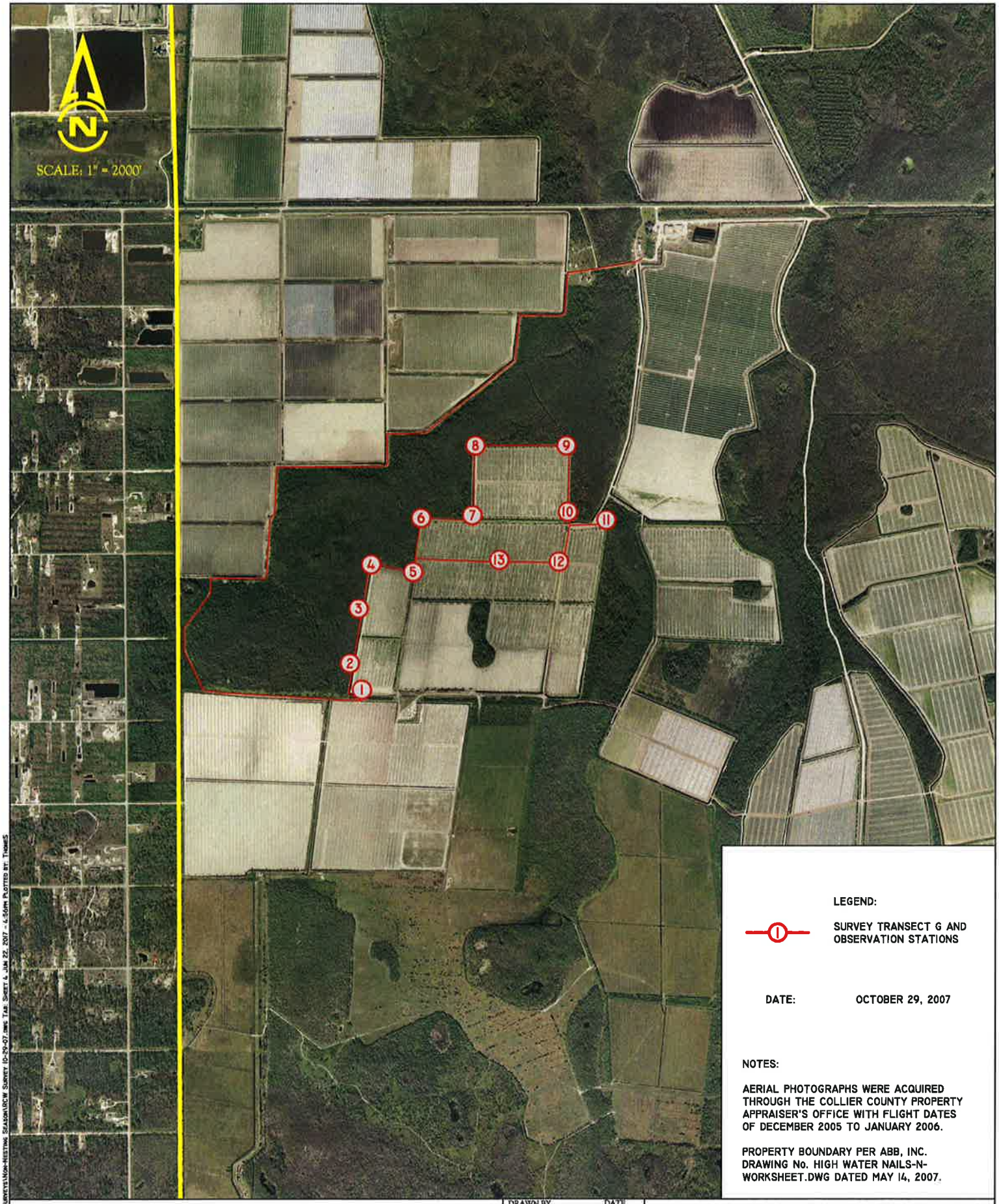


RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

J:\2005\05c0914\81\RCW Surveys\Non-Nesting Season\RCW Survey 10-29-07.dwg Tab: Sheet 3 JUN 22, 2017 - 4:55pm Plotted By: THomas



LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 29, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

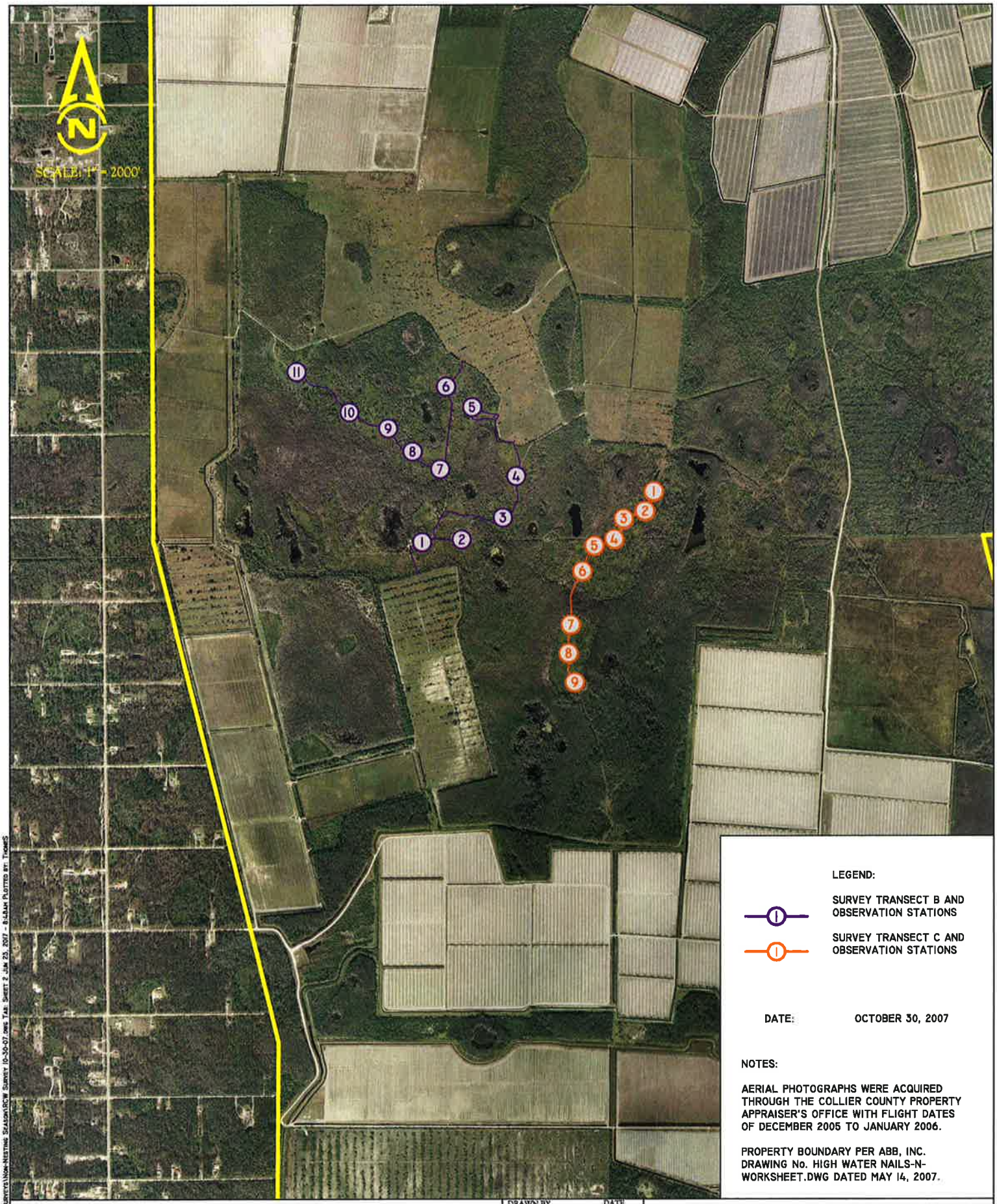
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen4a\81\dcw Surveys\Non-Nesting Season\dcw Survey 10-29-07.dwg Tab: Sheet 4 JAN 22, 2007 - 4:56pm Plotted By: THomas



RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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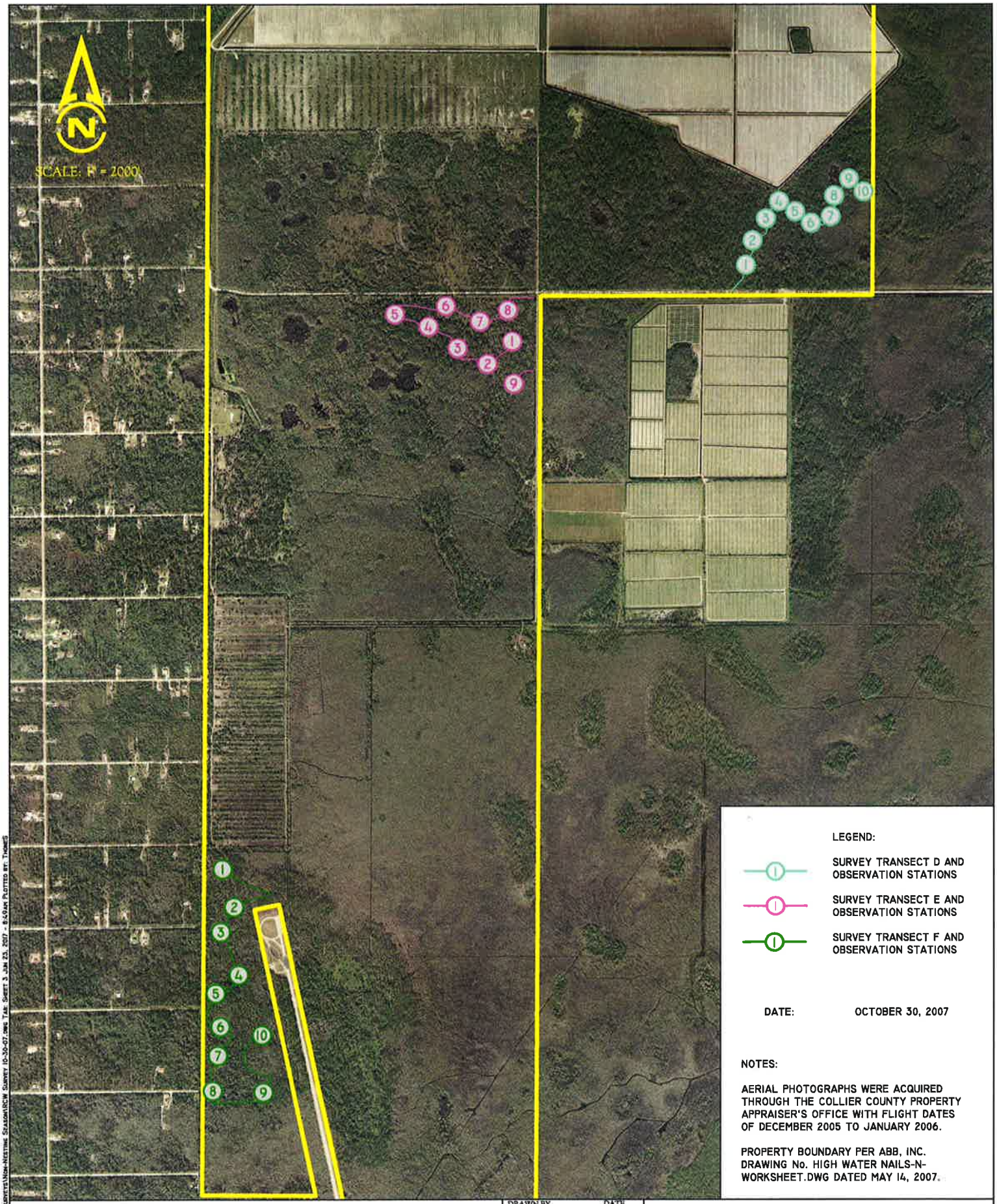

RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cphilbirdcw Surveys\Non-Nesting Season\RCW Survey 10-30-07.dwg Tab: Sheet 3 Jan 23, 2007 - 8:49am Plotted by: Thom5

LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 30, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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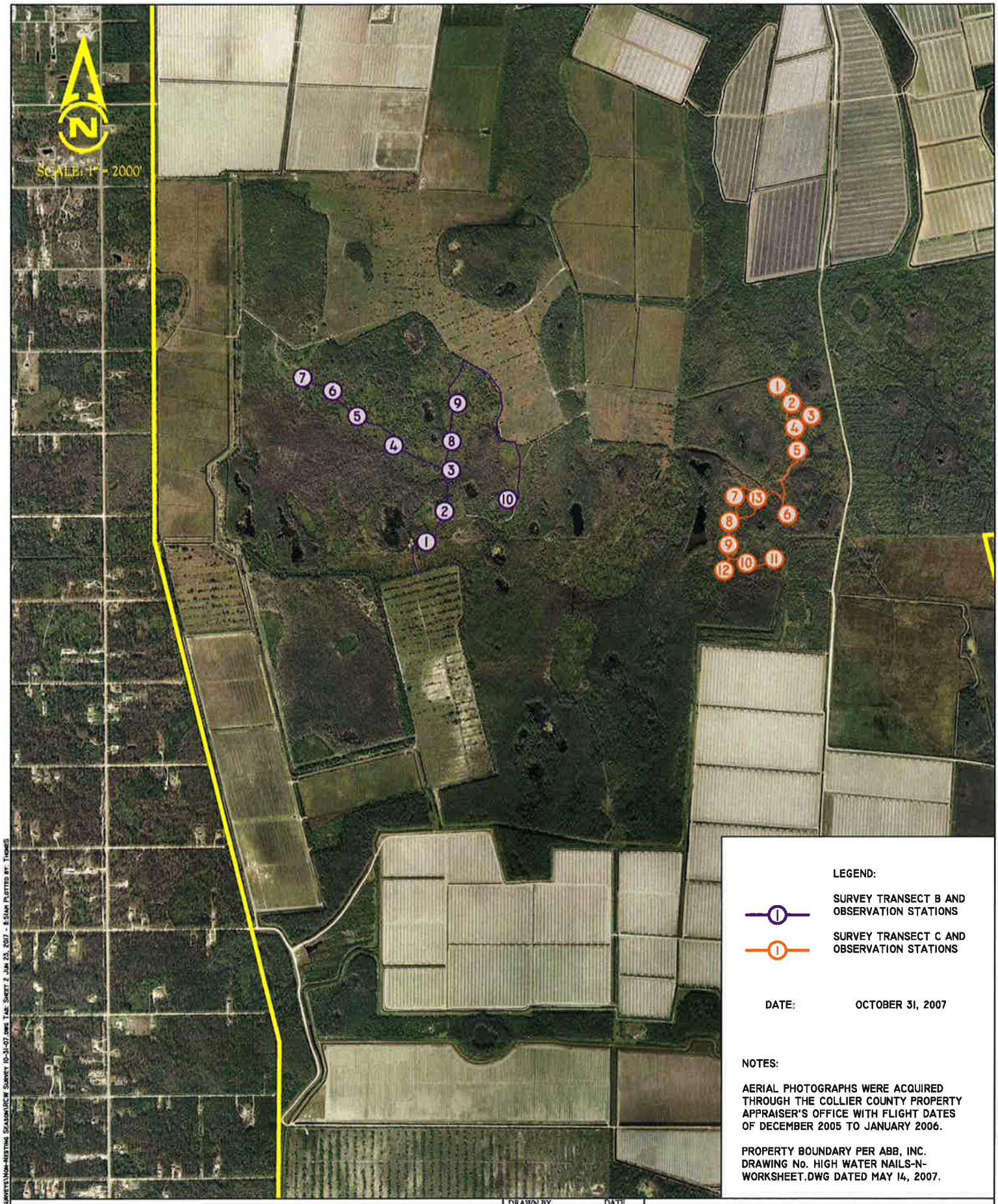

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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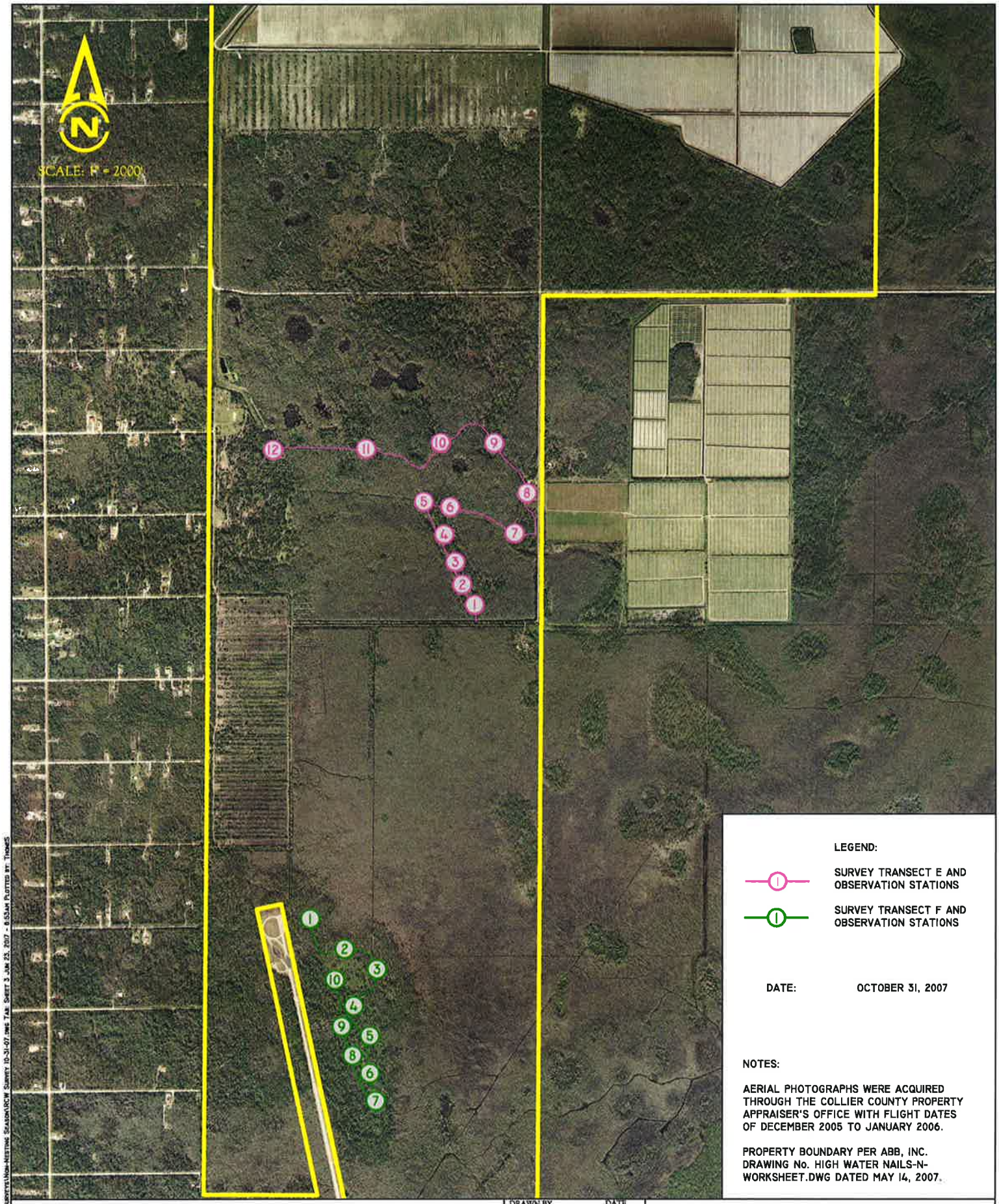

LEGEND:

SURVEY TRANSECT E AND OBSERVATION STATIONS

SURVEY TRANSECT F AND OBSERVATION STATIONS

DATE: OCTOBER 31, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05c2nd&3rd\RCW Surveys\Non-Nesting Season\RCW Survey 10-31-07.dwg Tab: Sheet 3 Jun 25, 2007 - 8:53am Plotted by: Thomes

LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: OCTOBER 31, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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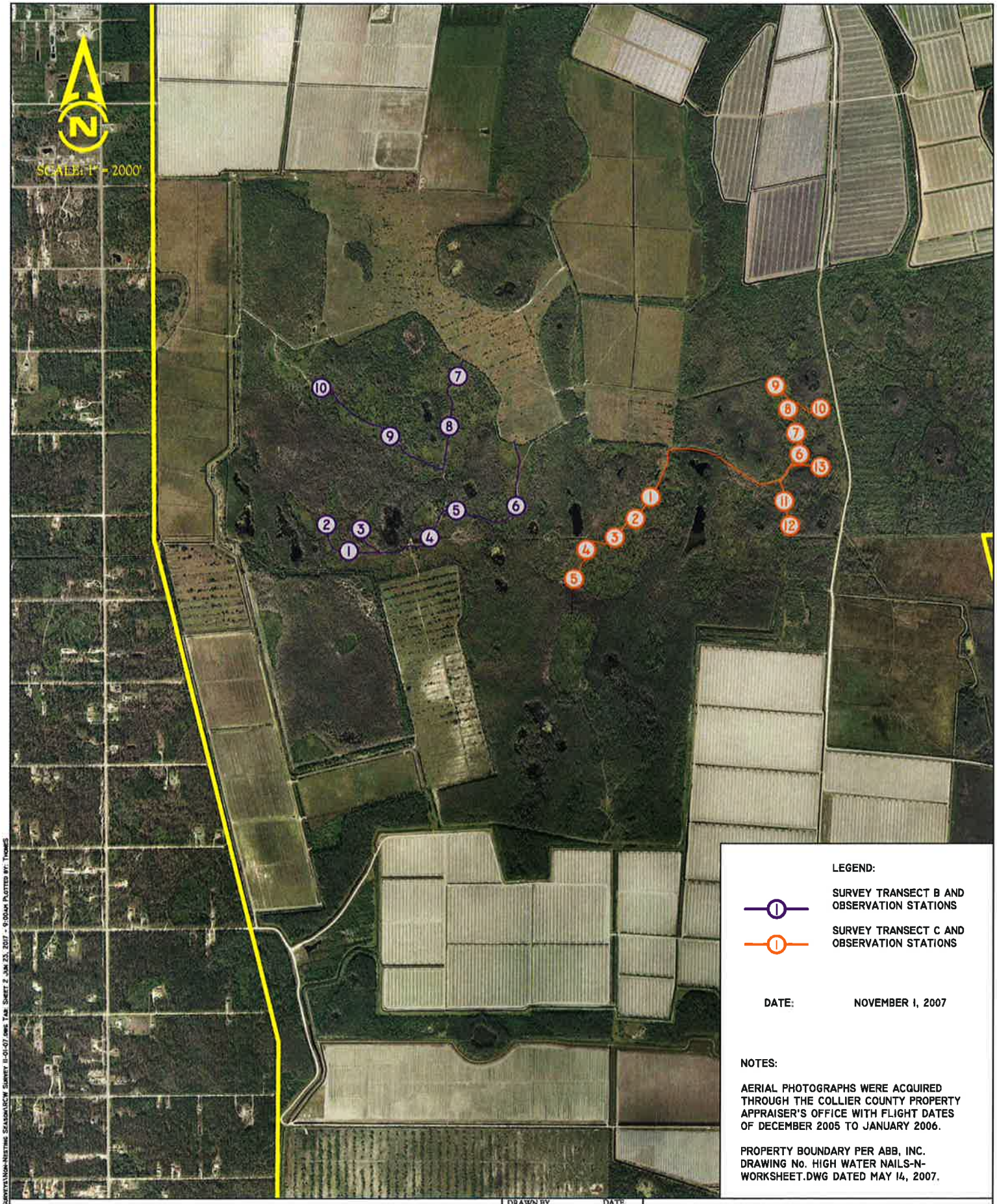

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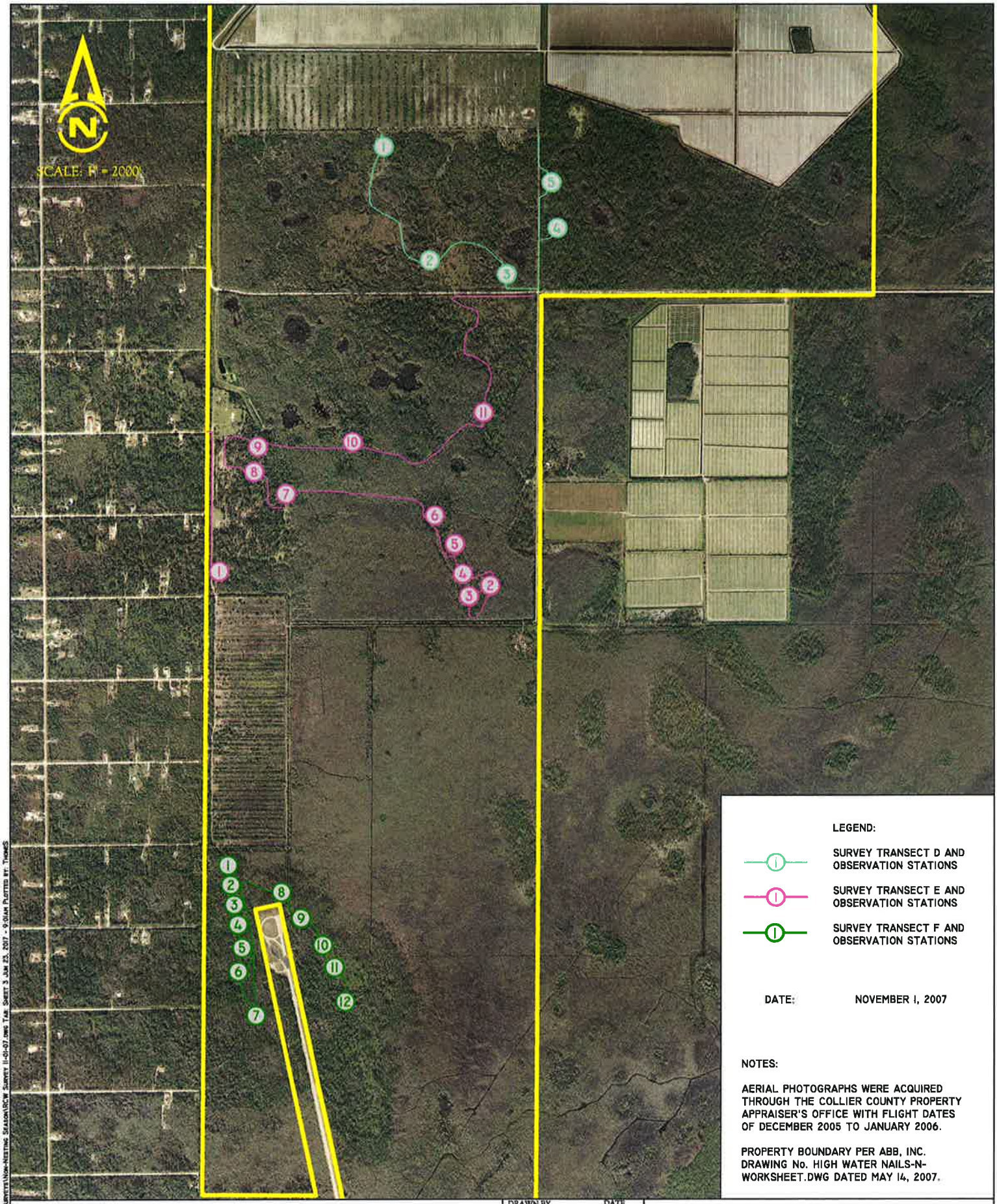
RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC



RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEN\GIS\RCW Surveys\Non-Nesting Season\RCW Survey 11-01-07.dwg Tab: Sheet 3 Jan 23, 2007 - 9:01am Plotted by: THOMES

LEGEND:

SURVEY TRANSECT G AND OBSERVATION STATIONS

DATE: NOVEMBER 1, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

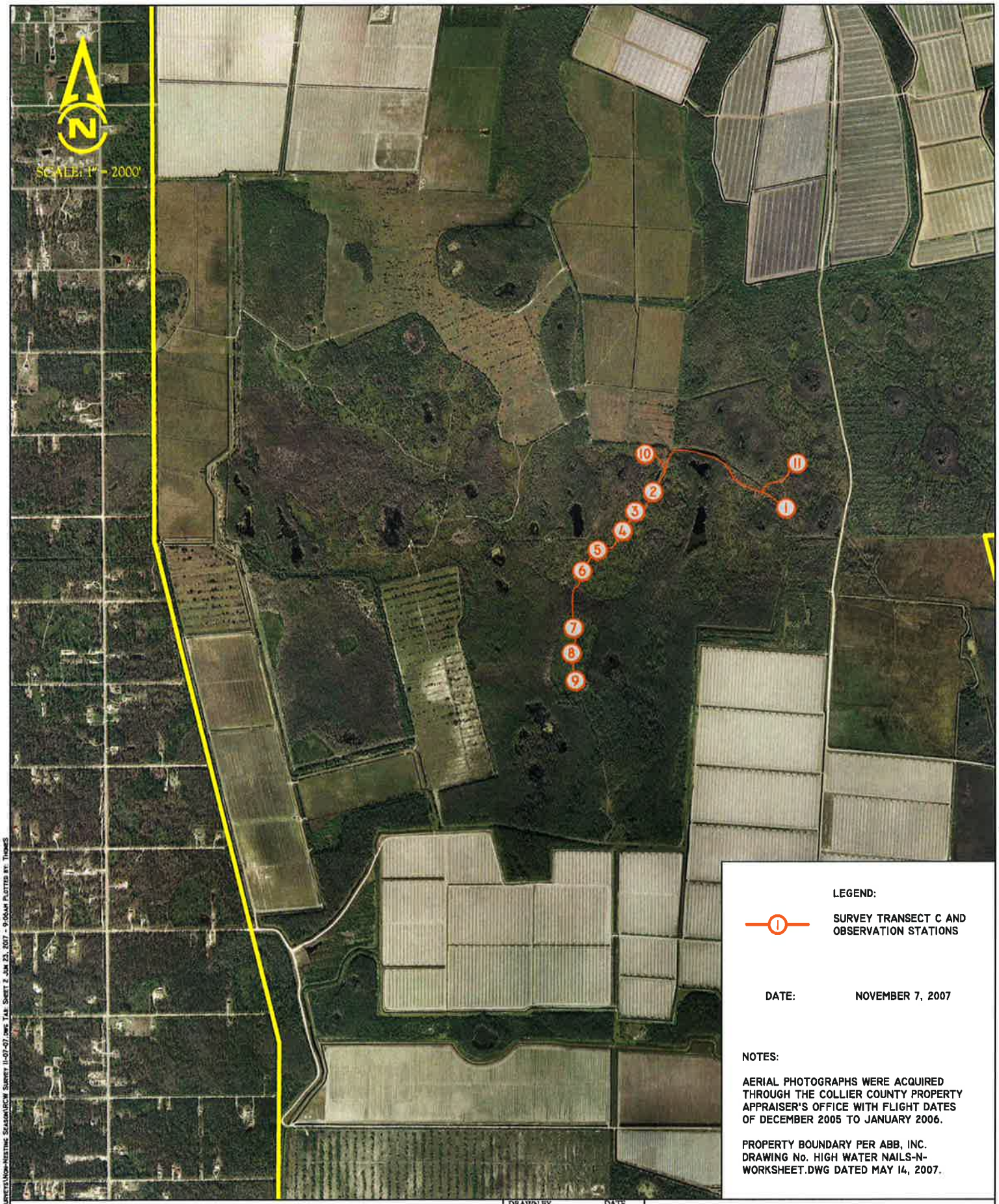
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CEHIL\BIG\RCW Surveys\Non-Nesting Season\RCW Survey 11-01-07.dwg Tab: Sheet 4, Jun 23, 2007 - 9:02am Plotted By: TWeiss



LEGEND:

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: NOVEMBER 7, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

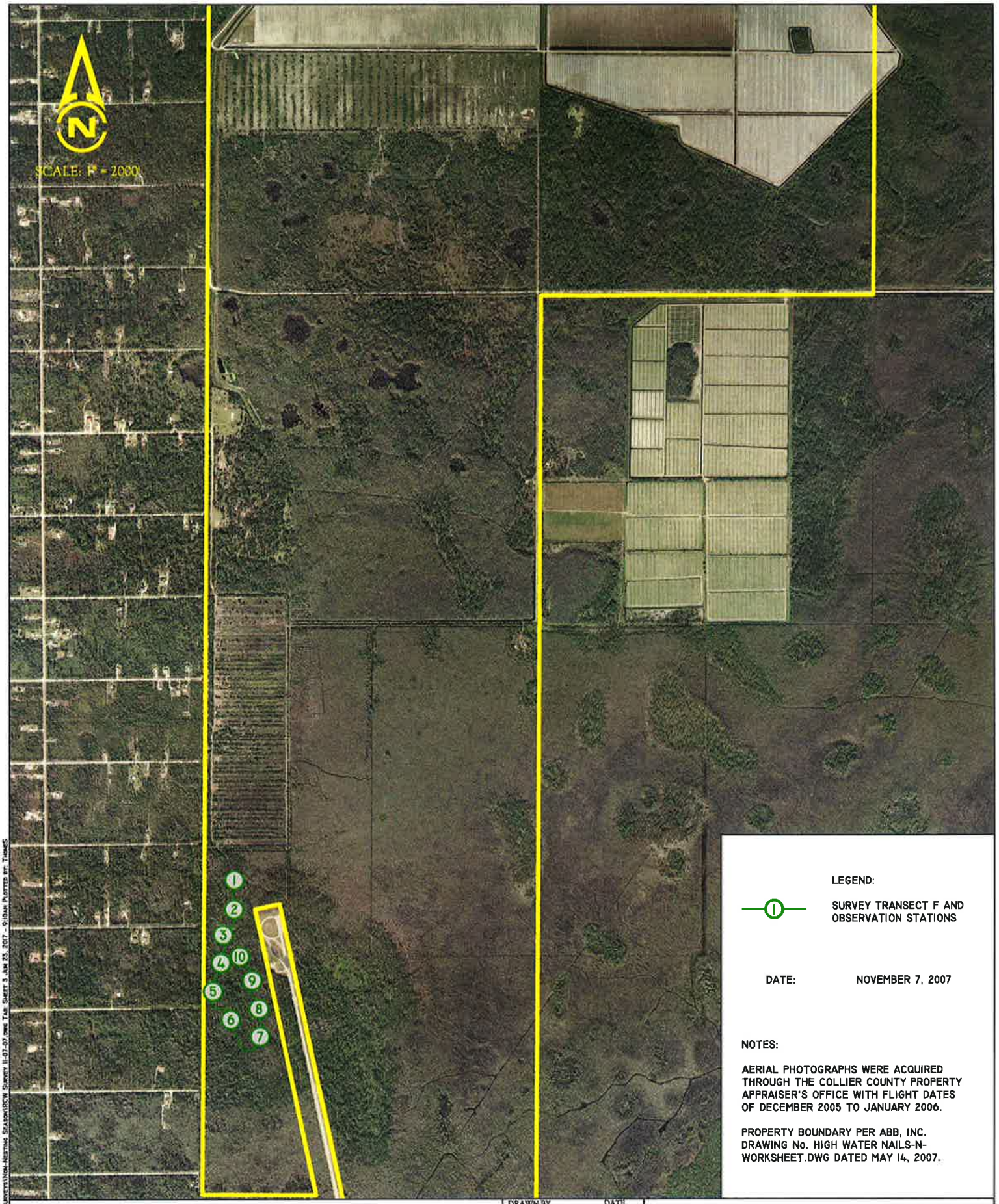
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\12005\105\CDR\MAR\RCW Surveys\Non-Nesting Season\RCW Survey 11-07-07.DWG TAB: Sheet 2 JUN 23, 2017 - 9:06AM PLOTTED BY: THOMAS



LEGEND:

SURVEY TRANSECT F AND OBSERVATION STATIONS

DATE: NOVEMBER 7, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

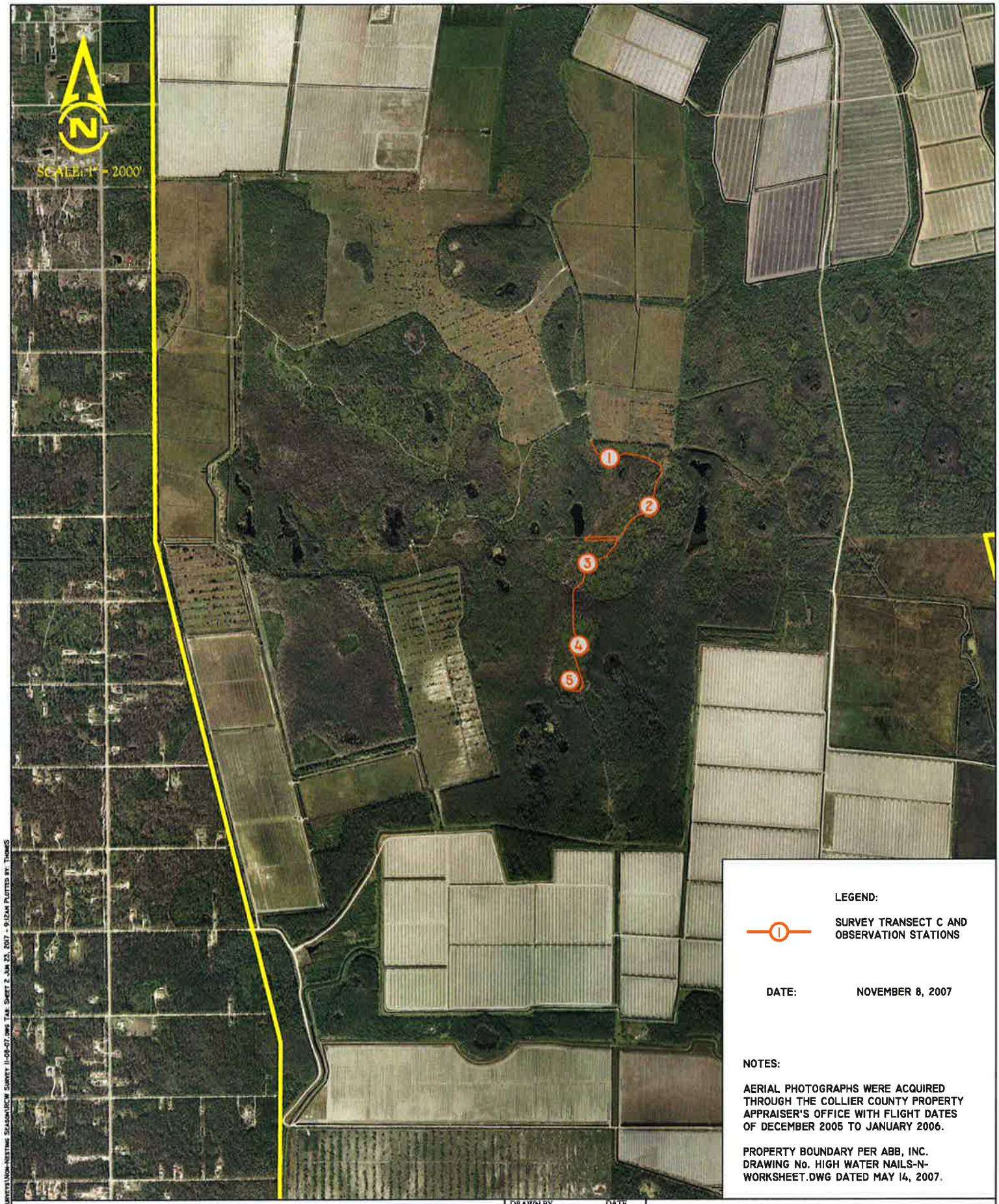
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05czm\ABIRCW Surveys\Non-Nesting Season\RCW Survey II-07.dwg Tab: Sheet 3 Jan 23, 2007 - 9:10am Plotted by: Thomas



LEGEND:

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: NOVEMBER 8, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

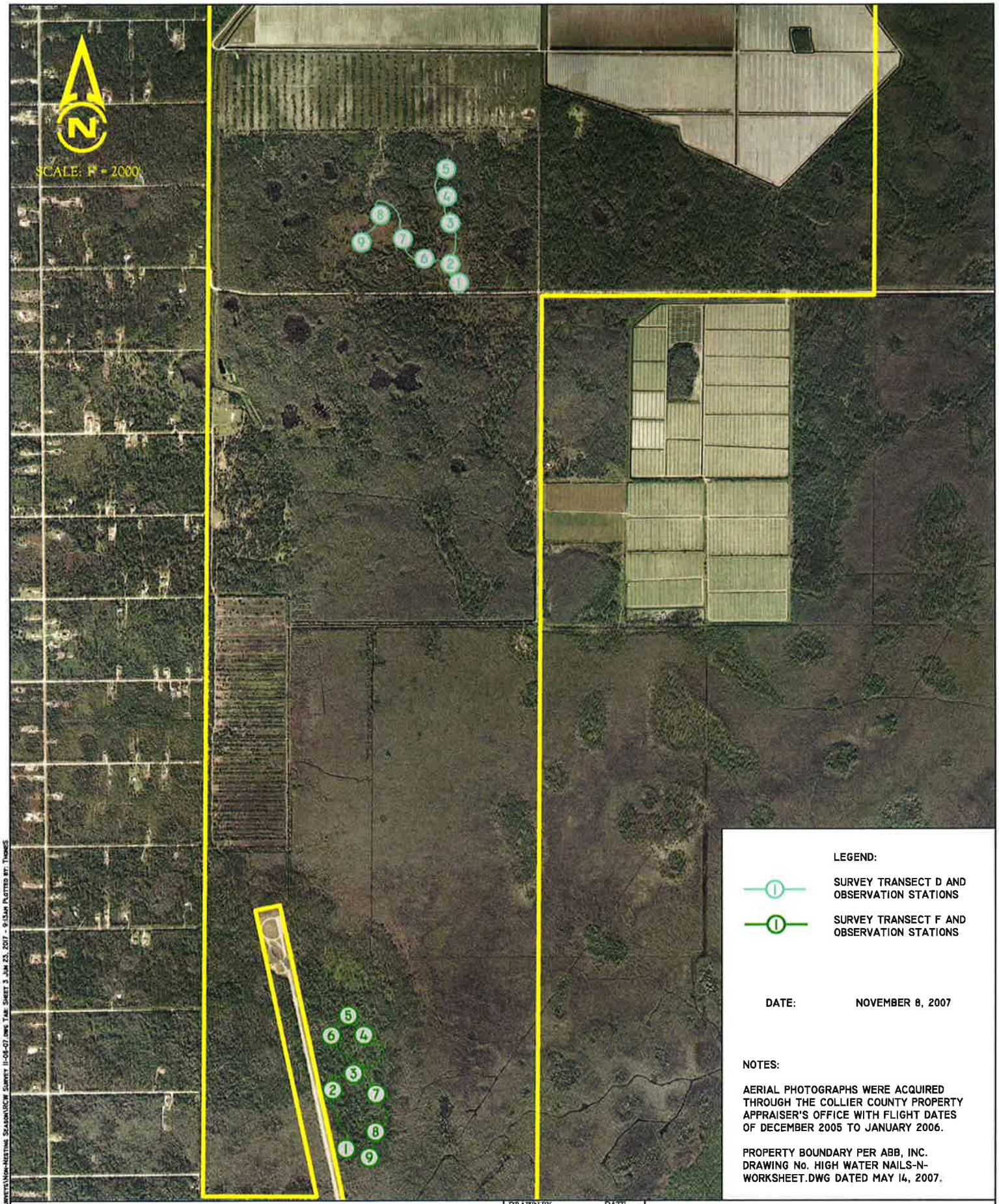
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05CDH&R\RCW Surveys\Non-Nesting Season\RCW Survey 11-08-07.dwg Tab: Sheet 2 Jun 23, 2017 - 9:12am Plotted by: ThomeS



LEGEND:

SURVEY TRANSECT D AND OBSERVATION STATIONS

SURVEY TRANSECT F AND OBSERVATION STATIONS

DATE: NOVEMBER 8, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

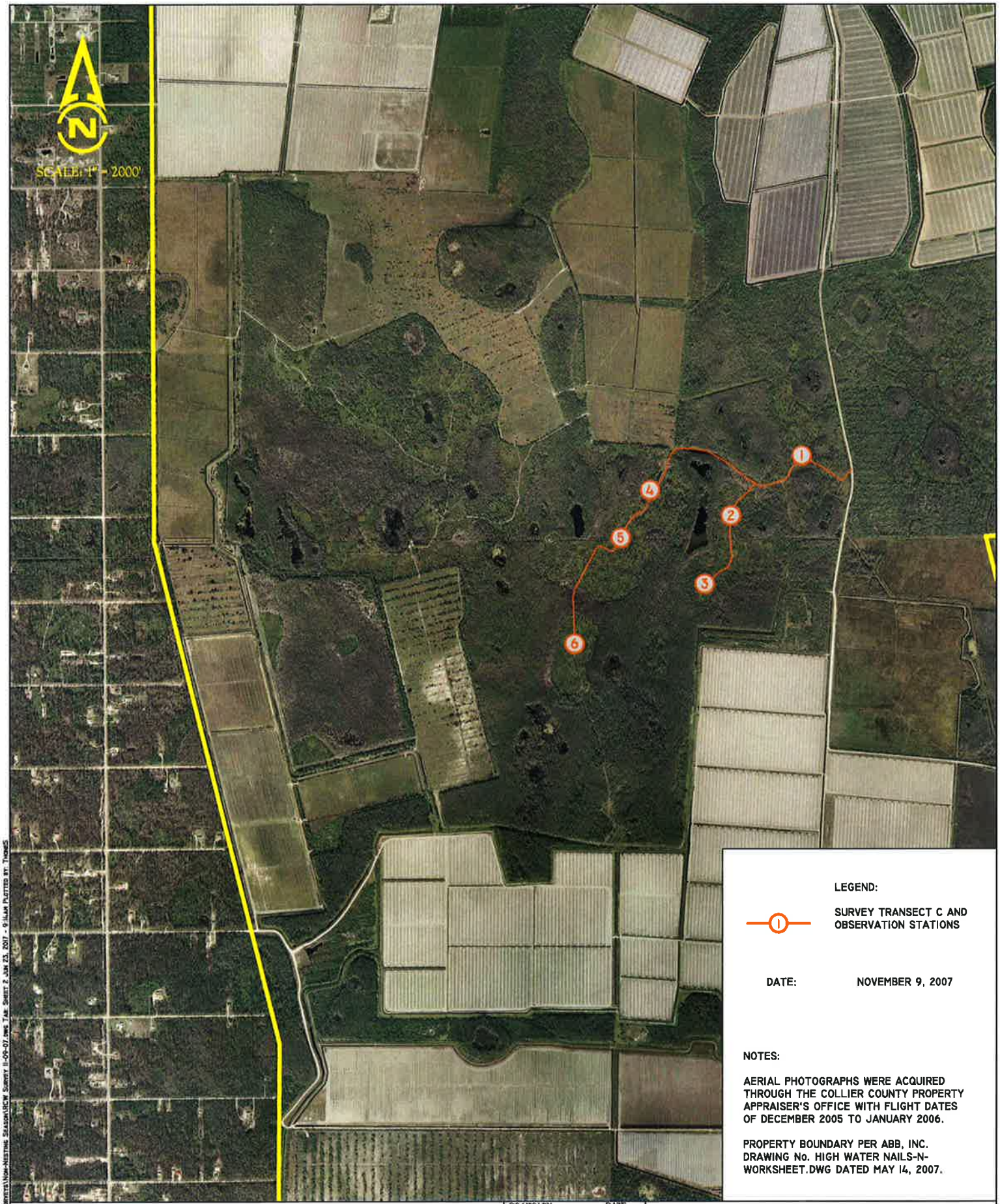
PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER
NON-NESTING SEASON FORAGING SURVEY
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists

J:\2005\05csh\ai\RCW Surveys\Non-Nesting Season\RCW Survey 11-08-07.dwg Tab: Sheet 3 Jan 23, 2007 - 9:15am Plotted by: Thomas



LEGEND:

SURVEY TRANSECT C AND OBSERVATION STATIONS

DATE: NOVEMBER 9, 2007

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH FLIGHT DATES OF DECEMBER 2005 TO JANUARY 2006.

PROPERTY BOUNDARY PER ABB, INC. DRAWING No. HIGH WATER NAILS-N-WORKSHEET.DWG DATED MAY 14, 2007.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
F.L.	1/3/08
REVIEWED BY	DATE
C.G.R.	1/3/08
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cen6a11\RCW Surveys\Non-Nesting Season\RCW Survey 11-09-07.dwg Tab: Sheet 2 Jan 23, 2007 - 9:14am Plotted by: Thomas

EXHIBIT 17

RURAL LANDS WEST
RCW NESTING AND NON-NESTING SEASONS SURVEY REPORT

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING AND NON-NESTING SEASONS
FORAGING SURVEY REPORT

June 2017

Prepared For:

Collier Enterprises Management, Inc.
3003 Tamiami Trail North, Suite 400
Naples, Florida 34103
(239) 261-4455

Prepared By:

Passarella & Associates, Inc.
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Project No. 05CEM1481

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INTRODUCTION

The following report documents the red-cockaded woodpecker (*Picoides borealis*) (RCW) nesting and non-nesting season foraging survey conducted by Passarella & Associates, Inc. (PAI) for Rural Lands West (Project). The survey was conducted per the U.S. Fish and Wildlife Service (USFWS) guidelines in the Draft Red-Cockaded Woodpecker South Florida Survey Protocol (USFWS 2004).

The Project site totals 10,264.63± acres and is located in Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; Collier County (Appendix A). The Project site is located along the eastern boundary of Golden Gate Estates. Oil Well Road (County Road (CR) 858) bisects the Project site and Immokalee Road is located approximately two miles to the north. Shaggy Cypress Swamp is located north of Oil well Road within the Project boundary. The Camp Keais Strand occupies the eastern portion of the Project area. The Project boundary is located approximately one mile north of the USFWS RCW Consultation Area (Appendix B).

Habitat mapping to identify preferential RCW survey areas was conducted utilizing Florida Land Use, Cover, and Forms Classification System (FLUCFCS) (Florida Department of Transportation 1999). A total of 77 vegetative associations and land uses (i.e., FLUCFCS codes) were identified on the property. The dominant land use on the property is agriculture. The land use types Cropland and Pastureland (FLUCFCS Code 210) and Row Crops (FLUCFCS Code 214) comprise approximately 48 percent (4,934± acres) of the site. The native areas on-site are dominated by Cypress, Disturbed (FLUCFCS Code 6219) which comprises approximately 29 percent of the Project site. Native upland habitats are dominated by Pine Flatwoods, Disturbed (FLUCFCS Code 4119) which comprises 2.6 percent of the site. An aerial with the FLUCFCS and Wetlands map is included as Appendix C.

BIOLOGY OF THE RED-COCKADED WOODPECKER

The RCW lives and breeds within old growth pine forests. The RCW forages preferentially in stands of live pines with trees that average a diameter of ten inches or greater (USFWS 1985). Dense pine stands or stands primarily composed of hardwoods are avoided. RCWs feed primarily on insects including beetles, ants, grubs, and caterpillars. A smaller percent of the diet may consist of seasonal fruits, berries, and seeds.

The RCW roosts and nests in cavities excavated in live pine trees. Cavity trees are typically at least 60 to 80 years old and usually weakened by a fungal infection known as red-heart disease (McFarlane 1992, Ehrlich *et al.* 1988). Cavities are typically constructed on the main trunk just below the lowest branches. Numerous resin wells are maintained around the cavity entrance. The resin wells may help defend against ground dwelling predators and insect damage.

RCWs live in family groups composed of a mated pair, offspring of the year, and unmated male helpers. The group's cavity trees are aggregated in clusters that typically occupy an area of about ten acres (USFWS 1985). Groups are highly territorial and may defend an area nearly 200

acres in size (McFarlane 1992, Ehrlich *et al.* 1988, USFWS 1985). RCWs are cooperative breeders and one or more non-breeding males may assist the breeding pair in brooding, feeding, and territorial defense. Egg laying typically occurs during April, May, and June (USFWS 1985). Clutch size is typically two to five eggs (Ehrlich *et al.* 1988, USFWS 1985). Both sexes are involved in incubating and feeding. The time from egg laying to fledging is approximately 40 days (USFWS 1985).

PREVIOUS RCW SURVEYS

Nesting and non-nesting season foraging surveys were previously conducted by PAI on the Big Cypress Stewardship District site in 2007. Rural Lands West is located within the Big Cypress Stewardship District. The nesting season foraging survey for the Big Cypress Stewardship District was conducted in May and June 2007, and the non-nesting season foraging survey was conducted in October and November 2007. The prior RCW surveys were conducted according to the USFWS Draft Red-Cockaded Woodpecker South Florida Survey Protocol (USFWS 2004). No RCWs or RCW cavities were observed during the 2007 surveys.

SURVEY METHODOLOGY

The current RCW nesting and non-nesting season foraging surveys for Rural Lands West were conducted according to the USFWS Draft Red-Cockaded Woodpecker South Florida Survey Protocol (2004). The Project site has limited habitat for RCWs due to the dense coverage by Brazilian pepper in the understory of the forested habitats. However, surveys were conducted within the development area since the Project is located within the known geographical range of RCWs. Prior to conducting the surveys, PAI identified the most likely habitat for RCW foraging within the development area. Three areas (Areas A, B, and C) were designated for the nesting and non-nesting season foraging surveys (Appendix D).

The nesting season foraging survey for Rural Lands West was conducted for 14 days between May 29 and June 17, 2014. Nesting season foraging surveys for the Project were conducted during the morning hours in accordance with the South Florida Survey Protocol (USFWS 2004). Surveys generally began around sunrise and ended prior to four hours past sunrise, or when local weather conditions were not favorable.

The non-nesting season foraging survey was conducted for 14 days between December 2 and 19, 2014 within the same three survey areas (Areas A, B, and C). The December 2014 foraging surveys were also conducted during the morning hours in accordance with the Survey Protocol (USFWS 2004).

The nesting and non-nesting season foraging surveys were conducted by qualified ecologists traversing suitable habitat by foot. At regular intervals, the ecologist would stop, look, and listen for RCW activity. Visual observations were aided by binoculars. Since RCWs are territorial and will defend their territory from intrusion by other individuals, RCW vocal recordings were used to facilitate observation of RCWs that could be present in the area. At each observation station,

RCW vocal recordings were played for at least 30 continuous seconds as recommended by the South Florida Survey Protocol (USFWS 2004). Pedestrian transects and observation stations were recorded on aerial photographs, and wildlife observations were recorded. Relative weather conditions were documented for each survey period.

RESULTS

No RCWs were heard or observed and no RCW cavity trees were observed during the May through June 2014 nesting season foraging survey. Daily field observations for the nesting season survey are attached as Appendix E. Maps showing the survey transects and observation station numbers for the nesting season are provided as Appendix F.

No RCWs were heard or observed and no RCW cavity trees were observed during the December 2014 non-nesting season foraging survey. Daily field observations for the non-nesting season survey are attached as Appendix G. Maps showing the survey transects and observation station numbers for the non-nesting season are provided as Appendix H.

Cavity dwellers including the downy woodpecker (*Picoides pubescens*), great-crested flycatcher (*Myiarchus crinitus*), red-bellied woodpecker (*Melanerpes carolinus*), pileated woodpecker (*Dryocopus pileatus*), brown-headed nuthatch (*Sitta pusilla*), and hairy woodpecker (*Picoides villosus*) were observed during the nesting and/or non-nesting season foraging surveys. No cavities in live pine trees have been observed on the Project site.

REFERENCES

Ehrlich, Paul R. *et al.* 1988. The Birder's Handbook; A Field Guide to the Natural History of North American Birds. Simon & Schuster, Inc., New York, New York. 785 pages.

Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System. Procedure No. 550-010-001-a. Third Edition.

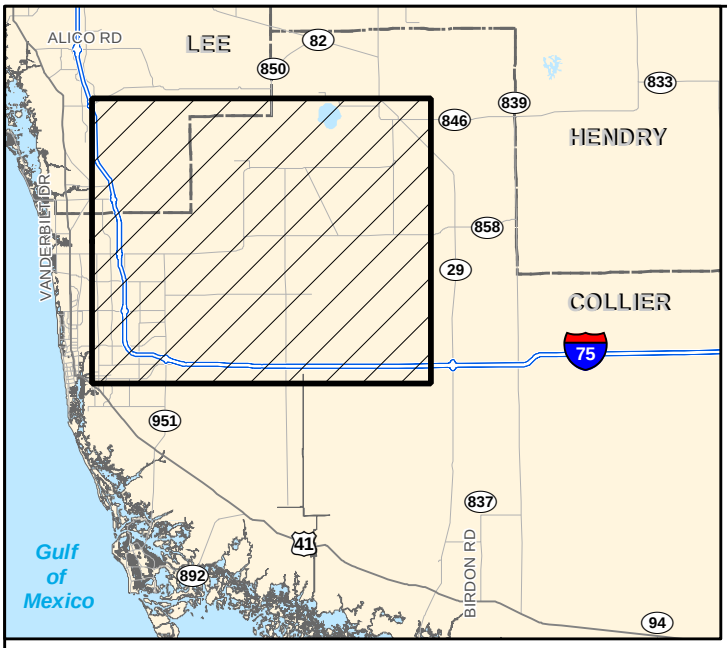
McFarlane, Robert W. 1992. A Stillness in the Pines; The Ecology of the Red-Cockaded Woodpecker. W.W. Norton & Company, New York, New York. 270 pages.

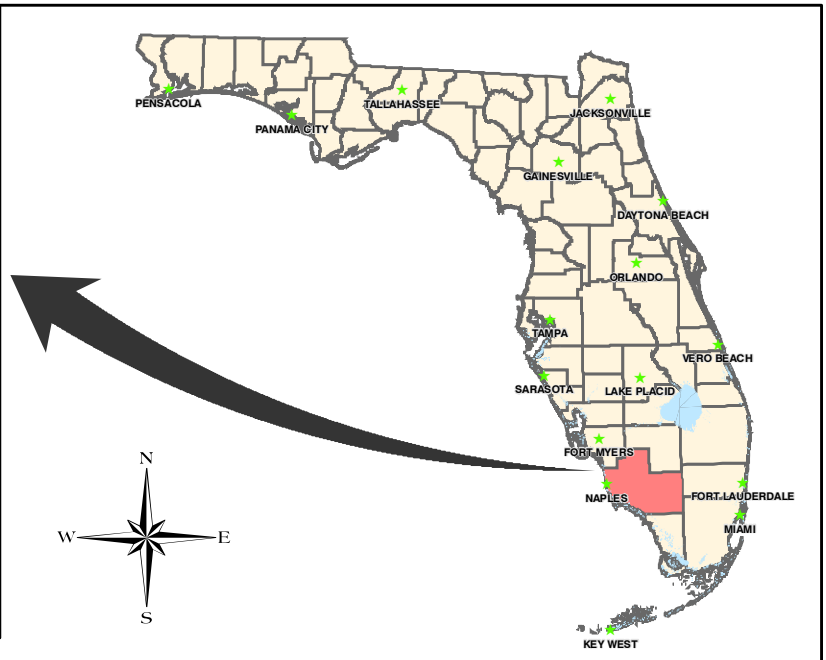
U.S. Fish and Wildlife Service. 1985. Recovery Plan for the Red-Cockaded Woodpecker. U.S. Department of the Interior, Fish and Wildlife Service, Atlanta, Georgia. 88 pages.

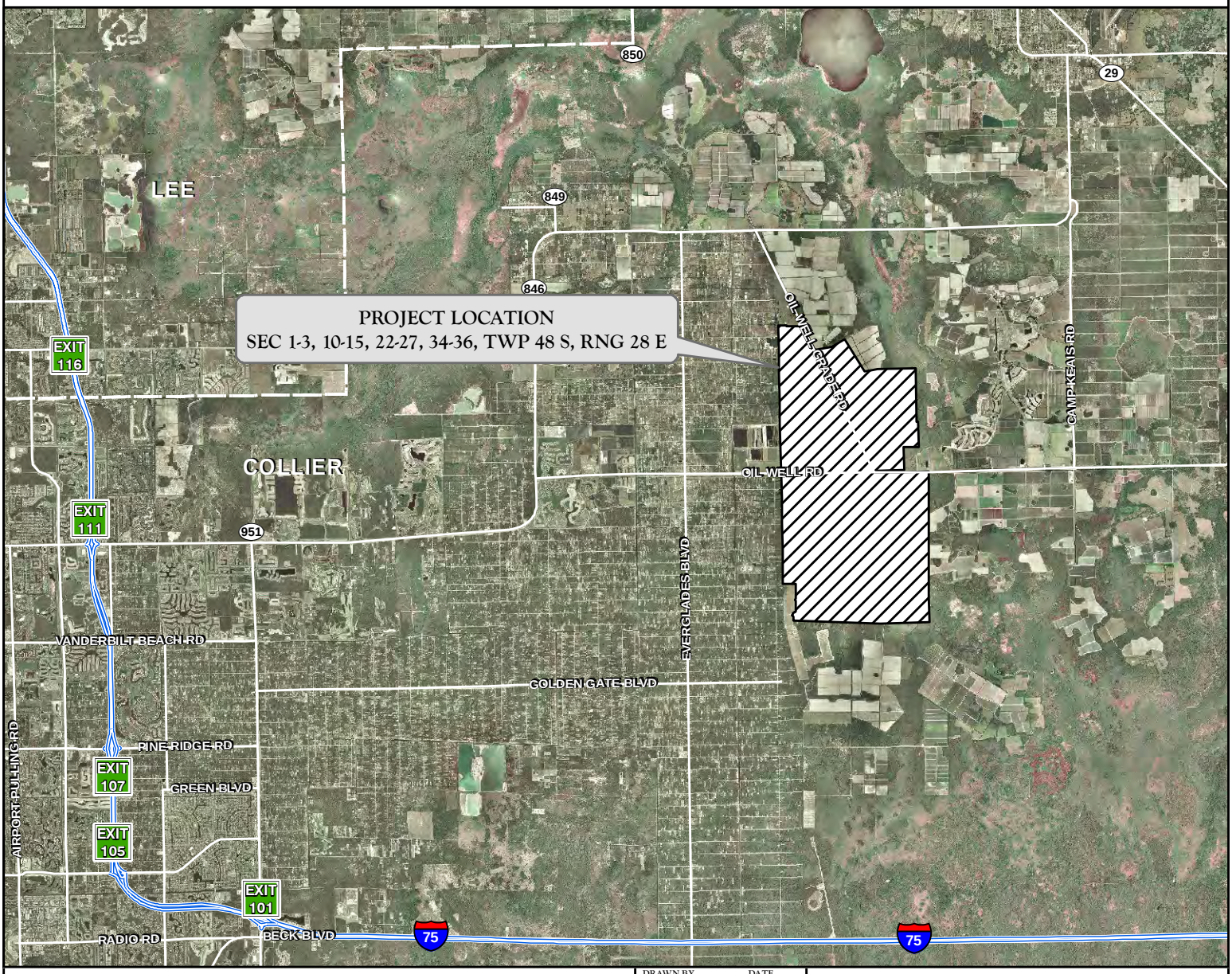
U.S. Fish and Wildlife Service. 2004. Draft Red-Cockaded Woodpecker South Florida Survey Protocol (adapted from Service 2003).

APPENDIX A

PROJECT LOCATION MAP







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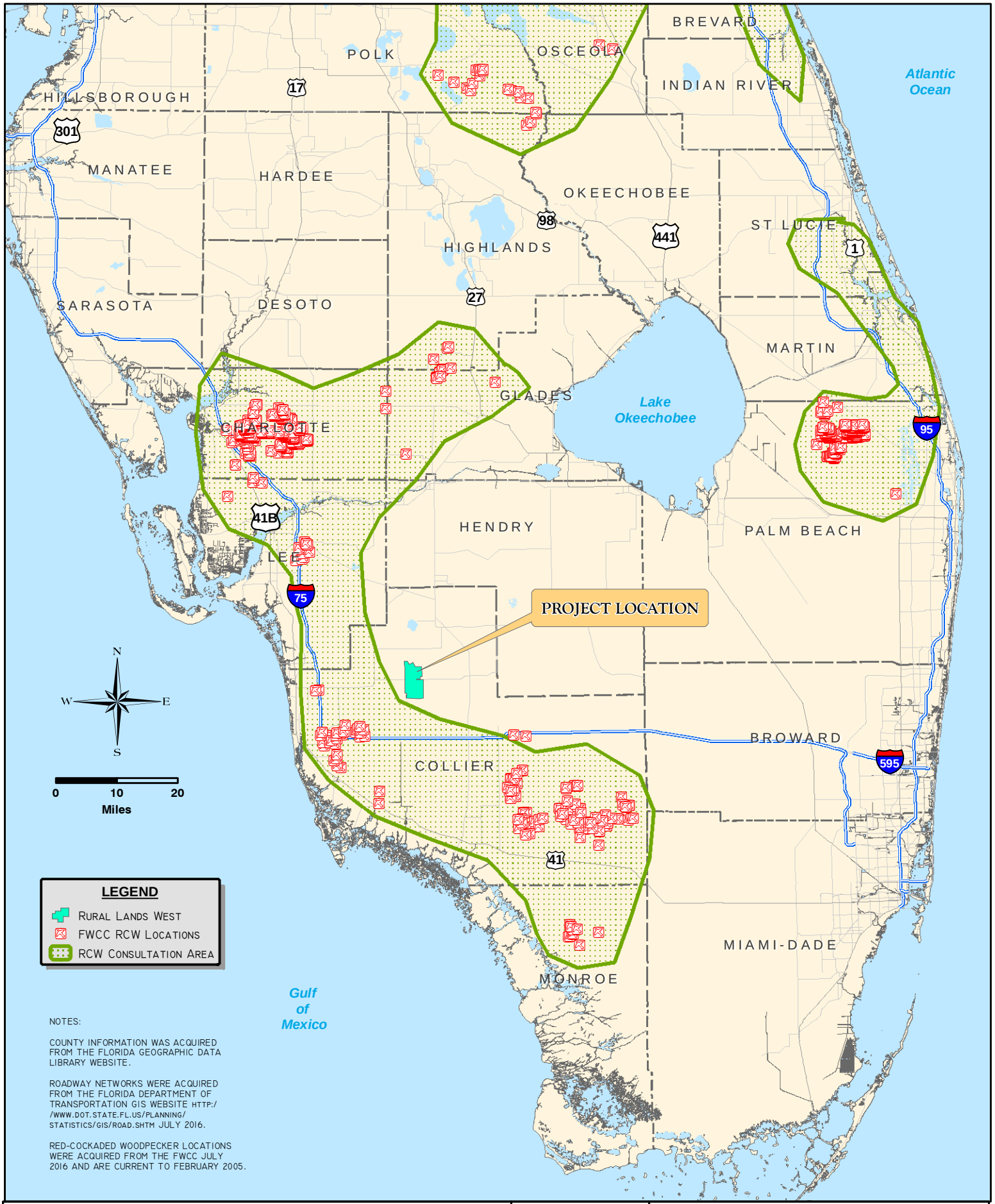
APPENDIX A. PROJECT LOCATION MAP
RURAL LANDS WEST

DRAWN BY	DATE
H.H.	1/25/16
REVIEWED BY	DATE
C.G.R.	1/25/16
REVISED	DATE
H.H.	1/4/17

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists

APPENDIX B

RCW CONSULTATION AREA WITH LOCATIONS



NOTES:

COUNTY INFORMATION WAS ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA DEPARTMENT OF TRANSPORTATION GIS WEBSITE HTTP://WWW.DOT.STATE.FL.US/PLANNING/STATISTICS/GIS/ROAD.SHTM JULY 2016.

RED-COCKADED WOODPECKER LOCATIONS WERE ACQUIRED FROM THE FWCC JULY 2016 AND ARE CURRENT TO FEBRUARY 2005.

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APPENDIX B. RCW CONSULTATION AREA WITH LOCATIONS

RURAL LANDS WEST

DRAWN BY	DATE
H.H.	2/22/17
REVIEWED BY	DATE
H.P.	2/22/17
REVISED	DATE

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APPENDIX C

AERIAL WITH FLUCFCS AND WETLANDS MAP

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac. ±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac. ±
210	CROPLAND AND PASTURELAND	758.92 Ac. ±
211	IMPROVED PASTURE	7.40 Ac. ±
212	UNIMPROVED PASTURE	37.35 Ac. ±
214	ROW CROPS	4174.76 Ac. ±
260	RURAL OPEN LAND	33.27 Ac. ±
261	FALLOW CROPLAND	184.74 Ac. ±
262	LOW PASTURE, HYDRIC	43.36 Ac. ±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac. ±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac. ±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac. ±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac. ±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac. ±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac. ±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac. ±
422	BRAZILIAN PEPPER	42.76 Ac. ±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac. ±
424	MELALEUCA	0.83 Ac. ±
4241	MELALEUCA, HYDRIC	5.88 Ac. ±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac. ±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac. ±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac. ±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac. ±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac. ±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac. ±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac. ±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac. ±
514	DITCH	30.20 Ac. ±
514W	DITCH, WETLAND	83.77 Ac. ±
525	CATTLE POND	1.89 Ac. ±
525W	CATTLE POND, WETLAND	1.25 Ac. ±
530	RESERVOIR	2.16 Ac. ±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac. ±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac. ±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac. ±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac. ±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac. ±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac. ±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac. ±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac. ±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac. ±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac. ±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac. ±
6249 E1	CYPRESS PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac. ±
6249 E2	CYPRESS PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac. ±
6249 E3	CYPRESS PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac. ±
6249 E4	CYPRESS PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac. ±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac. ±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac. ±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac. ±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac. ±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac. ±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac. ±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac. ±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac. ±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac. ±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac. ±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac. ±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac. ±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac. ±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac. ±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac. ±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac. ±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac. ±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac. ±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac. ±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac. ±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac. ±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac. ±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac. ±
740	DISTURBED LAND	38.81 Ac. ±
7401	DISTURBED LAND, HYDRIC	27.87 Ac. ±
743	SPOIL	0.48 Ac. ±
747	BERM	16.69 Ac. ±
814	ROAD	26.44 Ac. ±
8146	UNPAVED ROAD	49.72 Ac. ±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.dwg DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.dwg DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

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DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

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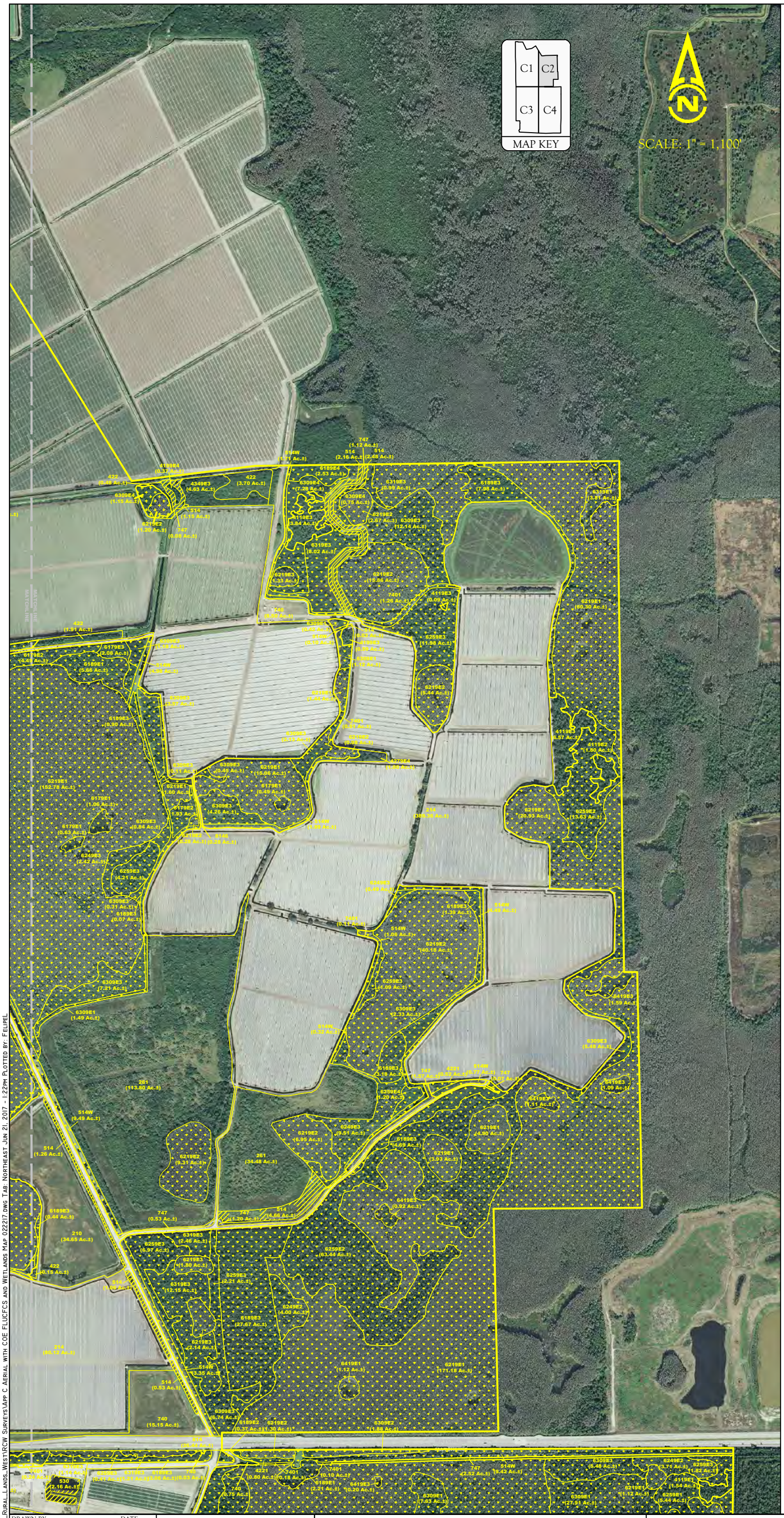
PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C1



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6249 E2	CYPRESS PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac. ±
6249 E3	CYPRESS PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac. ±
6249 E4	CYPRESS PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac. ±
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6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac. ±
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6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac. ±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac. ±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac. ±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac. ±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac. ±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac. ±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac. ±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac. ±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac. ±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac. ±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac. ±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac. ±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac. ±
740	DISTURBED LAND	38.81 Ac. ±
7401	DISTURBED LAND, HYDRIC	27.87 Ac. ±
743	SPOIL	0.48 Ac. ±
747	BERM	16.69 Ac. ±
814	ROAD	26.44 Ac. ±
8146	UNPAVED ROAD	49.72 Ac. ±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM\48\00_RURAL_LANDS_WEST\RCW SURVEYS\APP C AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: NORTHEAST JUN 21, 2017 - 1:22PM PLOTTED BY: FELIPEL

DRAWN BY	H.H.
DATE	7/26/16
REVIEWED BY	H.P.
DATE	7/26/16
REVISED	
DATE	

13620 Metropolis Avenue
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Fort Myers, Florida 33912
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PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C2

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac. ±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac. ±
210	CROPLAND AND PASTURELAND	758.92 Ac. ±
211	IMPROVED PASTURE	7.40 Ac. ±
212	UNIMPROVED PASTURE	37.35 Ac. ±
214	ROW CROPS	4174.76 Ac. ±
260	RURAL OPEN LAND	33.27 Ac. ±
261	FALLOW CROPLAND	184.74 Ac. ±
262	LOW PASTURE, HYDRIC	43.36 Ac. ±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac. ±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac. ±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac. ±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac. ±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac. ±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac. ±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac. ±
422	BRAZILIAN PEPPER	42.76 Ac. ±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac. ±
424	MELALEUCA	0.83 Ac. ±
4241	MELALEUCA, HYDRIC	5.88 Ac. ±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac. ±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac. ±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac. ±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac. ±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac. ±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac. ±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac. ±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac. ±
514	DITCH	30.20 Ac. ±
514W	DITCH, WETLAND	83.77 Ac. ±
525	CATTLE POND	1.89 Ac. ±
525W	CATTLE POND, WETLAND	1.25 Ac. ±
530	RESERVOIR	2.16 Ac. ±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac. ±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac. ±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac. ±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac. ±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac. ±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac. ±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac. ±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac. ±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac. ±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac. ±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac. ±
6249 E1	CYPRESS PINE;CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac. ±
6249 E2	CYPRESS PINE;CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac. ±
6249 E3	CYPRESS PINE;CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac. ±
6249 E4	CYPRESS PINE;CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac. ±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac. ±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac. ±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac. ±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac. ±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac. ±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac. ±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac. ±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac. ±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac. ±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac. ±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac. ±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac. ±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac. ±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac. ±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac. ±
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6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac. ±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac. ±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac. ±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac. ±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac. ±
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740	DISTURBED LAND	38.81 Ac. ±
7401	DISTURBED LAND, HYDRIC	27.87 Ac. ±
743	SPOIL	0.48 Ac. ±
747	BERM	16.69 Ac. ±
814	ROAD	26.44 Ac. ±
8146	UNPAVED ROAD	49.72 Ac. ±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\RCW SURVEYS\APP C AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHWEST JUN 21, 2017 - 1:32PM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

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Suite 200
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PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C3

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

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4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac. ±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac. ±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac. ±
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424	MELALEUCA	0.83 Ac. ±
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4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac. ±
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525W	CATTLE POND, WETLAND	1.25 Ac. ±
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6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac. ±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac. ±
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6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac. ±
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6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac. ±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac. ±
740	DISTURBED LAND	38.81 Ac. ±
7401	DISTURBED LAND, HYDRIC	27.87 Ac. ±
743	SPOIL	0.48 Ac. ±
747	BERM	16.69 Ac. ±
814	ROAD	26.44 Ac. ±
8146	UNPAVED ROAD	49.72 Ac. ±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. II283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\RCW SURVEYS\APP C AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHEAST JUN 21, 2017 - 1:37PM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

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PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

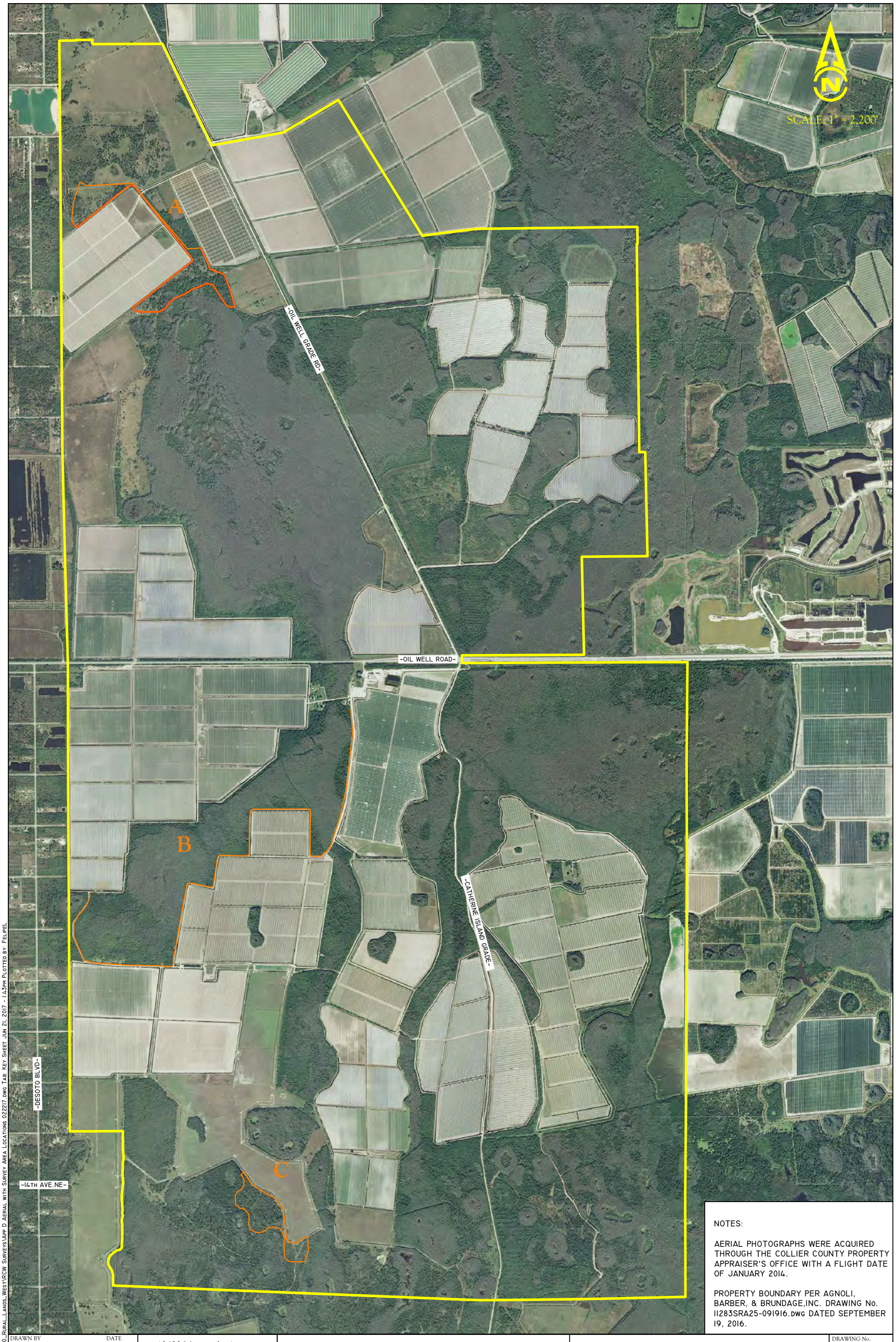
AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C4

APPENDIX D

AERIAL WITH SURVEY AREA LOCATIONS



NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\RCW SURVEYS\APP D AERIAL WITH SURVEY AREA LOCATIONS 022217.DWG TAB: KEY SHEET JUN 21, 2017 - 1:43PM PLOTTED BY: FELIPEL

DRAWN BY: D.B.	DATE: 5/28/14
REVIEWED BY: K.C.P.	DATE: 5/28/14
REVISED: H.H.	DATE: 2/22/17

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PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH SURVEY AREA LOCATIONS

DRAWING No. 05CEM1481

SHEET No. APPENDIX D

APPENDIX E

RCW NESTING SEASON FORAGING SURVEY FIELD OBSERVATIONS

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 10 percent, calm wind, and temperature in the upper 60s

End time of survey: 0925 **Weather conditions:** Cloud cover 30 percent, wind south-southeast at 5-10 mph, and temperature in the mid 80s

Observer: Tomas Condon

Station	Time	Field Notes
1	0630	Heard mourning dove, Northern cardinal, and Eastern phoebe. Observed common grackles. Heard and observed red-shouldered hawk, red-bellied woodpecker, and blue-gray gnatcatcher. Observed anhinga, great egrets, tri-colored heron, and white ibis overhead. Heard and observed Florida sandhill cranes overhead.
2	0652	Heard Florida sandhill cranes, mourning dove, and Northern cardinals. Observed common grackles and red-bellied woodpeckers. Heard and observed red-shouldered hawk. Observed white ibis overhead, swallow-tailed kite overhead, great egret overhead, and cattle egrets overhead.
3	0716	Heard blue jays and red-bellied woodpecker. Observed cattle egrets, blue-gray gnatcatcher, Northern cardinal, and Eastern phoebe. Heard and observed mourning dove. Observed white ibis overhead.
4	0739	Heard mourning dove, red-bellied woodpecker, Northern cardinal, Florida sandhill cranes, blue jay, and Eastern phoebe. Observed pileated woodpecker.
5	0805	Heard blue jay. Heard and observed mourning dove, Northern cardinal, blue-gray gnatcatcher, downy woodpecker, and red-bellied woodpecker.
6	0845	Heard Eastern meadowlark, red-bellied woodpecker, and red-shouldered hawk. Observed great-crested flycatcher. Heard and observed mourning dove.
7	0905	Heard American crow and great-crested flycatcher. Observed gray squirrel. Heard and observed red-bellied woodpecker, mourning dove, and Northern cardinal.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Cloud cover 10 percent, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 50 percent, wind south-southeast at 5-10 mph, and temperature in the mid 80s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0630	Heard Florida sandhill crane, Northern cardinal, Carolina wren, and red-bellied woodpecker. Heard and observed red-shouldered hawk.
2	0650	Heard Carolina wren and mourning dove. Heard and observed Florida sandhill crane flying southeast across the berm.
3	0710	Heard mourning dove, Northern cardinal, and great-crested flycatcher. Heard and observed blue-gray gnatcatcher.
4	0725	Heard red-bellied woodpecker, mourning dove, and Florida sandhill crane. Heard and observed Northern cardinal.
5	0750	Heard white-eyed vireo. Heard and observed blue-gray gnatcatcher and black-bellied whistling ducks.
6	0810	Heard red-bellied woodpecker, great-crested flycatcher, and mourning dove. Observed red-shouldered hawk.
7	0830	Heard common ground dove and Northern cardinal.
8	0845	Heard Northern cardinals. Heard and observed mourning dove and red-bellied woodpecker.
9	0900	Heard red-bellied woodpecker, great-crested flycatcher, mourning dove, and Northern cardinal. Heard and observed European starling.
10	0915	Heard mourning dove and Florida sandhill cranes. Heard and observed European starling.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 29, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Clear sky, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 50 percent, wind south-southeast at 5-10 mph, and temperature in the mid 80s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard Carolina wren and white-eyed vireo. Observed common grackle, red-shouldered hawk, and Eastern towhee.
2	0650	Heard Northern cardinal and blue-gray gnatcatcher. Observed brown thrasher.
3	0710	Heard mourning doves, Northern cardinal, and white-eyed vireo. Observed Carolina wren and black vultures.
4	0730	Heard Carolina wren and common ground doves. Observed Cooper's hawk and blue-gray gnatcatcher.
5	0750	Heard red-bellied woodpecker, blue-gray gnatcatcher, and pileated woodpecker.
6	0820	Observed downy woodpecker, Northern cardinal, and Eastern towhee.
7	0840	Heard Carolina wren and common ground doves. Observed swallow-tailed kites and red-shouldered hawk.
8	0900	Observed turkey vulture, Northern cardinal, Carolina wren, and mourning doves. Heard and observed Northern flicker.
9	0925	Observed Carolina wren. Heard and observed great-crested flycatcher.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 10 percent, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 40 percent, wind southeast at 5-10 mph, and temperature in the low 80s

Observer: Tomas Condon

Station	Time	Field Notes
1	0630	Heard red-shouldered hawk, red-bellied woodpecker, Florida sandhill cranes, pileated woodpecker, Eastern phoebe, and downy woodpecker. Observed blue jay and boat-tailed grackles. Observed great egrets and glossy ibis overhead. Heard and observed mourning dove, Northern cardinal, common grackles, and blue-gray gnatcatcher.
2	0654	Heard Northern cardinal and Florida sandhill crane. Observed blue-gray gnatcatcher. Heard and observed red-bellied woodpecker and mourning dove. Observed white ibis overhead.
3	0717	Heard Northern cardinal, red-bellied woodpecker, and mourning dove. Observed common grackles overhead. Quiet overall, few birds.
4	0740	Heard gray catbird, red-bellied woodpecker, and Florida sandhill cranes. Heard and observed mourning dove, Northern cardinal, red-shouldered hawk, Carolina wren, and pileated woodpecker. Observed white ibis overhead.
5	0803	Heard blue jay, blue-gray gnatcatcher, pileated woodpecker, Carolina wren, red-bellied woodpecker, red-shouldered hawk, and Northern cardinal. Observed swallow-tailed kite. Heard and observed mourning dove.
6	0848	Heard gray squirrel, mourning dove, red-bellied woodpecker, Northern bobwhite, Eastern meadowlark, Northern cardinal, and Northern mockingbird. Observed tree swallow overhead.
7	0912	Heard mourning dove, red-bellied woodpecker, Northern bobwhite, and Carolina wren. Heard and observed tree swallows and downy woodpecker.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Cloud cover 25 percent, calm wind, and temperature in the upper 60s

End time of survey: 0940 **Weather conditions:** Cloud cover 20 percent, wind southeast at 5-10 mph, and temperature in the low 80s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0630	Heard Northern cardinal, mourning dove, and blue-gray gnatcatcher. Heard and observed common grackles and red-shouldered hawk.
2	0650	Heard white-eyed vireo. Heard and observed great-crested flycatcher, red-shouldered hawk, mourning dove, Northern cardinal, 18 white ibis, and red-bellied woodpecker.
3	0705	Heard mourning dove and Northern cardinals. Observed three white ibis.
4	0725	Heard red-bellied woodpecker, Northern cardinal, red-shouldered hawk, blue-gray gnatcatcher, and downy woodpecker.
5	0745	Heard downy woodpecker, Northern cardinal, red-bellied woodpecker, and mourning dove. Observed four glossy ibis
6	0805	Heard Florida sandhill crane, common ground dove, red-shouldered hawk, great-crested flycatcher, and Northern cardinal.
7	0825	Heard Northern cardinal. Heard and observed red-shouldered hawk.
8	0845	Heard mourning dove and Northern cardinal. Observed nine white ibis. Heard and observed red-bellied woodpecker.
9	0905	Heard mourning dove, Northern cardinal, Florida sandhill cranes, and red-shouldered hawk. Observed black vultures overhead. Heard and observed common grackles.
10	0925	Heard mourning dove, white-eyed vireo, and blue-gray gnatcatcher. Observed turkey vultures. Heard and observed boat-tailed grackles.
	0940	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: May 30, 2014
Survey Transect: C
Start time of survey: 0635 **Weather conditions:** Cloud cover 65 percent, foggy, calm wind, and temperature in the upper 60s

End time of survey: 0935 **Weather conditions:** Cloud cover 25 percent, fog has lifted, wind southeast at 5-10 mph, and temperature in the low 80s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0635	Heard mourning dove, red-bellied woodpecker, and Southern cricket frog. Heard and observed Northern cardinal, common grackle, and blue-gray gnatcatcher.
2	0652	Heard Southern cricket frog, mourning dove, and blue-gray gnatcatcher. Observed red-bellied woodpecker.
3	0709	Heard Carolina wren, mourning doves, Northern cardinal, and Southern cricket frog.
4	0730	Observed Northern cardinal. Heard and observed mourning doves and blue-gray gnatcatchers.
5	0745	Heard Northern cardinal. Observed blue-gray gnatcatcher. Heard and observed mourning dove.
6	0800	Heard Carolina wren, Northern cardinal, green treefrog, and red-shouldered hawk.
7	0820	Heard Carolina wren, Southern cricket frog, and mourning dove. Observed swallow-tailed kite and black vulture. Heard and observed Northern cardinal.
8	0855	Observed swallow-tailed kite, mourning doves, and turkey vulture. Heard and observed red-shouldered hawk, red-bellied woodpecker, and pileated woodpecker.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 2, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 95 percent, wind northeast at 0-5 mph, and temperature in the low 70s

End time of survey: 0935 **Weather conditions:** Cloud cover 95 percent, wind east-northeast at 10-15 mph, and temperature in the upper 70s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard wild turkey. Observed bald eagle.
2	0645	Heard Carolina wren. Observed blue jay.
3	0705	Heard Carolina wren. Observed turkey vulture and crested caracara.
4	0750	Observed Northern cardinal, common grackle, and swallow-tailed kite.
5	0810	Observed red-bellied woodpecker and Northern cardinal. Heard and observed great crested flycatcher.
6	0830	Observed red-shouldered hawk and great-crested flycatcher.
7	0850	Observed downy woodpecker and blue jay.
8	0910	Heard Carolina wren. Observed pileated woodpecker. Heard and observed blue-gray gnatcatcher.
9	0930	Observed red-shouldered hawk. Heard and observed Carolina wren.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 2, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Cloud cover 75 percent, wind northeast at 0-5 mph, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Overcast sky, wind east-northeast at 10-15 mph, and temperature in the upper 70s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0630	Heard Carolina wren, Northern cardinal, and red-shouldered hawk.
2	0645	Heard Carolina wren, red-shouldered hawk, common ground dove, and white-eyed vireo.
3	0705	Heard Northern cardinal, mourning dove, and Carolina wren.
4	0725	Heard red-shouldered hawk, Florida sandhill crane, and common grackles. Heard and observed mourning doves.
5	0741	Heard Carolina wren. Observed glossy ibis and Florida sandhill crane along the ditch. Observed small swallow-tailed kite. Heard and observed blue-gray gnatcatcher.
6	0800	Heard red-shouldered hawk, common yellowthroat, Northern cardinal, and red-bellied woodpecker.
7	0820	Heard Northern cardinal and red-shouldered hawk. Observed black vulture. Heard and observed flock of black-bellied whistling ducks flying overhead.
8	0840	Heard red-bellied woodpecker, common ground doves, and pileated woodpecker.
9	0855	Heard mourning dove and red-shouldered hawk.
10	0915	Heard Northern cardinal and mourning dove. Observed several white ibis along the ditch. Heard and observed common grackles.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 2, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 95 percent, moderate precipitation, wind northeast at 0-5 mph, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Cloud cover 100 percent, wind east-northeast at 10-15 mph, and temperature in the upper 70s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0630	Heard Southern cricket frog. Observed mourning dove.
2	0650	Heard red-bellied woodpecker, green treefrog, and Carolina wren. Observed swallow-tailed kites, Northern cardinal, black vulture, and great egret. Heard and observed mourning dove.
3	0720	Heard Southern cricket frog. Heard and observed blue-gray gnatcatcher.
4	0740	Observed swallow-tailed kite. Heard and observed Northern cardinal.
5	0800	Heard mourning dove. Observed black vulture and little blue heron. Heard and observed common ground dove and Northern cardinal.
6	0820	Heard red-bellied woodpecker. Observed turkey vulture.
7	0840	Heard red-bellied woodpecker and green treefrog.
8	0915	Heard green treefrog. Observed swallow-tailed kite, black vulture, and fish crane.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 3, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 60 percent, wind east-northeast at 0-5 mph, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Cloud cover 90 percent, wind east at 5-10 mph, and temperature in the upper 70s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard great horned owl. Observed turkey vulture and common ground dove.
2	0650	Heard great horned owl and great-crested flycatcher.
3	0710	Heard screech owl. Observed Northern cardinal and downy woodpecker.
4	0730	Heard Carolina wren. Observed common grackle and mourning dove.
5	0755	Observed Northern cardinal. Heard and observed red-shouldered hawk.
6	0815	Heard and observed red-bellied woodpecker and Carolina wren.
7	0855	Heard Carolina wren. Heard and observed great-crested flycatcher.
8	0920	Observed Northern cardinal, mourning dove, and brown thrasher.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 3, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Cloud cover 95 percent, wind east-northeast at 0-5 mph, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Overcast sky, wind east at 5-10 mph, and temperature in the upper 70s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0630	Heard mourning doves, red-shouldered hawk, Northern cardinal, and red-bellied woodpecker. Heard and observed common grackles.
2	0650	Heard red-bellied woodpecker, blue-gray gnatcatcher, white-eyed vireo, and Northern cardinal. Observed black vulture.
3	0705	Heard red-bellied woodpecker, mourning dove, and Northern cardinal. Heard and observed red-shouldered hawk.
4	0725	Heard red-bellied woodpecker. Heard and observed red-shouldered hawk and Northern cardinals.
5	0745	Heard Florida sandhill cranes. Heard and observed red-shouldered hawk.
6	0805	Heard Carolina wren, blue-gray gnatcatcher, red-shouldered hawk, and great crested flycatcher.
7	0825	Heard red-bellied woodpecker, blue-gray gnatcatcher, and mourning dove.
8	0845	Heard mourning dove, common ground dove, Northern cardinal, and white-eyed vireo.
9	0905	Heard and observed great crested flycatcher, red-bellied woodpecker, Carolina wren, and Northern cardinal.
10	0920	Heard red-shouldered hawk and white-eyed vireo.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 3, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 50 percent, wind east-northeast at 0-5 mph, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Cloud cover 80 percent, wind east at 5-10 mph, and temperature in the upper 70s

Observer: Lauren Edinger

Station	Time	Field Notes
1	0630	Heard Northern cardinal, red-shouldered hawk, red-bellied woodpecker, common ground dove, and blue-gray gnatcatcher.
2	0652	Heard Northern cardinal, Southern cricket frog, mourning dove, and common ground dove.
3	0713	Heard mourning dove, blue-gray gnatcatcher, Northern cardinal, red-bellied woodpecker, red-shouldered hawk, and common ground dove.
4	0737	Heard mourning doves, Northern cardinal, squirrel treefrog, red-shouldered hawk, Florida sandhill cranes, common ground dove, and blue-gray gnatcatcher.
5	0754	Heard red-shouldered hawk, Eastern meadowlark, Florida sandhill cranes, common ground dove, and blue-gray gnatcatcher. Heard and observed mourning dove and red-bellied woodpecker.
6	0815	Heard squirrel treefrog. Heard and observed mourning dove and red-bellied woodpecker.
7	0852	Heard common ground dove, blue-gray gnatcatcher, squirrel treefrog, and red-shouldered hawk. Heard and observed mourning dove.
8	0909	Heard Eastern meadowlark. Observed red-shouldered hawk and swallow-tailed kite.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 60 percent, calm wind, and temperature in the upper 60s

End time of survey: 0935 **Weather conditions:** Cloud cover 90 percent, wind east at 10-15 mph, and temperature in the low 80s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Observed wild vulture. Heard and observed Eastern meadowlark.
2	0650	Observed red-shouldered hawk and mourning doves.
3	0715	Observed bald eagle. Heard and observed downy woodpecker.
4	0730	Observed blue-gray gnatcatcher and juvenile bald eagle.
5	0750	Heard Carolina wren. Observed common grackle and great blue heron.
6	0810	Heard and observed red-bellied woodpecker and Carolina wren.
7	0850	Heard common ground dove. Observed Carolina wren.
8	0910	Heard and observed Northern cardinal.
9	0930	Observed mourning doves. Heard and observed Carolina wren.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Cloud cover 100 percent, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 25 percent, wind east at 10-15 mph, and temperature in the low 80s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0630	Heard red-shouldered hawk and Southern cricket frog. Observed anhingas.
2	0645	Heard blue-gray gnatcatcher. Observed mourning dove and common grackle.
3	0700	Heard red-shouldered hawk, mourning dove, and Northern cardinal. Observed female Northern cardinal, blue-gray gnatcatcher, boat-tailed grackle, and tri-colored herons.
4	0725	Heard hairy woodpecker. Observed glossy ibis. Heard and observed Northern cardinal.
5	0740	Heard red-bellied woodpecker and Carolina wren. Observed white ibis. Heard and observed blue-gray gnatcatcher.
6	0800	Heard red-shouldered hawk and black-bellied whistling ducks. Observed boat-tailed grackles. Heard and observed red-bellied woodpecker and fish crow.
7	0820	Heard red-bellied woodpecker, mourning doves, and blue-gray gnatcatcher. Observed great egret and snowy egret. Observed Florida panther tracks. Heard and observed blue-gray gnatcatcher.
8	0835	Observed black vultures, great egret, little blue heron, snowy egret, and mourning doves.
9	0900	Heard blue-gray gnatcatcher and mourning dove. Observed crested caracara perching with black vultures. Observed turkey vultures.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 4, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 90 percent, calm wind, and temperature in the upper 60s

End time of survey: 0925 **Weather conditions:** Cloud cover 75 percent, wind east at 10-15 mph, and temperature in the low 80s

Observer: Lauren Edinger

Station	Time	Field Notes
1	0630	Heard Eastern meadowlark, Southern cricket frogs, Northern cardinal, squirrel treefrog, blue-gray gnatcatcher, and Florida sandhill cranes. Observed white ibis. Heard and observed mourning doves, red-shouldered hawk, and red-bellied woodpeckers.
2	0650	Heard red-bellied woodpecker, Florida sandhill crane, Northern cardinal, mourning dove, Eastern meadowlark, red-shouldered hawk, and blue-gray gnatcatcher. Observed great crested flycatcher and a pair of red-shouldered hawks.
3	0710	Heard blue-gray gnatcatcher, Eastern meadowlark, and red-shouldered hawk. Observed black-bellied whistling ducks. Heard and observed common grackle and Northern cardinal.
4	0730	Heard blue-gray gnatcatcher, common ground dove, and mourning dove. Observed swallow-tailed kite and black-bellied whistling ducks. Heard and observed red shouldered hawks and Northern cardinal.
5	0750	Heard common ground dove, squirrel treefrogs, Northern cardinal, and Florida sandhill cranes. Heard and observed mourning dove, red-bellied woodpecker, and red-shouldered hawk.
6	0830	Heard common ground doves, mourning doves, red-bellied woodpeckers, and blue-gray gnatcatcher. Heard and observed Northern parula.
7	0850	Heard Florida sandhill cranes, common ground dove, and blue-gray gnatcatcher. Observed swallow-tailed kite. Heard and observed red-bellied woodpecker.

Station	Time	Field Notes
8	0910	Heard great crested flycatcher, Northern cardinal, blue-gray gnatcatcher, and mourning doves. Observed turkey vultures. Heard and observed red-shouldered hawk.
	0925	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 5, 2014
Survey Transect: A
Start time of survey: 0620 **Weather conditions:** High clouds, calm wind, and temperature in the upper 60s

End time of survey: 0920 **Weather conditions:** Cloud cover 20 percent, wind east-southeast at 5-10 mph, and temperature in the low 80s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0620	Heard blue-gray gnatcatcher, Northern cardinal, mourning dove, pine warbler, downy woodpecker, and red-shouldered hawk. Heard and observed common grackles and red-bellied woodpecker.
2	0635	Heard Carolina wren, Florida sandhill crane, mourning dove, red-bellied woodpecker, and blue-gray gnatcatcher. Heard and observed common grackles.
3	0655	Heard red-bellied woodpecker, mourning dove, Carolina wren, and pine warbler.
4	0715	Heard mourning dove, Northern parula, and Carolina wren.
5	0730	Heard pileated woodpecker, mourning dove, Carolina wren, and red-bellied woodpecker.
6	0740	Heard blue jay, Northern cardinal, Florida sandhill crane, red-shouldered hawk, Carolina wren, and red-bellied woodpecker.
Delay due to gate lock problems.		
7	0909	Heard mourning dove, Eastern meadowlark, red-bellied woodpecker, and Carolina wren.
8	0915	Heard and observed mourning doves and Northern cardinal.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 5, 2014
Survey Transect: B
Start time of survey: 0615 **Weather conditions:** Cloud cover 5 percent, calm wind, and temperature in the upper 60s

End time of survey: 0915 **Weather conditions:** Cloud cover 10 percent, wind east-southeast at 5-10 mph, and temperature in the low 80s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0615	Heard Northern cardinal, Carolina wren, red-bellied woodpecker, and blue-gray gnatcatcher. Heard and observed barred owl.
2	0630	Heard Northern cardinal. Observed mourning doves, Florida sandhill cranes, caracara flying south-southeast, and red-shouldered hawk. Heard and observed blue-gray gnatcatcher.
3	0700	Heard white-eyed vireo. Observed white ibis and glossy ibis. Heard and observed blue-gray gnatcatcher, red-shouldered hawk, and Northern cardinal.
4	0715	Heard common grackle. Heard and observed blue-gray gnatcatcher.
5	0725	Observed Northern cardinal, boat-tailed grackle, and blue-gray gnatcatcher. Heard and observed common ground dove.
6	0745	Observed black-bellied whistling ducks, mourning dove, and blue-gray gnatcatcher.
7	0800	Observed Florida panther tracks on the berm. Observed glossy ibis. Heard and observed red-shouldered hawk and blue-gray gnatcatcher.
8	0825	Heard pig frog and mourning dove. Observed black vultures, Florida black bear tracks, and Florida panther tracks.
9	0845	Heard Carolina wren. Observed black-bellied whistling ducks, pileated woodpecker, and red-shouldered hawk.
10	0900	Heard blue-gray gnatcatcher, red-shouldered hawk, and boat-tailed grackles. Observed great egret. Heard and observed brown thrasher.
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 5, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 25 percent, calm wind, and temperature in the upper 60s

End time of survey: 0920 **Weather conditions:** Cloud cover 5 percent, wind east-southeast at 5-10 mph, and temperature in the low 80s

Observer: Lauren Edinger

Station	Time	Field Notes
1	0630	Heard pileated woodpecker, mourning dove, Northern cardinal, common ground dove, Eastern meadowlark, red-shouldered hawk, and squirrel treefrog. Heard and observed red-bellied woodpecker.
2	0700	Heard common ground dove, squirrel treefrog, Northern cardinal, mourning dove, Eastern meadowlark, Florida sandhill crane, and pileated woodpecker.
3	0720	Heard mourning dove, squirrel treefrog, red-shouldered hawk, common ground dove, Eastern meadowlark, and pileated woodpecker. Heard and observed red-bellied woodpecker.
4	0736	Heard squirrel treefrog, common ground dove, red-bellied woodpecker, pileated woodpecker, Florida sandhill cranes, and Northern cardinal.
5	0753	Heard Northern cardinal, black-bellied whistling duck, pileated woodpecker, squirrel treefrog, red-bellied woodpecker, and mourning dove.
6	0823	Heard mourning dove, squirrel treefrog, common ground dove, Northern cardinal, and red-bellied woodpeckers.
7	0845	Heard common ground dove, squirrel treefrog, blue-gray gnatcatcher, pileated woodpecker, Northern cardinal, red-bellied woodpeckers, and red-shouldered hawk. Observed swallow-tailed kites.
8	0905	Heard red-shouldered hawk, squirrel treefrog, and mourning dove. Observed Northern cardinal and black vultures.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2014
Survey Transect: A
Start time of survey: 0625 **Weather conditions:** High clouds, calm wind, and temperature in the low 70s

End time of survey: 0920 **Weather conditions:** Cloud cover 10 percent, wind north at 0-5 mph, and temperature in the upper 80s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0625	Heard Northern cardinal, white-eyed vireo, red-bellied woodpecker, downy woodpecker, red-shouldered hawk, and blue-gray gnatcatcher. Heard and observed barred owl.
2	0640	Heard white-eyed vireo, downy woodpecker, pine warbler, red-shouldered hawk, and blue-gray gnatcatcher. Heard and observed mourning dove.
3	0655	Heard red-shouldered hawk, great crested flycatcher, and white-eyed vireo. Heard and observed mourning dove and blue-gray gnatcatcher.
4	0715	Heard Florida sandhill cranes, mourning doves, and pine warbler.
5	0730	Heard red-bellied woodpecker, red-shouldered hawk, Carolina wren, and Northern parula.
6	0740	Heard red-bellied woodpecker, Northern parula, mourning dove, and cattle.
7	0820	Heard mourning dove, Eastern meadowlark, Northern cardinal, and red-bellied woodpecker.
8	0835	Heard mourning dove. Heard and observed Eastern meadowlark and downy woodpecker.
9	0850	Heard red-bellied woodpecker, mourning dove, pine warbler, Carolina wren, and Northern cardinal. Observed great crested flycatcher.
10	0910	Heard mourning dove, Carolina wren, red-bellied woodpecker, and Northern flicker. Heard and observed downy woodpecker.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Clear sky, calm wind, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Cloud cover 10 percent, wind north at 0-5 mph, and temperature in the upper 80s

Observer: Melanie Metal

Station	Time	Field Notes
1	0630	Heard mourning dove and red-shouldered hawk. Observed little blue heron flying northeast. Heard and observed boat-tailed grackle.
2	0650	Heard Southern cricket frog and pileated woodpecker. Heard and observed boat-tailed grackle and red-shouldered hawk.
3	0703	Observed mourning dove. Heard and observed palm warbler.
4	0725	Heard red-bellied woodpecker and mourning dove. Observed glossy ibis flying southwest. Heard and observed red-shouldered hawk.
5	0740	Heard mourning dove. Observed Northern cardinal and red-shouldered hawk. Heard and observed red-bellied woodpecker.
6	0750	Heard red-bellied woodpecker and mourning dove. Observed tri-colored heron.
7	0815	Heard mourning dove.
8	0835	Heard mourning dove. Observed great egret, glossy ibis, white ibis in the farm field, red-bellied woodpecker, turkey vulture, and American robin.
9	0850	Heard boat-tailed grackle and mourning dove. Observed turkey vulture.
10	0915	Observed great egret, white ibis flying northwest, and American robin.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 6, 2014
Survey Transect: C
Start time of survey: 0620 **Weather conditions:** Cloud cover 5 percent, calm wind, and temperature in the low 70s

End time of survey: 0920 **Weather conditions:** Cloud cover 20 percent, wind north at 0-5 mph, and temperature in the upper 80s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0620	Heard Florida sandhill cranes, Southern cricket frog, red-shouldered hawk, and blue-gray gnatcatchers. Observed black vultures. Heard and observed mourning doves.
2	0635	Heard mourning doves. Observed black-bellied whistling ducks, great egrets, and Northern cardinal.
3	0710	Heard Carolina wren. Observed turkey vulture, pileated woodpecker, and black-bellied whistling duck.
4	0730	Heard green treefrog, mourning doves, Northern cardinal, barking treefrog, red-shouldered hawk, blue-gray gnatcatcher, and Florida sandhill cranes. Heard and observed black-bellied whistling ducks.
5	0750	Heard green treefrog, mourning dove, and red-shouldered hawk. Observed Northern cardinal.
6	0805	Heard green tree frog, Southern cricket frog, and red-bellied woodpecker. Heard and observed blue-gray gnatcatcher.
7	0825	Heard mourning dove and blue-gray gnatcatcher. Heard and observed Northern cardinal.
8	0850	Observed common ground dove, red-shouldered hawk, and turkey vulture. Heard and observed blue-gray gnatcatcher and hairy woodpecker.
9	0910	Observed turkey vulture and cattle egrets.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 9, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Very foggy sky, calm wind, and temperature in the low 70s

End time of survey: 0935 **Weather conditions:** Cloud cover 75 percent, calm wind, and temperature in the low 80s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard mourning doves, Carolina wren, and green treefrog.
2	0650	Heard downy woodpecker and Northern cardinal. Observed juvenile bald eagle.
3	0715	Observed red-shouldered hawk and blue-gray gnatcatcher.
4	0735	Heard Northern cardinal and squirrel treefrog. Heard and observed white-eyed vireo.
5	0800	Observed turkey vultures. Heard and observed pileated woodpecker and common ground dove.
6	0815	Heard Carolina wren. Observed red-shouldered hawk.
7	0850	Heard Northern cardinal. Heard and observed great crested flycatcher.
8	0910	Observed common ground dove, Carolina wren, and adult bald eagle.
9	0925	Observed wild turkeys, mourning doves, and Northern cardinal.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 9, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** High clouds, calm wind, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Cloud cover 10 percent, calm wind, and temperature in the low 80s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0630	Heard white-eyed vireo, red-shouldered hawk, Northern cardinal, and Northern parula. Heard and observed mourning dove.
2	0650	Heard red-bellied woodpecker and red-shouldered hawk. Heard and observed Northern cardinal.
3	0710	Heard Carolina wren, red-bellied woodpecker, and Northern cardinal.
4	0730	Heard white-eyed vireo, red-shouldered hawk, and Northern cardinal.
5	0750	Heard white-eyed vireo, blue-gray gnatcatcher, Northern cardinal, and Carolina wren.
6	0810	Heard white-eyed vireo, common ground dove, Northern parula, and red-shouldered hawk.
7	0830	Heard barred owl, red-bellied woodpecker, and Carolina wren. Heard and observed Northern cardinal.
8	0850	Heard white-eyed vireo, Northern cardinal, mourning dove, red-shouldered hawk, and common ground dove.
9	0905	Heard blue-gray gnatcatcher, pileated woodpecker, mourning dove, red-shouldered hawk, and common ground dove. Observed five river otters.
10	0920	Heard red-bellied woodpecker, mourning dove, red-shouldered hawk, and Northern cardinal. Heard and observed common grackle.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 9, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 100 percent, heavy fog, calm wind, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Cloud cover 40 percent, calm wind, and temperature in the low 80s

Observer: Lauren Edinger

Station	Time	Field Notes
1	0630	Heard Southern cricket frogs, squirrel treefrogs, mourning dove, blue-gray gnatcatcher, Eastern meadowlark, common ground dove, and red-bellied woodpecker.
2	0655	Heard Southern cricket frogs, common ground dove, and Northern cardinal. Heard and observed red-bellied woodpecker, black-bellied whistling ducks, and mourning dove.
3	0710	Heard Southern cricket frogs, common ground dove, squirrel treefrogs, and red-bellied woodpecker. Heard and observed mourning doves.
4	0730	Heard common ground dove, mourning doves, Northern cardinal, squirrel treefrog, Florida sandhill crane, and wild turkey. Heard and observed red-shouldered hawk and pileated woodpecker.
5	0750	Heard squirrel treefrogs, mourning doves, Northern cardinal, Cuban treefrog, red-bellied woodpecker, red-shouldered hawk, and Florida sandhill crane. Heard and observed pileated woodpecker and black-bellied whistling ducks.
6	0810	Heard squirrel treefrog, Northern cardinal, common ground dove, Florida sandhill crane, pileated woodpecker, and blue-gray gnatcatcher. Heard and observed red-shouldered hawk.
7	0830	Heard common ground dove, mourning dove, blue-gray gnatcatcher, pileated woodpecker, squirrel treefrogs, and Cuban treefrog.
8	0905	Heard common ground doves, pileated woodpecker, squirrel treefrog, Northern cardinal, and mourning dove. Heard and observed black-bellied whistling ducks.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 10, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 30 percent, calm wind, and temperature in the upper 60s

End time of survey: 0935 **Weather conditions:** Cloud cover 50 percent, calm wind, and temperature in the mid 80s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Observed Northern cardinal and black-bellied whistling ducks.
2	0645	Heard Carolina wren. Heard and observed red-bellied woodpeckers.
3	0705	Observed male and female adult bald eagles on roost trees. Heard and observed great crested flycatcher and downy woodpecker.
4	0745	Heard blue-gray gnatcatcher. Observed red-shouldered hawk.
5	0805	Heard common ground doves. Observed Northern cardinal and boat-tailed grackles. Heard and observed downy woodpeckers.
6	0830	Heard and observed swallow-tailed kites and mourning doves.
7	0850	Heard and observed Carolina wren and Northern cardinal.
8	0910	Observed wild turkey and Florida sandhill cranes. Heard and observed downy woodpecker.
9	0930	Heard and observed common ground doves, Carolina wrens, and pileated woodpecker.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 10, 2014
Survey Transect: B
Start time of survey: 0625 **Weather conditions:** Cloud cover 70 percent, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 50 percent, calm wind, and temperature in the mid 80s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0625	Heard mourning dove and red-bellied woodpecker. Observed great egret. Heard and observed common grackles and white ibis.
2	0640	Heard white-eyed vireo, mourning dove, Northern cardinal, Northern parula, and red-bellied woodpecker. Heard and observed blue-gray gnatcatcher.
3	0700	Heard Northern cardinal, common ground dove, red-bellied woodpecker, Florida sandhill cranes, and white-eyed vireo. Observed red-shouldered hawk.
4	0720	Heard Carolina wren, red-bellied woodpecker, and red-shouldered hawk. Heard and observed common grackles and blue-gray gnatcatcher.
5	0740	Heard Carolina wren, Northern parula, and red-bellied woodpecker.
6	0800	Heard great crested flycatcher and Northern cardinal. Heard and observed red-shouldered hawk.
7	0820	Heard Florida sandhill cranes and white-eyed vireo. Heard and observed blue-gray gnatcatcher, mourning dove, and Northern cardinal.
8	0840	Heard mourning doves and pileated woodpecker. Heard and observed Northern cardinal.
9	0858	Heard red-shouldered hawk.
10	0915	Heard fish crow. Heard and observed Northern cardinals.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 10, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 60 percent, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 30 percent, calm wind, and temperature in the mid 80s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0630	Heard mourning dove, barred owl, blue-gray gnatcatcher, pileated woodpecker, Florida sandhill crane, Southern cricket frog, red-bellied woodpecker, and green tree frog. Observed swallow-tailed kite, boat-tailed grackle, and snowy egrets.
2	0645	Heard mourning dove, red-shouldered hawk, and Eastern meadowlark.
3	0710	Heard green treefrog, Southern cricket frog, mourning dove, and blue-gray gnatcatcher. Heard and observed black-bellied whistling duck.
4	0725	Heard mourning doves and green treefrog. Observed common ground dove. Heard and observed black-bellied whistling duck.
5	0740	Heard green treefrog. Observed mourning doves. Heard and observed Carolina wrens and black-bellied whistling ducks.
6	0800	Heard mourning doves and green treefrog. Observed white ibis and common ground doves. Heard and observed black-bellied whistling ducks.
7	0820	Heard green treefrog, Southern cricket frog, Florida sandhill cranes, Carolina wren, and blue-gray gnatcatcher. Observed black vulture. Heard and observed mourning doves.
8	0845	Heard green treefrog and common yellowthroat. Observed red-bellied woodpecker and swallow-tailed kites.
9	0900	Heard Northern mockingbird. Observed swallow-tailed kite, black vultures, mourning dove, turkey vulture, and circling woodstork.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Partly cloudy sky, light fog, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Clear sky, wind south at 5-10 mph, and temperature in the low 80s

Observer: Matt Brosious

Station	Time	Field Notes
1	0630	Heard red-bellied woodpecker, Northern cardinal, white-eyed vireo, Carolina wren, and blue-gray gnatcatcher.
2	0645	Heard pileated woodpecker, red-shouldered hawk, downy woodpecker, and pine warbler.
3	0700	Heard pine warbler, white-eyed vireo, red-bellied woodpecker, mourning dove, and Northern cardinal. Observed red-shouldered hawk.
4	0715	Heard blue-gray gnatcatcher, mourning dove, white-eyed vireo, and pine warbler. Observed cattle egrets.
5	0730	Heard pine warbler, red-bellied woodpecker, red-shouldered hawk, Northern parula, Carolina wren, Northern cardinal, and white-eyed vireo.
6	0745	Heard Northern cardinal and Carolina wren. Observed cattle egrets and blue-gray gnatcatcher.
7	0800	Heard Carolina wren, blue-gray gnatcatcher, white-eyed vireo, Northern parula, pine warbler, and mourning dove.
8	0815	Heard Carolina wren and blue-gray gnatcatcher. Observed red-bellied woodpecker, cattle egrets, swallow-tailed kite, and great crested flycatcher.
9	0830	Heard white-eyed vireo, red-bellied woodpecker, and blue-gray gnatcatcher. Observed black-bellied whistling ducks and swallow-tailed kites.
10	0845	Heard pileated woodpecker, red-bellied woodpecker, and Northern cardinal.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2014
Survey Transect: B
Start time of survey: 0620 **Weather conditions:** Cloud cover 15 percent, calm wind, and temperature in the upper 60s

End time of survey: 0920 **Weather conditions:** Cloud cover 20 percent, wind south at 5-10 mph, and temperature in the low 80s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0620	Observed green heron, great egrets, and red-shouldered hawk. Heard and observed Northern cardinal and Carolina wren.
2	0635	Observed black-bellied whistling duck, boat-tailed grackle, common ground doves, Northern cardinal, red-shouldered hawk, and blue-gray gnatcatcher.
3	0655	Heard red-winged blackbird and gray catbird. Observed little blue heron, tri-colored heron, common grackle, black-bellied whistling ducks, and pileated woodpeckers. Heard and observed brown creeper.
4	0710	Heard and observed red-shouldered hawk and Northern cardinals.
5	0725	Heard and observed Northern cardinal, summer tanager, and blue-gray gnatcatcher.
6	0740	Heard blue-gray gnatcatcher, pileated woodpecker, and Carolina wren. Observed white ibis and great egret.
7	0755	Heard Florida sandhill cranes, green treefrog, and red-bellied woodpecker. Observed boat-tailed grackle. Heard and observed Northern cardinal and red-shouldered hawk.
8	0815	Observed black vulture and Florida panther tracks.
9	0835	Observed great egret, glossy ibis, and Florida panther tracks. Heard and observed red-bellied woodpecker, hairy woodpeckers, Northern cardinal, mourning doves, black-bellied whistling ducks, red-shouldered hawk, and black-necked stilt.

Station	Time	Field Notes
10	0850	Observed ruby-throated hummingbird. Heard and observed Northern cardinal, boat-tailed grackle, red-bellied woodpeckers, and common ground doves.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 11, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 30 percent, calm wind, and temperature in the upper 60s

End time of survey: 0935 **Weather conditions:** Cloud cover 20 percent, wind south at 5-10 mph, and temperature in the low 80s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard common ground doves. Observed red-shouldered hawk.
2	0650	Observed mourning doves and preening turkey vultures.
3	0710	Heard Carolina wren. Observed white-eyed vireo.
4	0735	Observed Northern cardinal. Heard and observed blue-gray gnatcatcher.
5	0800	Heard wild turkey. Observed mourning doves.
6	0820	Observed ground doves. Heard and observed brown thrasher.
7	0850	Heard Carolina wren. Observed downy woodpecker.
8	0910	Heard greenhouse frog. Heard and observed white-eyed vireo.
9	0930	Observed Northern cardinal. Heard and observed Carolina wren.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 100 percent, light rain, wind south at 5-10 mph, and temperature in the low 70s

End time of survey: 0935 **Weather conditions:** Cloud cover 100 percent, no precipitation, wind south-southwest at 5-10 mph, and temperature in the mid 70s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard great crested flycatcher and Northern cardinal.
2	0650	Observed two adult bald eagles and roosting turkey vultures.
3	0715	Heard white-eyed vireo and Carolina wren. Observed boat-tailed grackles.
4	0735	Observed red-shouldered hawk. Heard and observed red-bellied woodpecker.
5	0755	Heard common ground doves. Heard and observed Carolina wren.
6	0815	Heard Northern parula and mourning doves. Heard and observed blue-gray gnatcatcher.
7	0850	Observed blue jay and juvenile bald eagle. Heard and observed red-bellied woodpecker.
8	0910	Heard Carolina wren. Heard and observed great crested flycatcher.
9	0930	Heard and observed downy woodpecker and Northern cardinal.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Overcast sky, light to moderate rain, wind south at 5-10 mph, and temperature in the low 70s

End time of survey: 0930 **Weather conditions:** Cloud cover 90 percent, no precipitation, wind south-southwest at 5-10 mph, and temperature in the mid 70s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0630	Heard Northern cardinal and red-shouldered hawk.
2	0645	Heard white-eyed vireo, blue-gray gnatcatcher, and common ground doves. Observed mourning dove.
3	0700	Heard red-bellied woodpecker. Heard and observed Northern cardinals, common grackles, and great crested flycatcher.
4	0715	Heard common grackles, mourning dove, and red-winged blackbird. Heard and observed Northern cardinals.
5	0730	Heard pileated woodpecker, Northern cardinal, white-eyed vireo, and Carolina wren.
6	0745	Heard red-bellied woodpecker, common ground dove, and Northern cardinal.
7	0800	Heard mourning dove, red-shouldered hawk, Northern cardinal, and red-bellied woodpecker.
8	0815	Heard mourning dove, red-bellied woodpecker, pileated woodpecker, red-shouldered hawk, Northern cardinal, and Carolina wren.
9	0835	Heard Northern parula, blue-gray gnatcatcher, and Carolina wren. Observed great egret and white ibis along field ditch. Heard and observed Northern cardinal and red-shouldered hawk.
10	0855	Heard Northern parula, Northern cardinals, red-winged blackbird, and red-shouldered hawk. Heard and observed mourning doves and red-bellied woodpecker.
11	0915	Heard red-shouldered hawk and Northern cardinals.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 12, 2014
Survey Transect: C
Start time of survey: 0640 **Weather conditions:** Cloud cover 100 percent, moderate precipitation through first hour of survey, wind south at 5-10 mph, and temperature in the low 70s

End time of survey: 0940 **Weather conditions:** Cloud cover 80 percent, no precipitation, wind south-southwest at 5-10 mph, and temperature in the mid 70s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0640	Heard mourning doves, green tree frog, and blue-gray gnatcatcher. Observed swallow-tailed kite.
2	0700	Heard green tree frog, Carolina wren, red-bellied woodpecker, and Southern cricket frog. Observed common ground dove. Heard and observed mourning doves.
3	0725	Heard green treefrog, mourning dove, Cuban treefrog, and blue-gray gnatcatcher. Observed common grackle and great egret.
4	0750	Heard green treefrog, Southern cricket frog, and mourning doves.
5	0810	Heard mourning doves, green treefrog, Southern cricket frog, Northern cardinal, Carolina wren, and barking treefrog. Heard and observed black-bellied whistling ducks.
6	0830	Heard Southern cricket frog, Northern cardinal, hairy woodpecker, red-bellied woodpecker, mourning doves, and blue-gray gnatcatchers.
7	0850	Heard mourning doves. Heard and observed black-bellied whistling ducks and Northern cardinal.
8	0915	Heard blue-gray gnatcatcher. Heard and observed mourning doves and red-shouldered hawk.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2014
Survey Transect: A
Start time of survey: 0600 **Weather conditions:** High clouds, calm wind, and temperature in the upper 60s

End time of survey: 0900 **Weather conditions:** Cloud cover 30 percent, wind south-southwest at 5-10 mph, and temperature in the mid 80s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0600	Heard Northern cardinals and mourning dove. Heard and observed black-bellied whistling duck overhead.
2	0620	Heard Carolina wren, mourning dove, and downy woodpecker. Observed red-shouldered hawk.
3	0640	Heard mourning dove, red-shouldered hawk, Carolina wren, great crested flycatcher, red-bellied woodpecker, and white-eyed vireo.
4	0700	Heard pileated woodpecker, Carolina wren, cattle, red-bellied woodpecker, Northern cardinal, and pine warbler. Heard and observed great egrets in flight.
5	0720	Heard red-bellied woodpecker, mourning dove, Northern parula, white-eyed vireo, and Carolina wren. Heard and observed red-shouldered hawk.
6	0740	Heard red-bellied woodpecker, Northern cardinal, white-eyed vireo, and mourning dove. Heard and observed downy woodpeckers.
7	0815	Heard Carolina wren, great crested flycatcher, and red-bellied woodpecker. Heard and observed Eastern meadowlark.
8	0830	Heard Eastern meadowlark, pileated woodpecker, Carolina wren, red-bellied woodpecker.
9	0845	Heard Eastern meadowlark and Northern cardinal. Heard and observed red-bellied woodpecker and downy woodpecker.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2014
Survey Transect: B
Start time of survey: 0615 **Weather conditions:** Cloud cover 20 percent, calm wind, and temperature in the upper 60s

End time of survey: 0815 **Weather conditions:** Cloud cover 20 percent, wind south-southwest at 5-10 mph, and temperature in the mid 80s

Observer: Lauren Edinger

Station	Time	Field Notes
1	0615	Heard pig frog, Cuban treefrog, Northern cardinal, and blue-gray gnatcatcher. Observed great egret. Heard and observed red-bellied woodpecker, mourning dove, red-shouldered hawk, black-bellied whistling ducks, and boat-tailed grackle.
2	0645	Heard Florida sandhill cranes, blue-gray gnatcatcher, and common ground dove. Heard and observed Northern cardinal, red-shouldered hawk, and red-bellied woodpecker.
3	0715	Heard blue-gray gnatcatcher, barred owl, Florida sandhill cranes, Northern cardinal, and mourning dove. Observed great crested flycatcher. Heard and observed red-shouldered hawk, red-bellied woodpecker, and common grackle.
4	0750	Heard red-bellied woodpecker, Northern cardinal, common grackles, and Eastern meadowlark. Heard and observed common ground dove.
	0815	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 13, 2014
Survey Transect: C
Start time of survey: 0600 **Weather conditions:** Clear sky, calm wind, and temperature in the upper 60s

End time of survey: 0905 **Weather conditions:** Cloud cover 30 percent, wind south-southwest at 5-10 mph, and temperature in the mid 80s

Observer: William R. Cox

Station	Time	Field Notes
1	0600	Heard mourning dove. Observed red-shouldered hawk.
2	0620	Heard common ground dove. Observed downy woodpecker.
3	0645	Heard white-eyed vireo and Carolina wren.
4	0705	Observed common grackles. Heard and observed Carolina wren.
5	0730	Heard Northern parula and white-eyed vireo.
6	0755	Heard and observed red-bellied woodpecker and Northern cardinal.
7	0820	Observed blue-gray gnatcatcher. Heard and observed Carolina wren.
8	0840	Heard and observed mourning dove and black-bellied whistling duck.
9	0900	Observed mourning doves and turkey vulture.
	0905	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 16, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 90 percent, calm wind, and temperature in the upper 60s

End time of survey: 0935 **Weather conditions:** Cloud cover 80 percent, light rain, wind northeast at 5-10 mph, and temperature in the upper 70s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard Carolina wren. Observed three Florida sandhill cranes.
2	0650	Observed great crested flycatcher. Heard and observed blue-gray gnatcatcher.
3	0715	Observed red-bellied woodpecker and juvenile bald eagle.
4	0740	Heard white-eyed vireo and Carolina wren. Observed mourning dove.
5	0800	Heard common ground dove. Observed Northern cardinal. Heard and observed downy woodpecker.
6	0815	Observed wood ducks, red-shouldered hawk, and mourning dove.
7	0855	Observed downy woodpecker. Heard and observed Eastern mockingbird.
8	0925	Observed great crested flycatcher. Heard and observed pileated woodpecker and black-bellied whistling duck.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 16, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** High cloud cover, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** High cloud cover, wind northeast at 5-10 mph, and temperature in the upper 70s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0630	Heard Northern cardinal, great crested flycatcher, Carolina wren, and red-shouldered hawk.
2	0650	Heard pileated woodpecker, red-bellied woodpecker, white-eyed vireo, and Northern cardinal.
3	0710	Heard red-bellied woodpecker, Northern cardinal, white-eyed vireo, and mourning dove.
4	0730	Heard mourning dove, common ground dove, and red-bellied woodpecker.
5	0750	Heard Carolina wren, blue-gray gnatcatcher, red-bellied woodpecker, red-shouldered hawk, pileated woodpecker, and Northern cardinal. Heard and observed mourning dove.
6	0810	Heard Northern cardinal, red-bellied woodpecker, and Carolina wren. Observed common ground dove.
7	0830	Heard white-eyed vireo and blue-gray gnatcatcher. Heard and observed mourning doves.
8	0850	Heard red-shouldered hawk, Northern cardinal, pileated woodpecker, and Florida sandhill cranes.
9	0910	Heard red-bellied woodpecker and Northern parula. Observed black-bellied whistling ducks in the field. Heard and observed Northern cardinal.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 16, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 30 percent, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 40 percent, wind northeast at 5-10 mph, and temperature in the upper 70s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0630	Heard mourning doves, barred owl, red-shouldered hawk, and Carolina wren. Observed swallow-tailed kite, black vulture, and great egret. Heard and observed black-bellied whistling duck.
2	0645	Heard Southern cricket frog and red-shouldered hawk. Heard and observed mourning doves and pileated woodpecker.
3	0715	Observed black vulture. Heard and observed Northern cardinal.
4	0730	Heard Southern cricket frog and green treefrog. Heard and observed Northern cardinal and mourning doves.
5	0745	Heard Northern cardinal, red-bellied woodpecker, and green treefrog. Heard and observed black-bellied whistling ducks and red-shouldered hawk.
6	0805	Heard mourning doves. Observed black-bellied whistling duck. Heard and observed Northern cardinal and common ground dove.
7	0825	Observed summer tanagers, glossy ibis, black-bellied whistling duck, and red-bellied woodpecker. Heard and observed mourning dove, Northern cardinal, and pileated woodpecker.
8	0855	Heard common grackle. Observed black-bellied whistling ducks and swallow-tailed kite.
9	0910	Observed swallow-tailed kite.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 17, 2014
Survey Transect: A
Start time of survey: 0630 **Weather conditions:** Cloud cover 20 percent, calm wind, and temperature in the upper 60s

End time of survey: 0935 **Weather conditions:** Cloud cover 50 percent, wind east-northeast at 5-10 mph, and temperature in the low 80s

Observer: William R. Cox

Station	Time	Field Notes
1	0630	Heard common ground dove. Observed two adult bald eagles. Heard and observe pine warbler.
2	0650	Observed great crested flycatcher. Heard and observed mourning dove.
3	0710	Heard Carolina wren. Observed Northern cardinal and Cooper's hawk.
4	0750	Heard and observed blue-gray gnatcatcher and downy woodpecker.
5	0805	Observed turkey vulture and 15 white ibis flying overhead. Heard and observed Carolina wren.
6	0825	Observed white-eyed vireo and red-shouldered hawk.
7	0845	Observed Northern cardinal. Heard and observed pileated woodpecker.
8	0905	Heard and observed Carolina wren and red-bellied woodpecker.
9	0930	Heard green treefrog. Observed downy woodpecker, blue jay, and great crested flycatcher. Heard and observed Northern bobwhite.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 17, 2014
Survey Transect: B
Start time of survey: 0630 **Weather conditions:** Cloud cover 20 percent, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 25 percent, wind east-northeast at 5-10 mph, and temperature in the low 80s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0630	Heard white-eyed vireo, mourning dove, and red-shouldered hawk.
2	0650	Heard Northern cardinal, red-bellied woodpecker, Carolina wren, blue-gray gnatcatcher, mourning dove, common grackle, red-shouldered hawk, and white-eyed vireo.
3	0710	Heard common ground dove and red-shouldered hawk. Heard and observed Northern cardinal and great crested flycatcher.
4	0730	Heard Northern parula, red-shouldered hawk, mourning dove, red-winged blackbird, and Carolina wren. Heard and observed blue-gray gnatchers, Northern cardinal, and red-bellied woodpecker.
5	0750	Heard downy woodpecker, red-shouldered hawk, and red-bellied woodpecker. Heard and observed Northern cardinal.
6	0810	Heard red-bellied woodpecker and Northern parula. Heard and observed downy woodpecker.
7	0830	Heard red-bellied woodpecker, Northern cardinal, and pileated woodpecker. Observed red-shouldered hawk. Heard and observed blue-gray gnatcatcher.
8	0850	Heard Northern cardinal and common ground dove. Heard and observed mourning dove.
9	0910	Heard mourning dove, Northern cardinal, and red-bellied woodpecker. Observed red-shouldered hawk, black-bellied whistling ducks along the ditch, and Northern cardinal.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: June 17, 2014
Survey Transect: C
Start time of survey: 0630 **Weather conditions:** Cloud cover 25 percent, calm wind, and temperature in the upper 60s

End time of survey: 0930 **Weather conditions:** Cloud cover 10 percent, wind east-northeast at 5-10 mph, and temperature in the low 80s

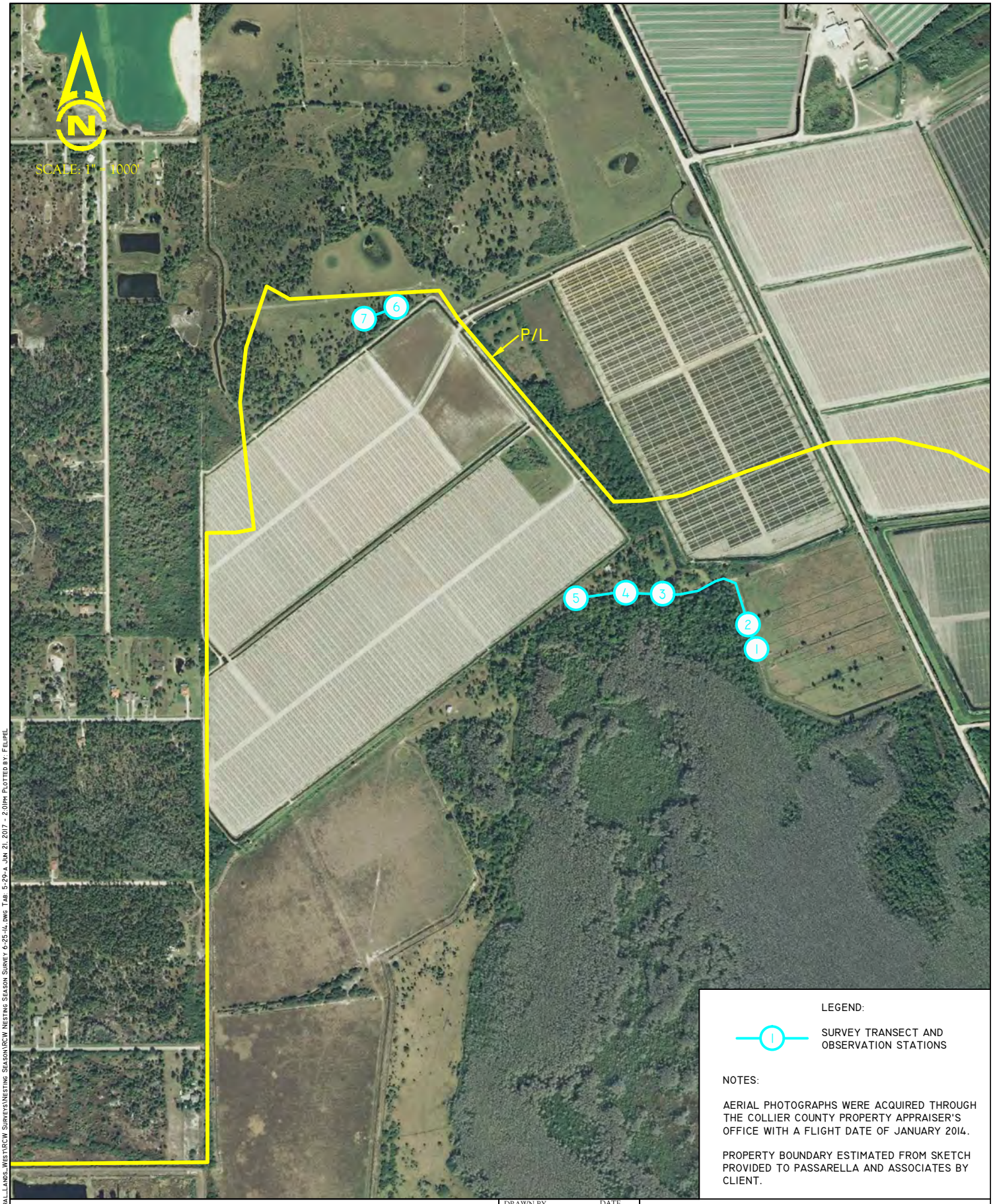
Observer: Sabrina Lartz

Station	Time	Field Notes
1	0630	Heard mourning doves. Heard and observed black-bellied whistling ducks and blue-gray gnatcatcher.
2	0650	Heard and observed mourning doves.
3	0715	Heard blue-gray gnatcatcher. Observed common grackles. Heard and observed hairy woodpecker and red-bellied woodpecker.
4	0745	Heard mourning dove. Heard and observed Northern cardinal, black-bellied whistling ducks, and hairy woodpecker.
5	0810	Heard mourning dove and green treefrog. Observed pileated woodpecker. Heard and observed black-bellied whistling ducks.
6	0825	Heard Florida sandhill cranes, mourning doves, and Southern cricket frog. Heard and observed pileated woodpecker and blue-gray gnatcatchers.
7	0845	Observed black-bellied whistling ducks, red-shouldered hawk, and swallow-tailed kites.
8	0900	Observed loggerhead shrike and Florida sandhill cranes.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

APPENDIX F

RCW NESTING SEASON FORAGING SURVEY
MAPS WITH STATION NUMBERS



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

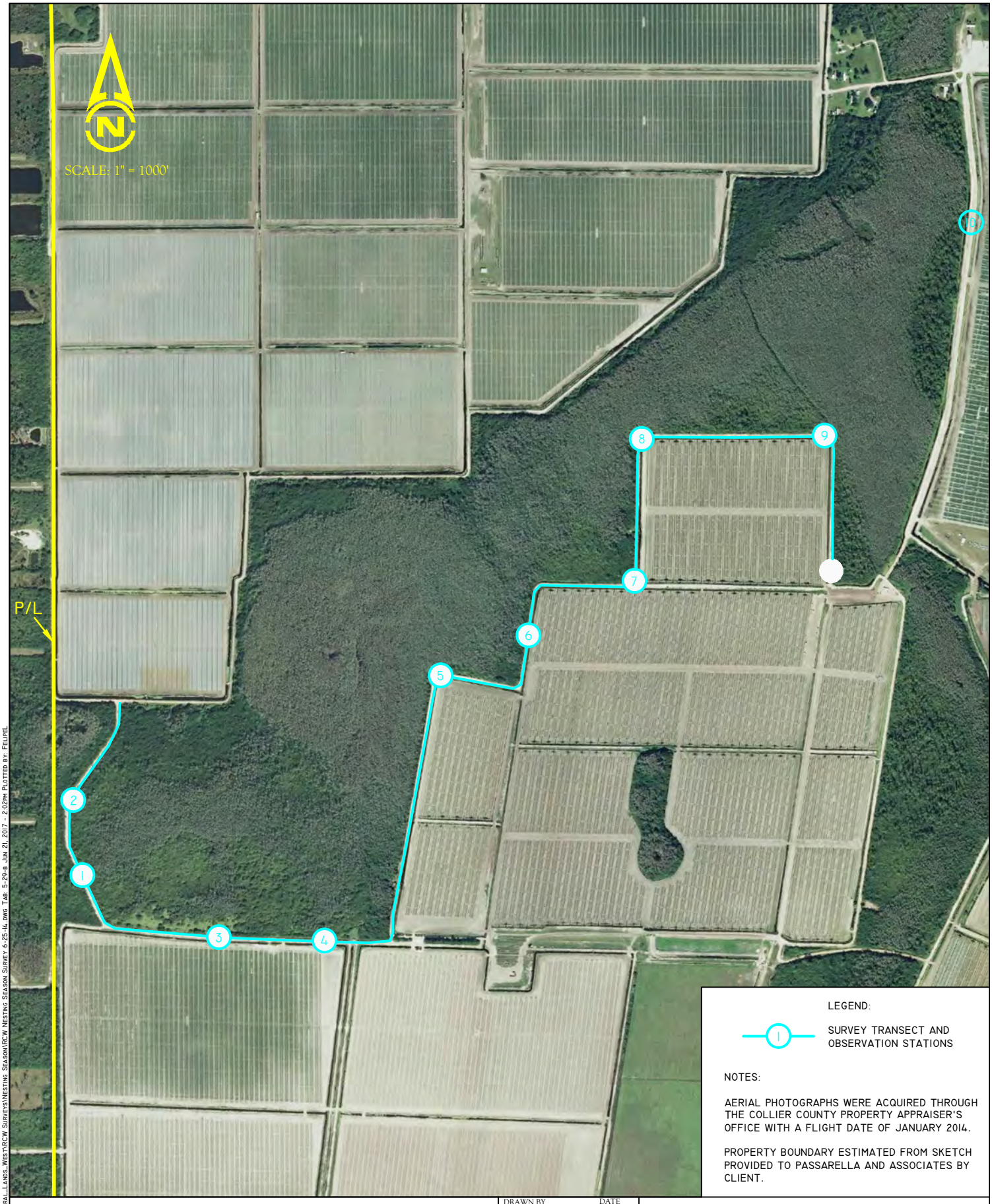
TOWN OF BIG CYPRESS - SURVEY AREA "A"

DATE: MAY 29, 2014

DRAWN BY	D.B.	DATE	6/19/14
REVIEWED BY	C.G.R.	DATE	6/19/14
REVISED		DATE	

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 5-29-A Jun 21, 2017 - 2:01pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

TOWN OF BIG CYPRESS SURVEY AREA "B"

DATE: MAY 29, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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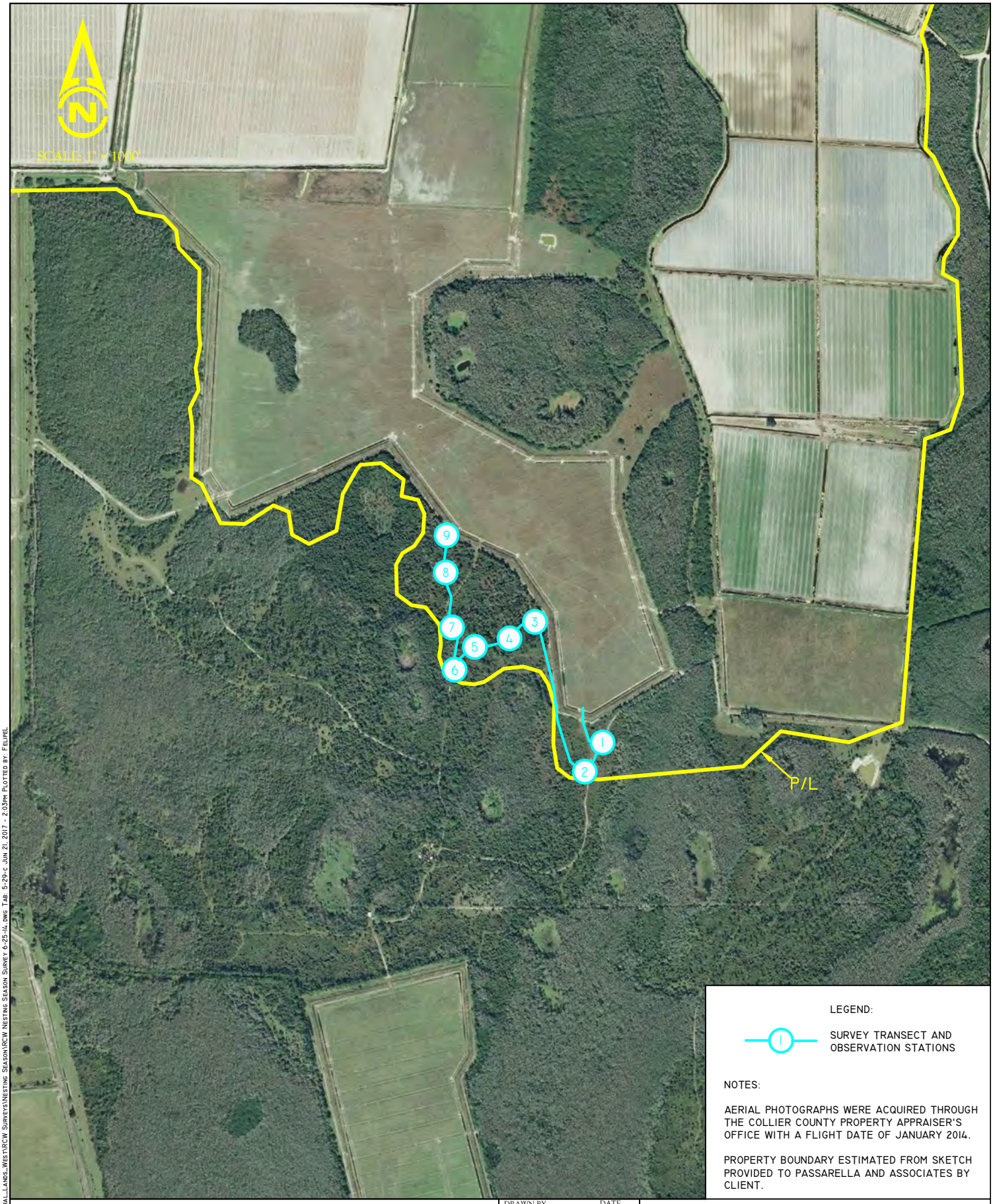

LEGEND:

1 — SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

TOWN OF BIG CYPRESS - SURVEY AREA "C"

DATE: MAY 29, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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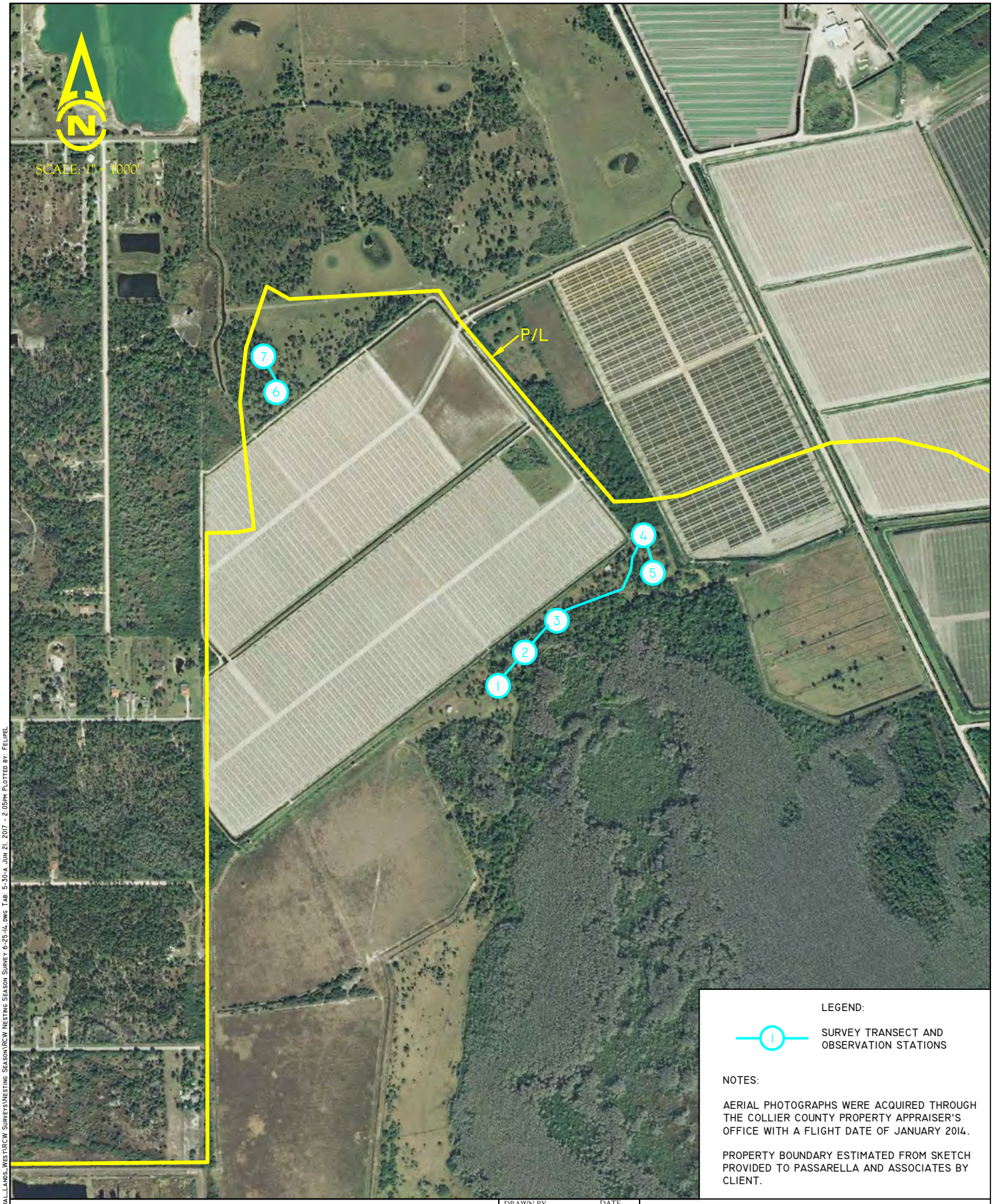


LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

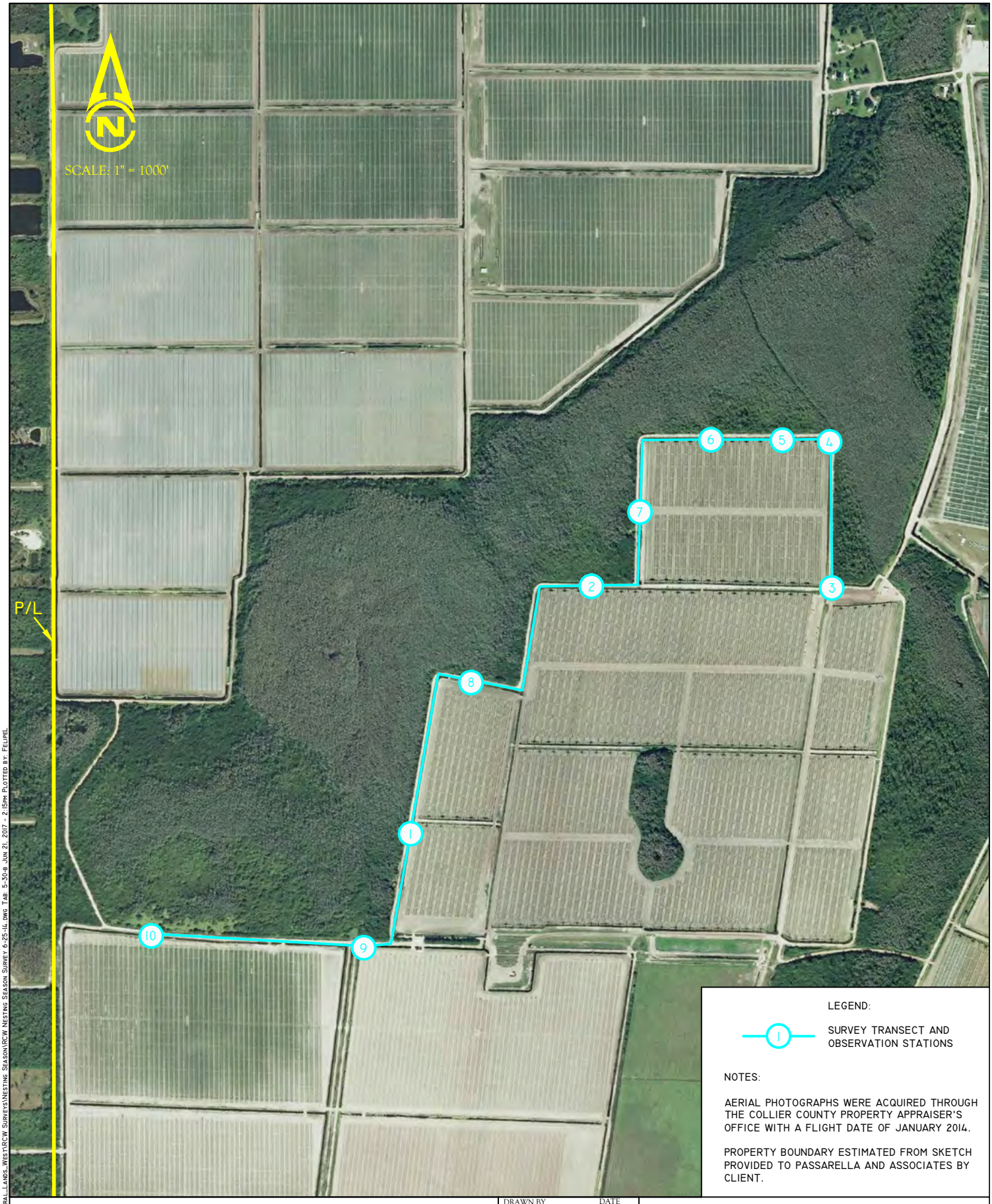
TOWN OF BIG CYPRESS - SURVEY AREA "A"

DATE: MAY 30, 2014

	DRAWN BY	DATE
	D.B.	6/19/14
	REVIEWED BY	DATE
	C.G.R.	6/19/14
	REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 5-30-a Jun 21, 2017 - 2:05pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

TOWN OF BIG CYPRESS SURVEY AREA "B"

DATE: MAY 30, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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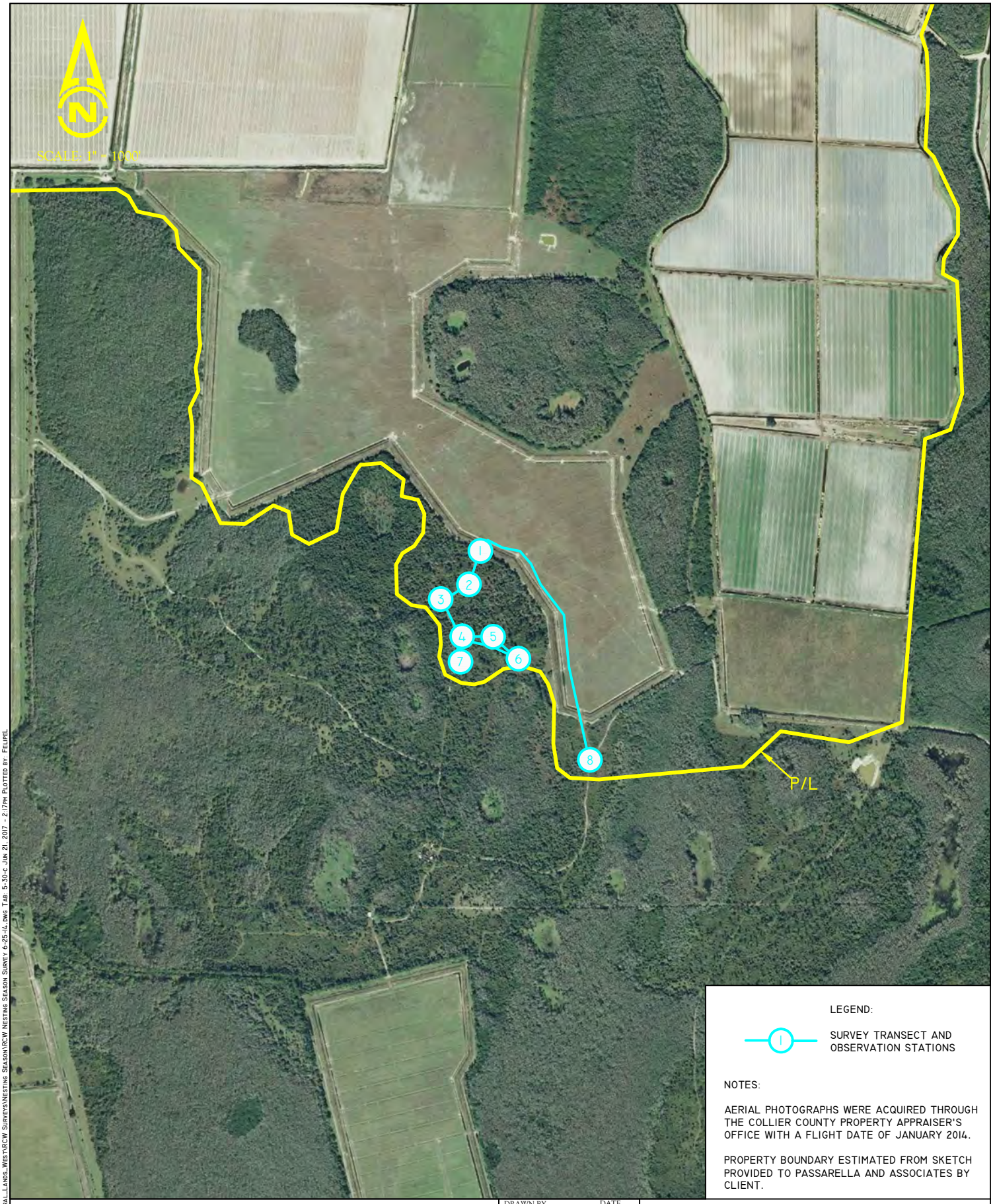

LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

TOWN OF BIG CYPRESS - SURVEY AREA "C"

DATE: MAY 30, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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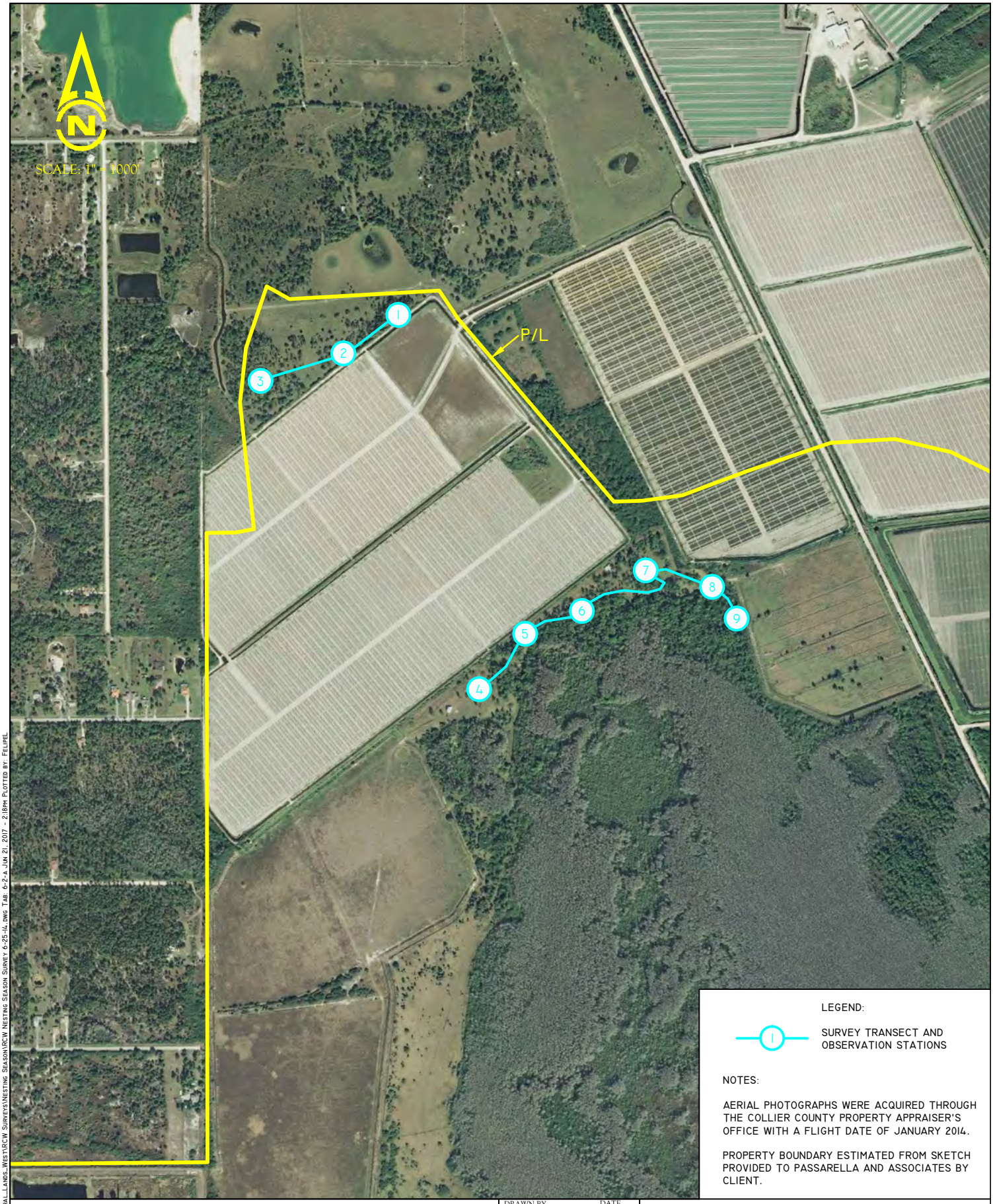


LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

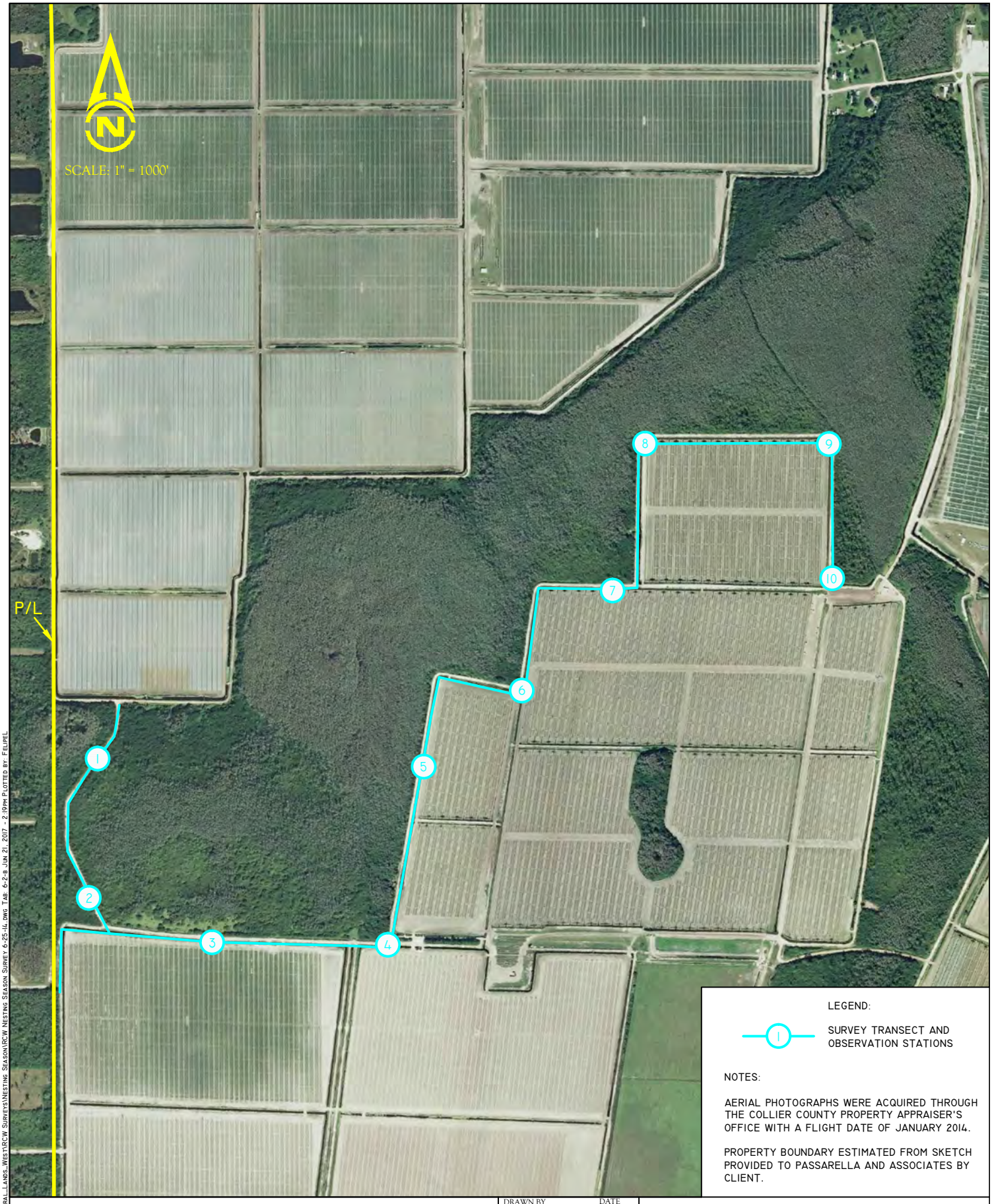
TOWN OF BIG CYPRESS - SURVEY AREA "A"

DATE: JUNE 2, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 6-2-A, Jun 21, 2017 - 2:18pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

TOWN OF BIG CYPRESS SURVEY AREA "B"

DATE: JUNE 2, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
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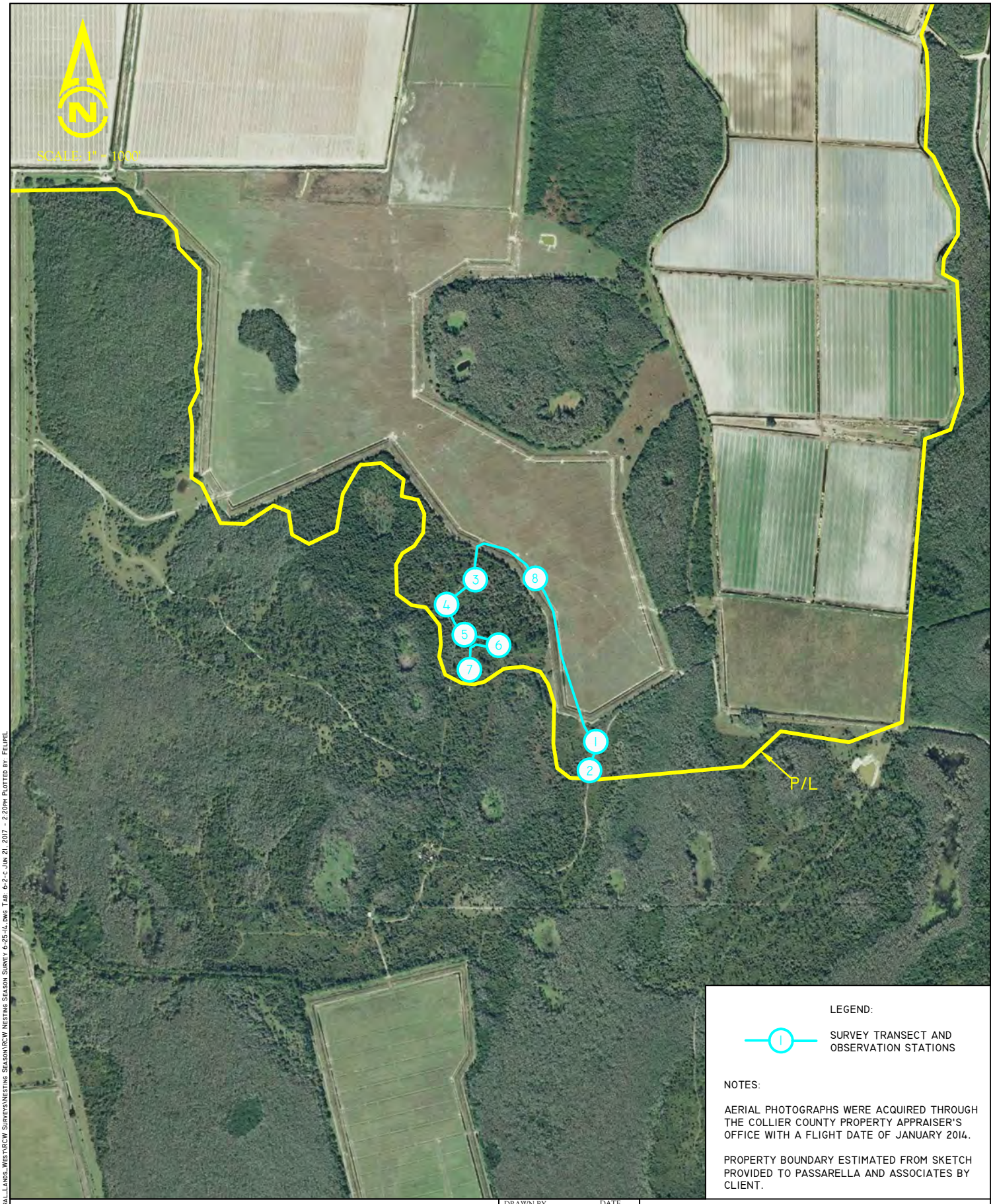


LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

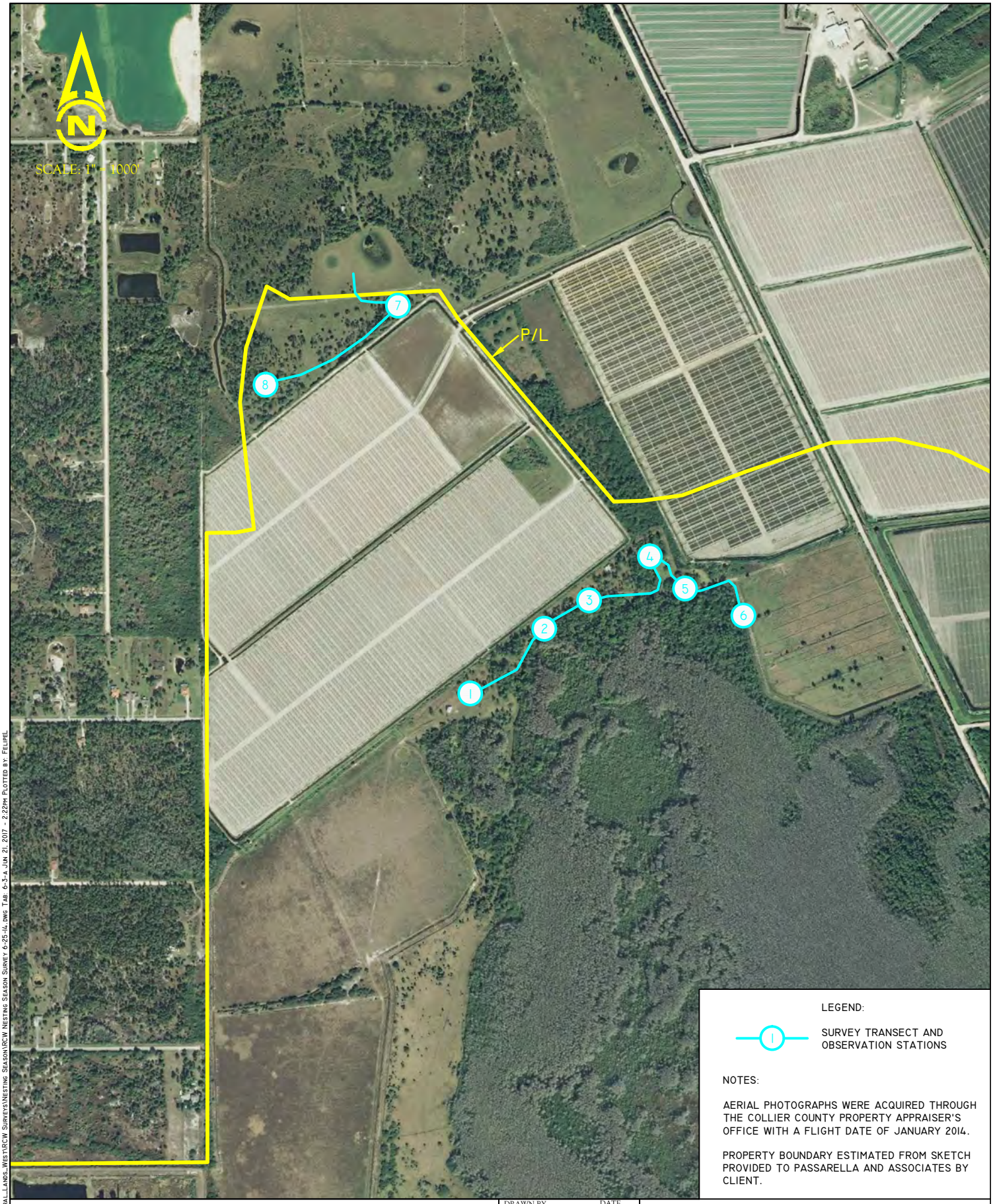
TOWN OF BIG CYPRESS - SURVEY AREA "C"

DATE: JUNE 2, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\arl\100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 6-2-C Jun 21, 2017 - 2:20pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

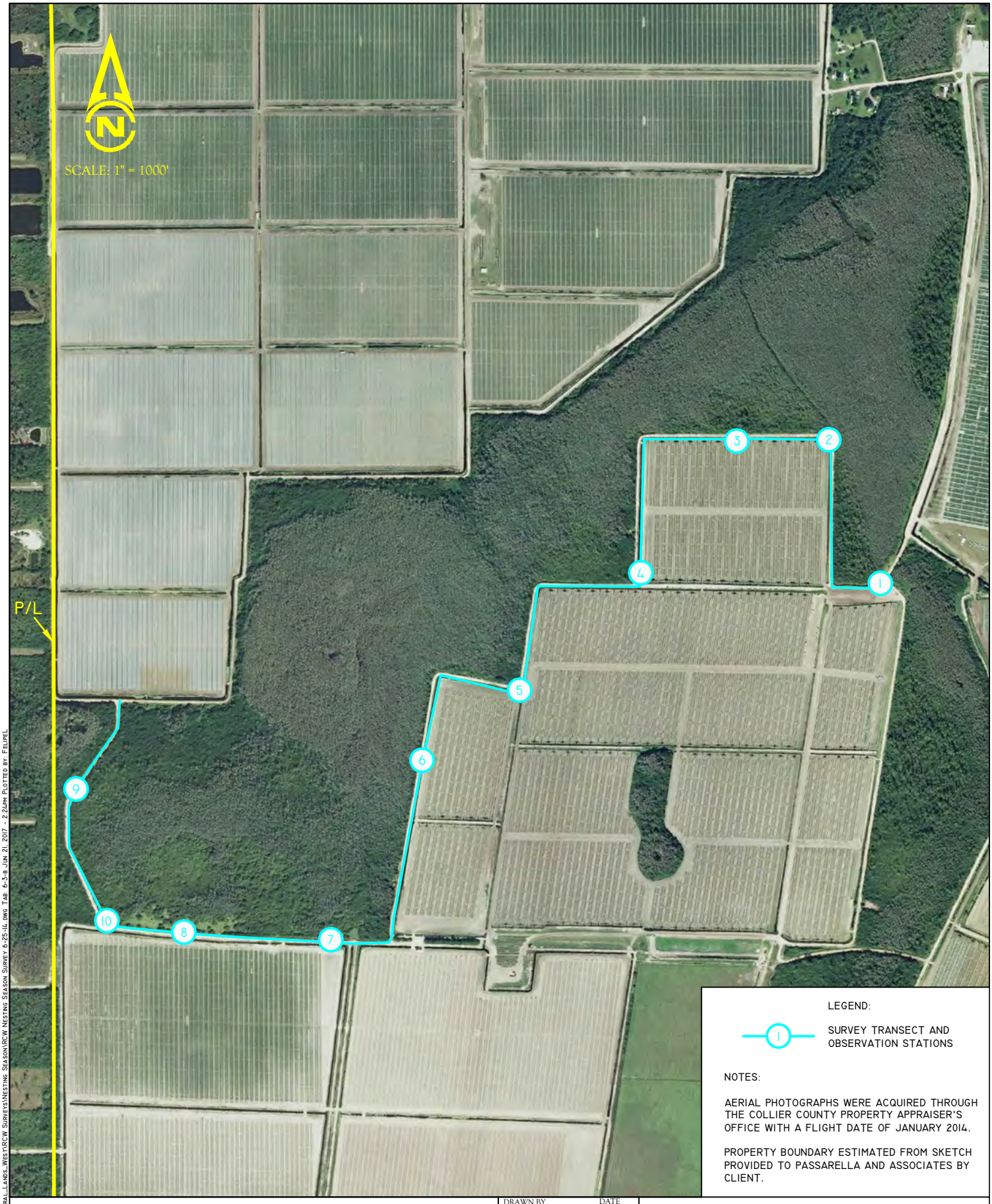
TOWN OF BIG CYPRESS - SURVEY AREA "A"

DATE: JUNE 3, 2014

	DRAWN BY	DATE
	D.B.	6/19/14
	REVIEWED BY	DATE
	C.G.R.	6/19/14
	REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 6-3-A, Jun 21, 2017 - 2:22pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

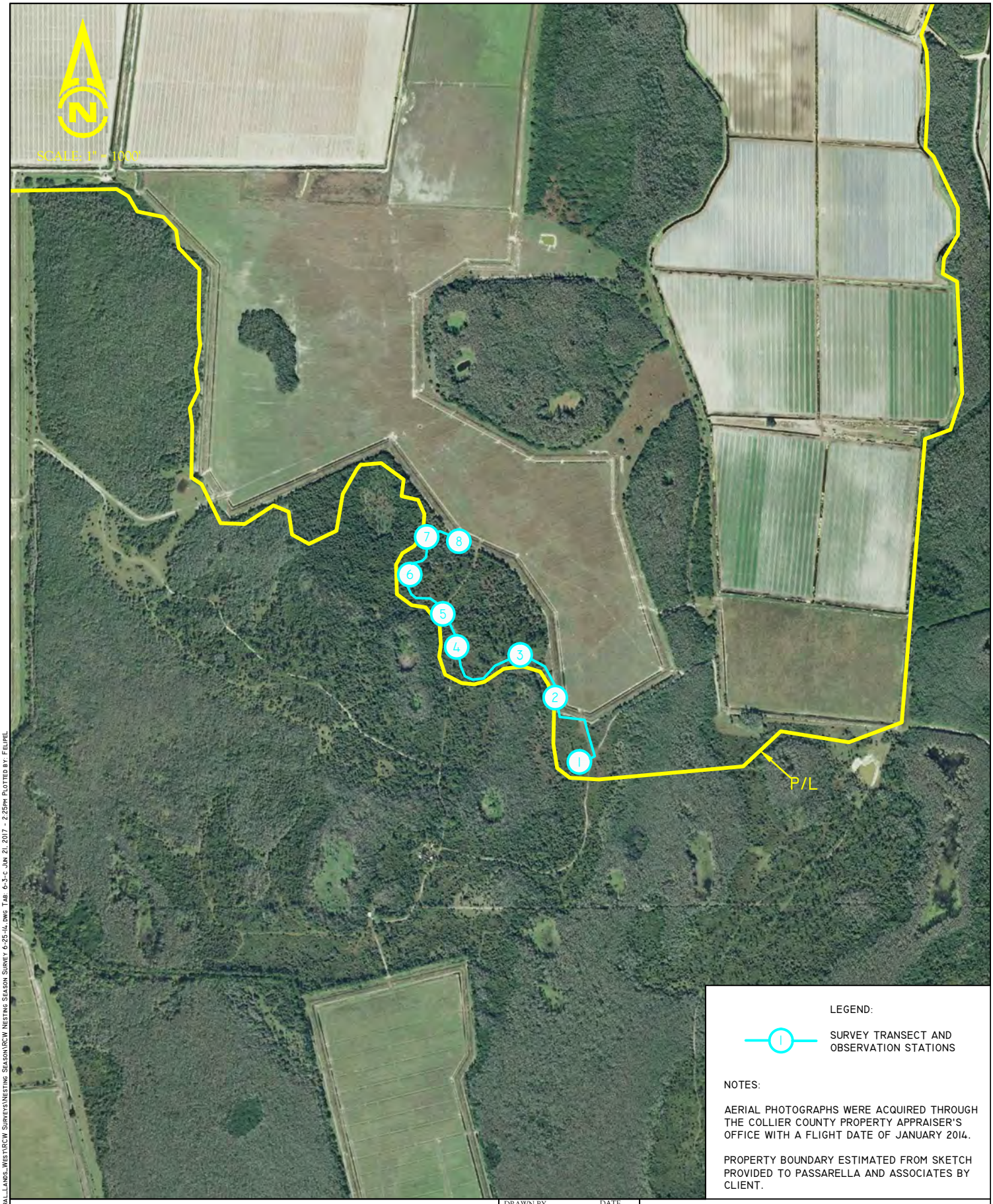
TOWN OF BIG CYPRESS SURVEY AREA "B"

DATE: JUNE 3, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm148\100_RURAL_LANDS_WEST\RCW SURVEYS\NESTING SEASON\RCW NESTING SEASON SURVEY 6-25-14.DWG TAB 6-3-B JUN 21, 2017 - 2:24PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

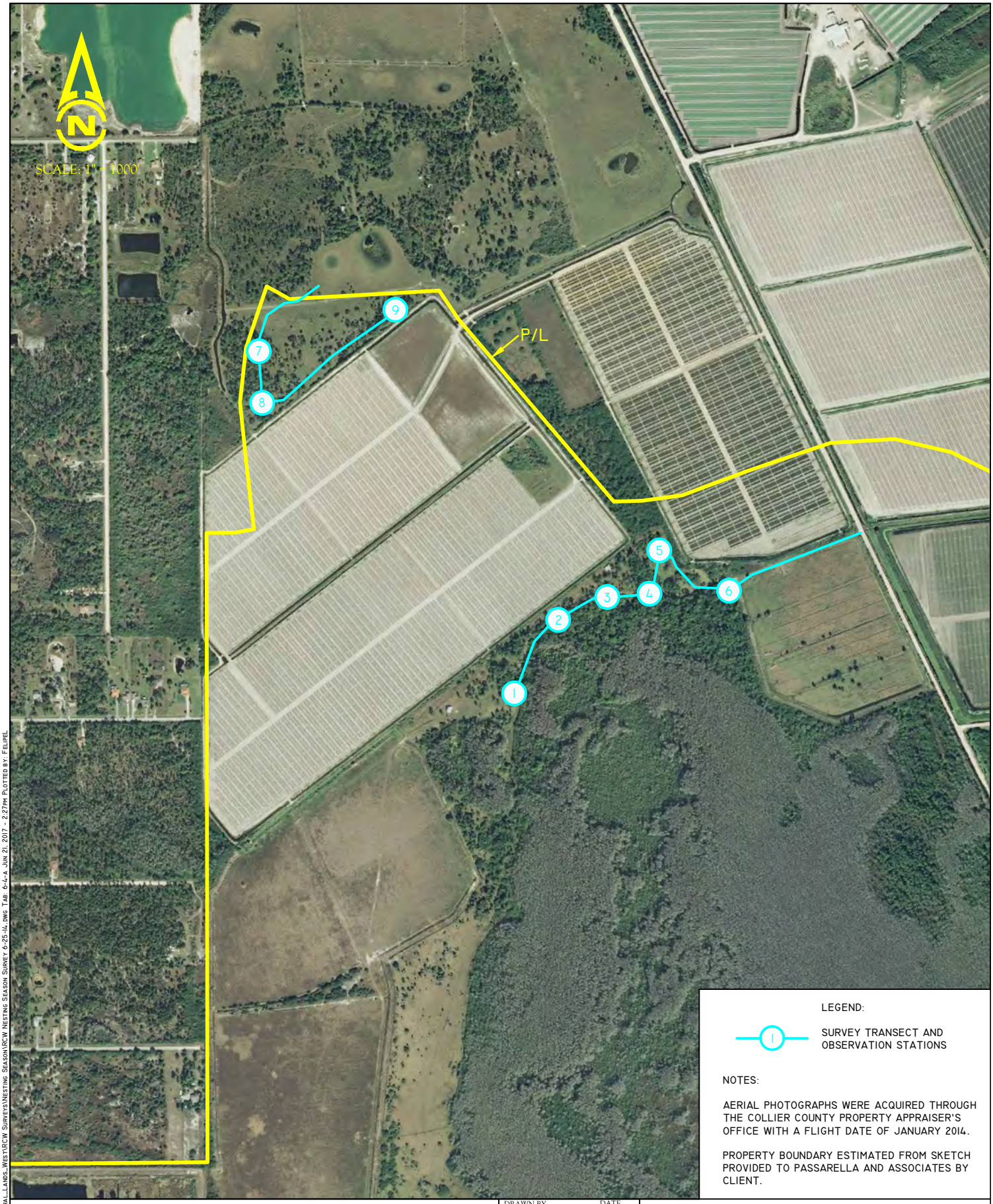
TOWN OF BIG CYPRESS - SURVEY AREA "C"

DATE: JUNE 3, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\arl\100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 6-3-c. Jun 21, 2017 - 2:25pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

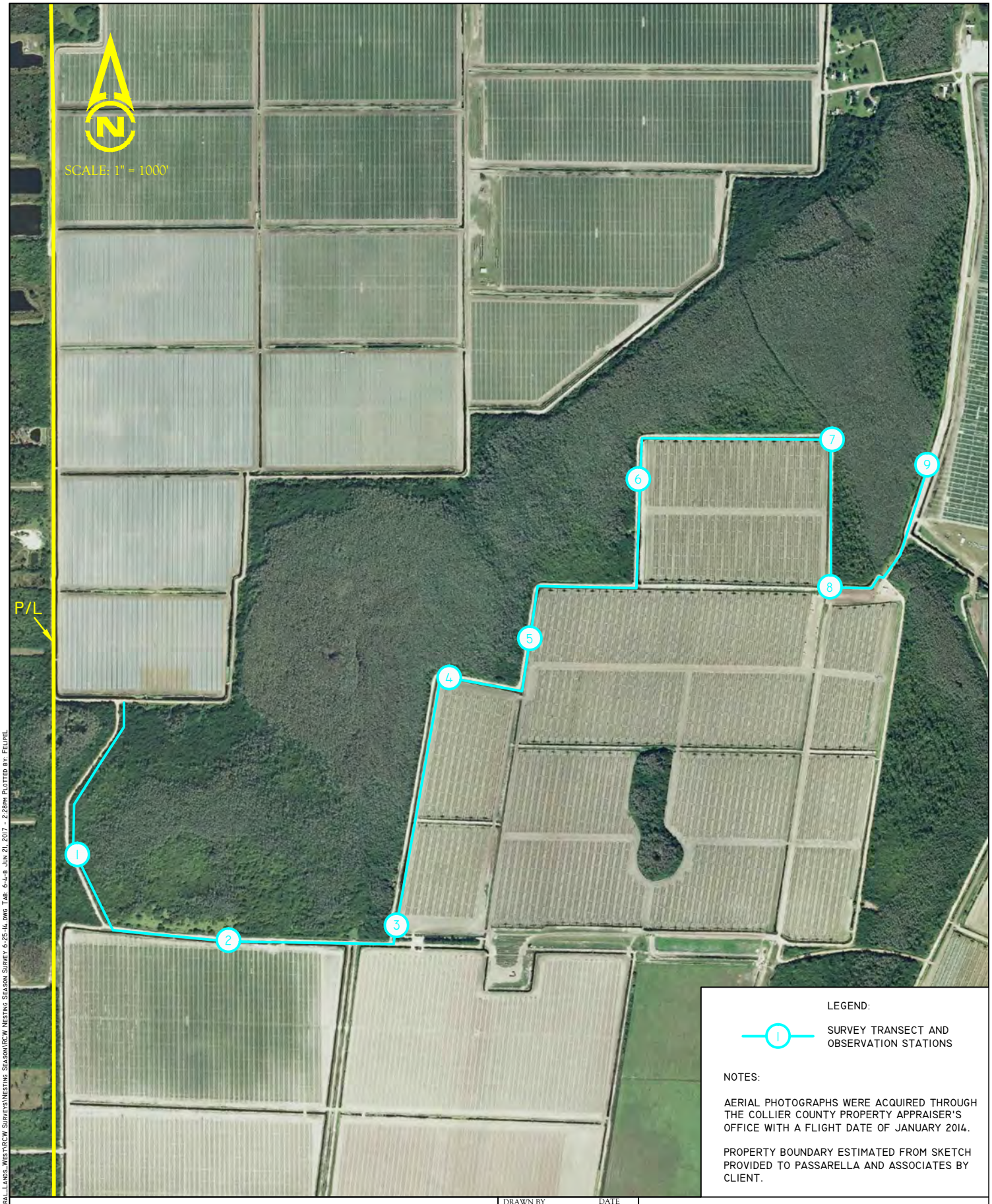
TOWN OF BIG CYPRESS - SURVEY AREA "A"

DATE: JUNE 4, 2014

	DRAWN BY	DATE
	D.B.	6/19/14
	REVIEWED BY	DATE
	C.G.R.	6/19/14
	REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 6-4-A Jun 21, 2017 - 2:27pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

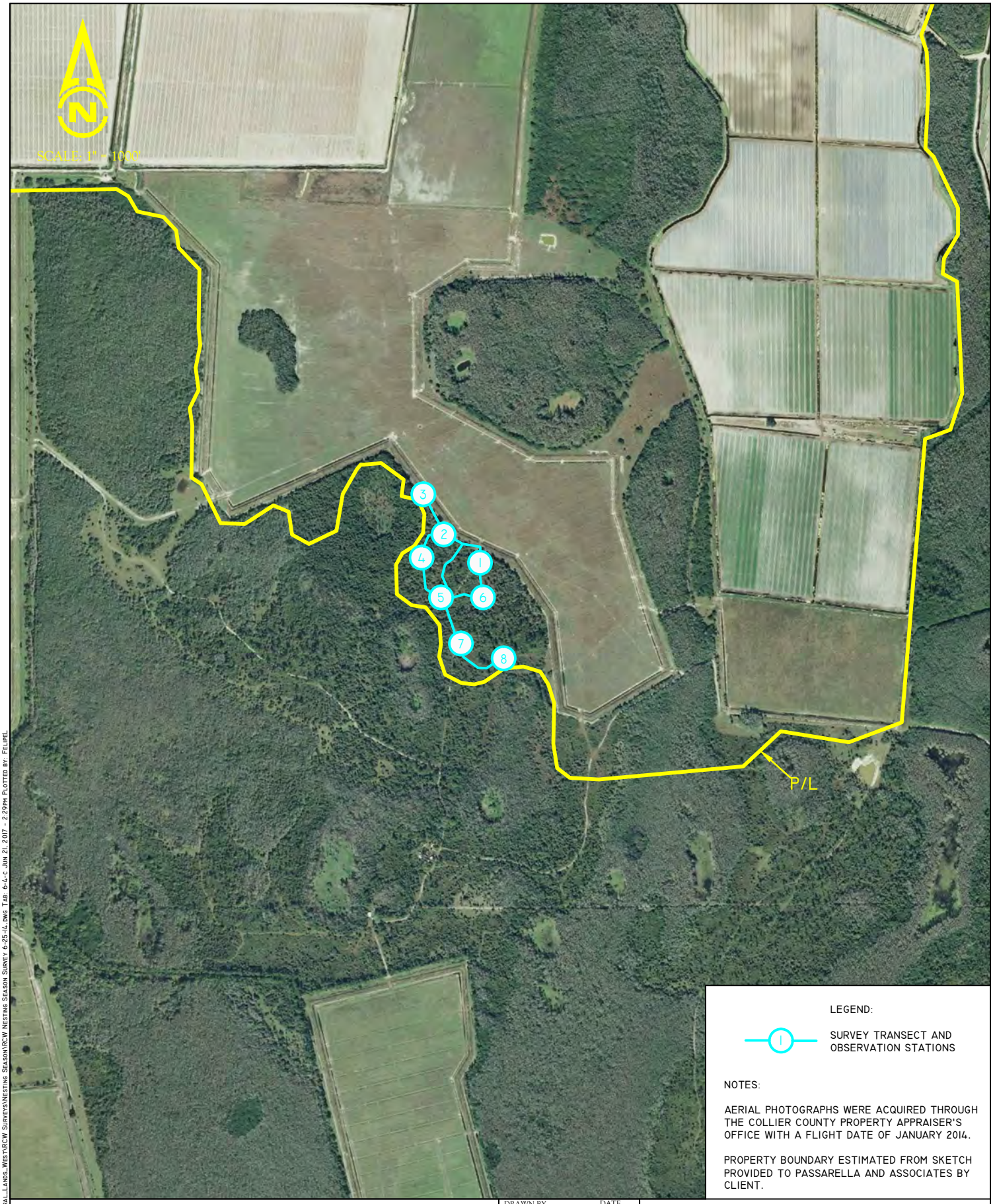
TOWN OF BIG CYPRESS SURVEY AREA "B"

DATE: JUNE 4, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481\00_RURAL_LANDS_WEST\RCW SURVEYS\NESTING SEASON\RCW NESTING SEASON SURVEY 6-25-14.DWG TAB 6-4-9 JUN 21, 2017 - 2:28PM PLOTTED BY: FELIPEL



LEGEND:

1 — SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

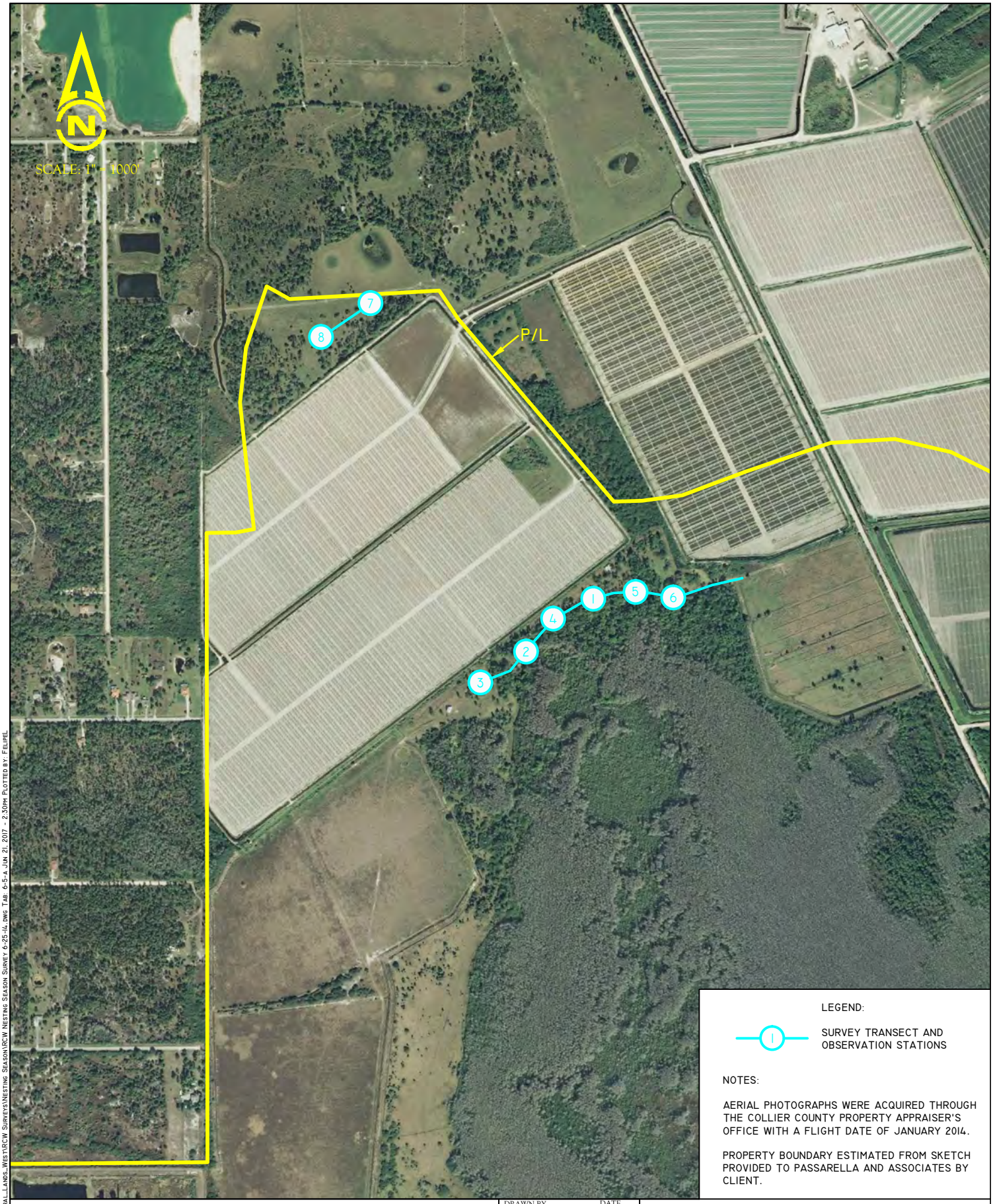
TOWN OF BIG CYPRESS - SURVEY AREA "C"

DATE: JUNE 4, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm1481100_RuralLands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab 6-4-C Jun 21, 2017 - 2:29pm Plotted By: Felipe L



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

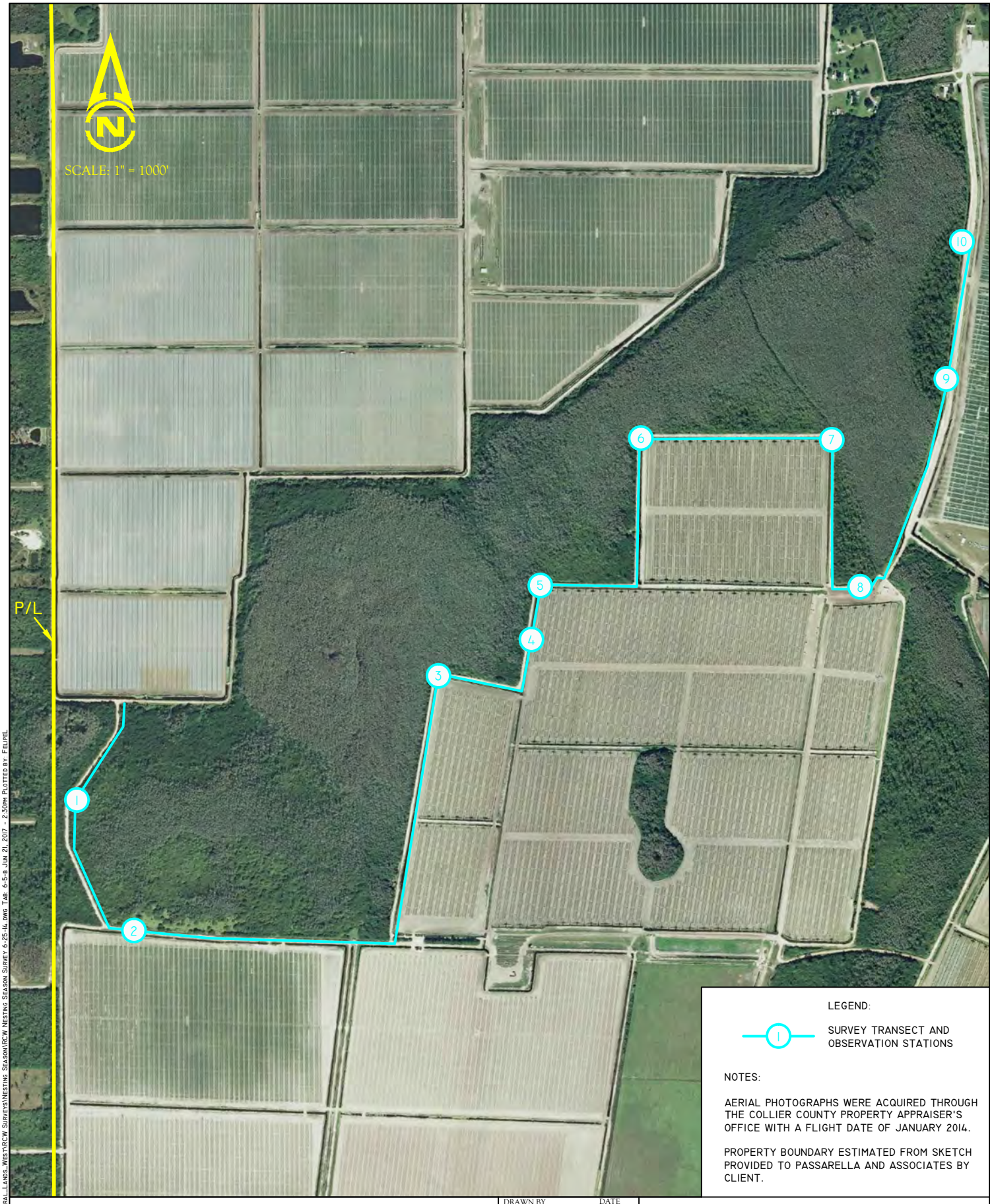
TOWN OF BIG CYPRESS - SURVEY AREA "A"

DATE: JUNE 5, 2014

	DRAWN BY	DATE
	D.B.	6/19/14
	REVIEWED BY	DATE
	C.G.R.	6/19/14
	REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 6-5-A, Jun 21, 2017 - 2:30pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

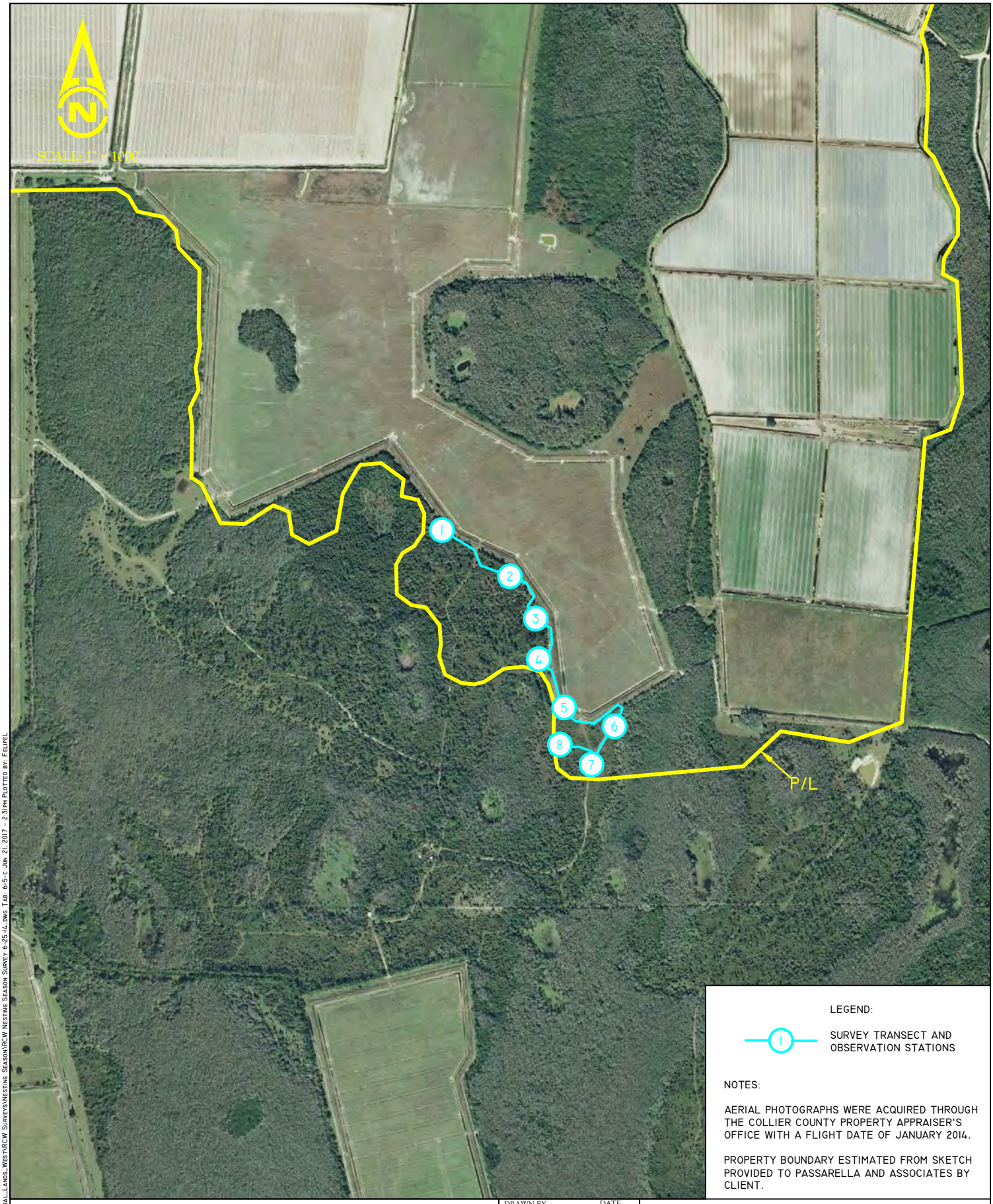
TOWN OF BIG CYPRESS SURVEY AREA "B"

DATE: JUNE 5, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm148\100_RURAL_LANDS_WEST\RCW SURVEYS\NESTING SEASON\RCW NESTING SEASON SURVEY 6-25-14.DWG TAB 6-5-B JUN 21, 2017 - 2:30PM PLOTTED BY: FELIPEL



LEGEND:

1 — SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

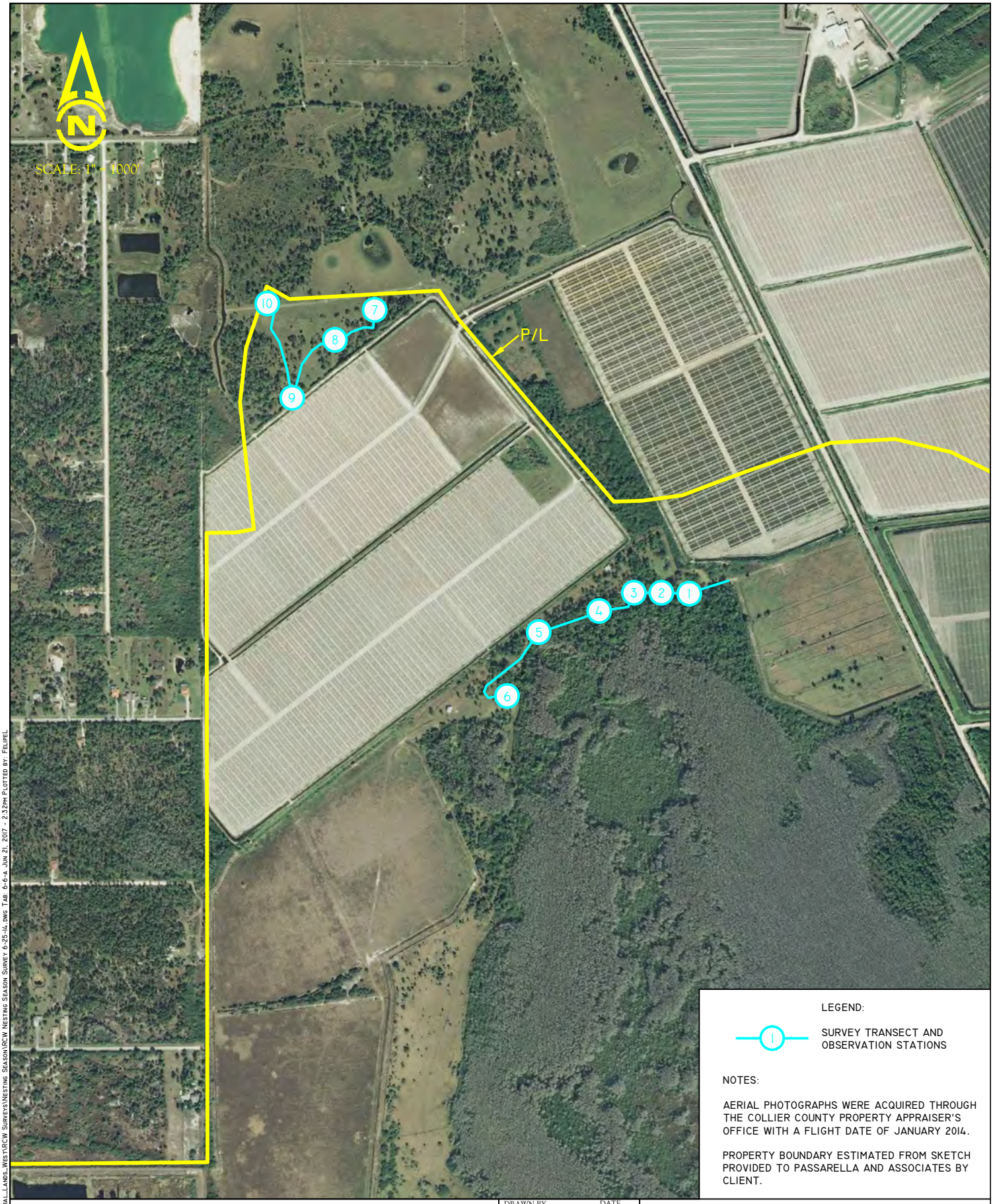
TOWN OF BIG CYPRESS - SURVEY AREA "C"

DATE: JUNE 5, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm1481100_RuralLands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab 6-5-c. Jun 21, 2017 - 2:31pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

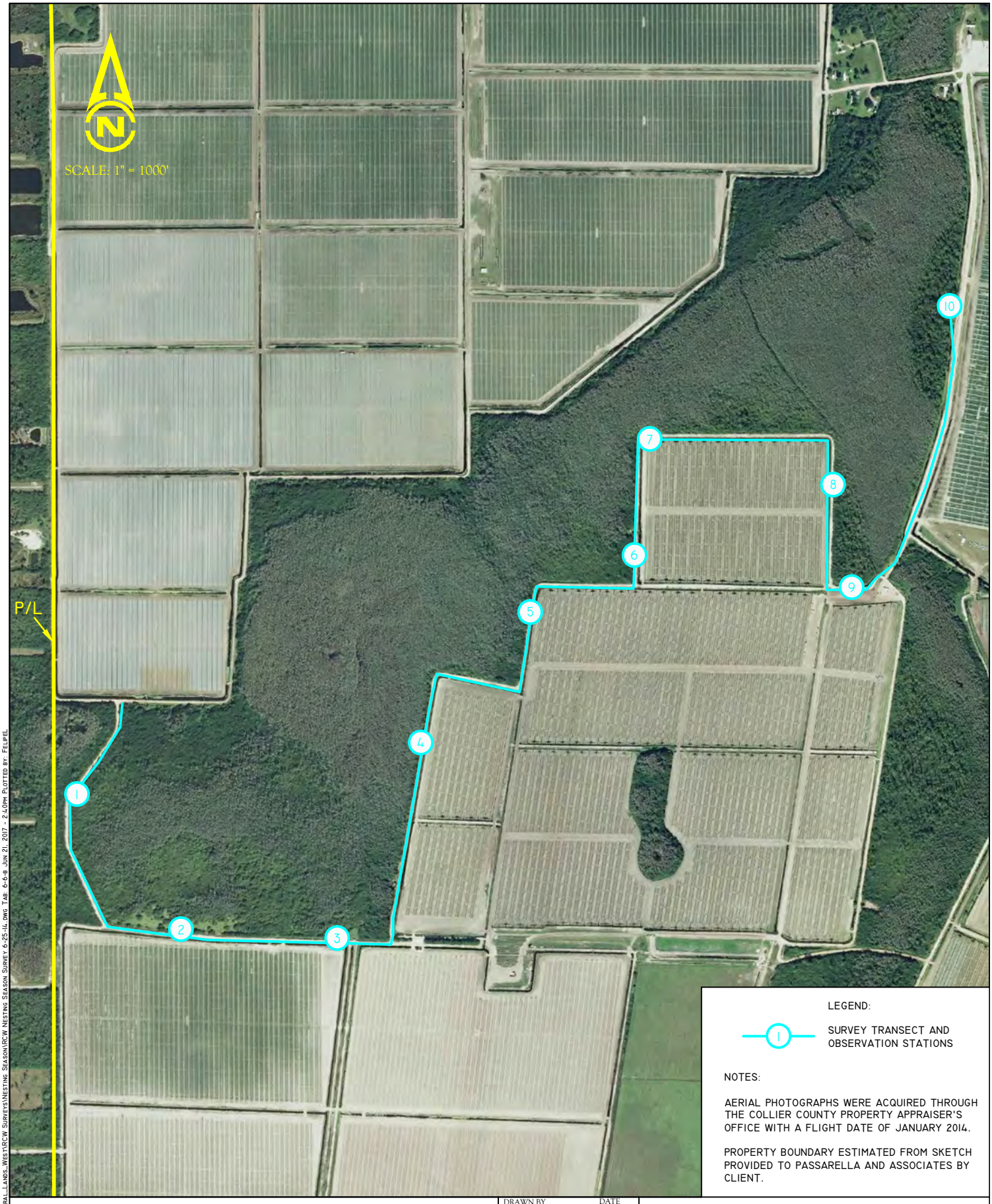
TOWN OF BIG CYPRESS - SURVEY AREA "A"

DATE: JUNE 6, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 6-25-14.dwg Tab: 6-6-A, Jun 21, 2017 - 2:32pm Plotted By: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY ESTIMATED FROM SKETCH PROVIDED TO PASSARELLA AND ASSOCIATES BY CLIENT.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

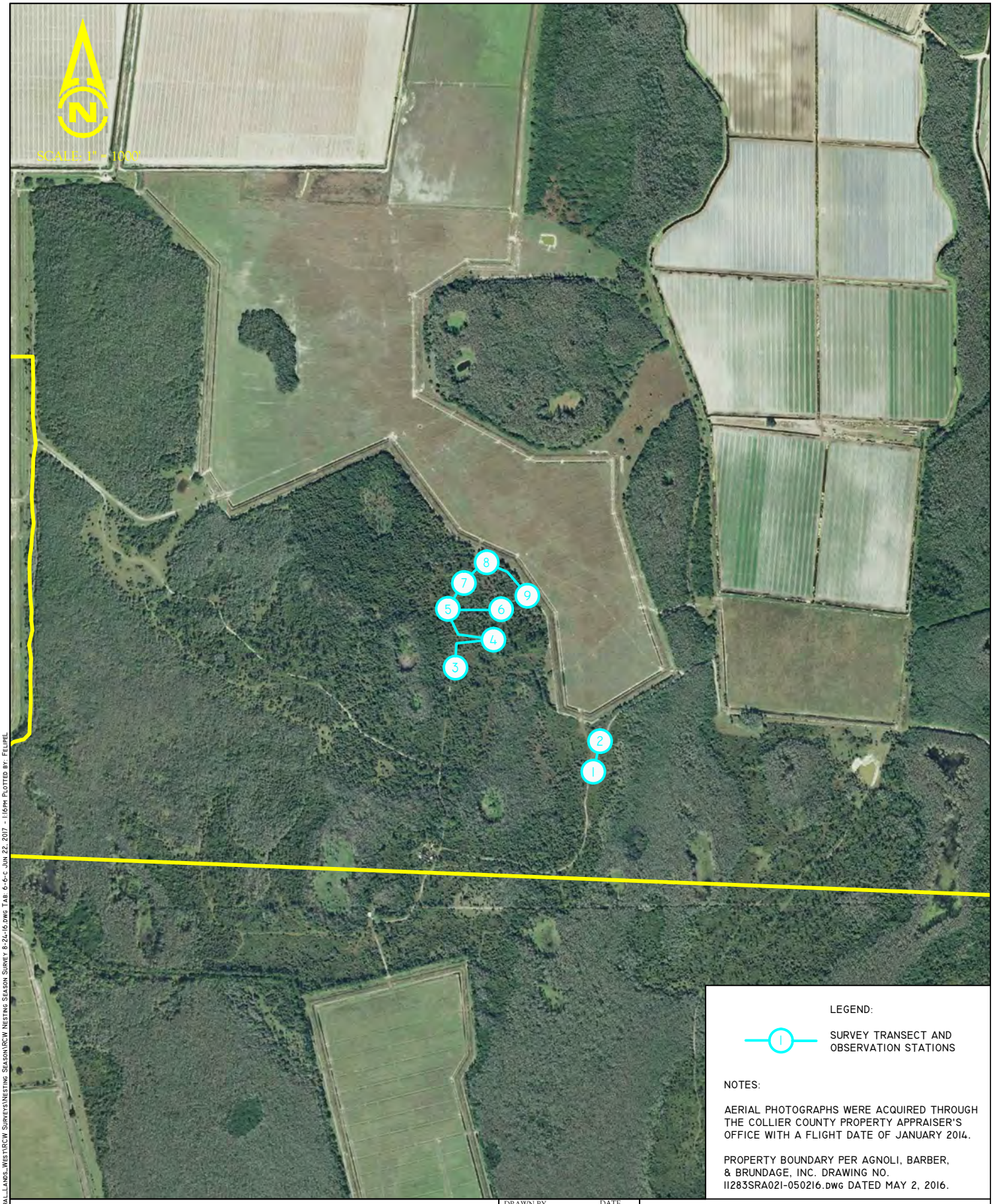
TOWN OF BIG CYPRESS SURVEY AREA "B"

DATE: JUNE 6, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm148\100_RURAL_LANDS_WEST\RCW SURVEYS\NESTING SEASON\RCW NESTING SEASON SURVEY 6-25-14.DWG TAB 6-6-9 JUN 21, 2017 - 2:40PM PLOTTED BY: FELIPEL



LEGEND:

1 — SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

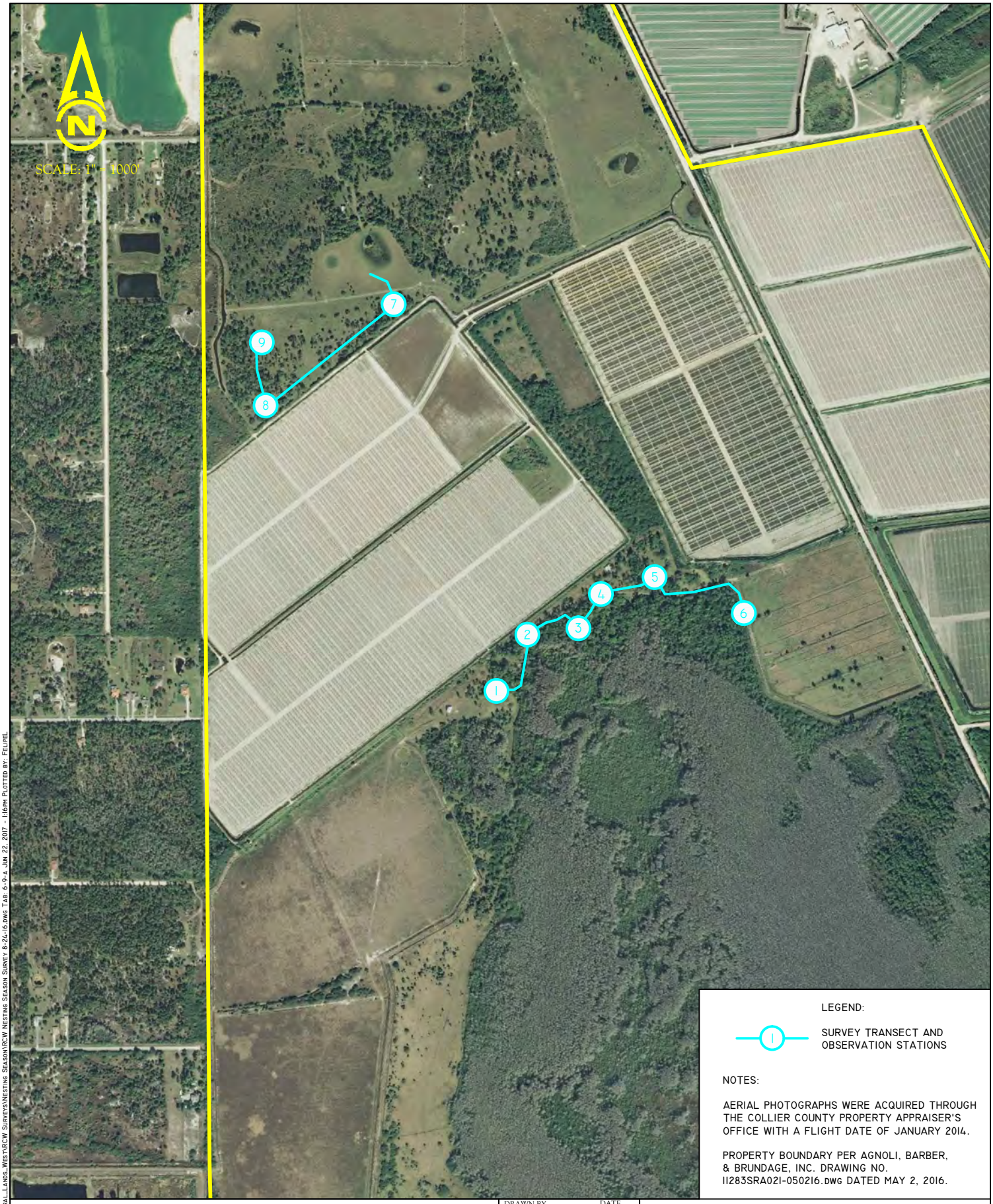
RURAL LANDS WEST - SURVEY AREA "C"

DATE: JUNE 6, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 8-24-16.dwg Tab 6-6-c Jun 22, 2017 - 1:16pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

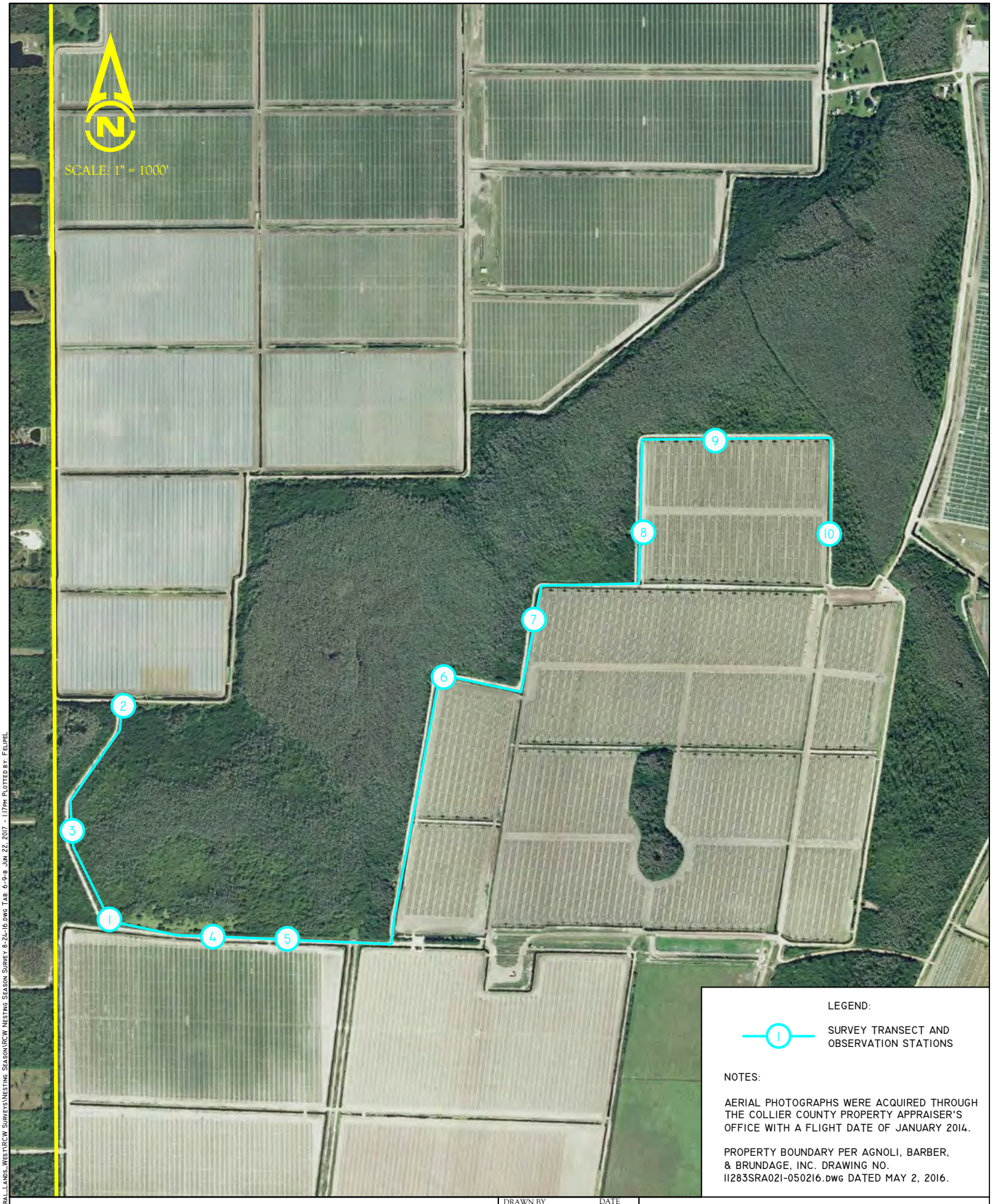
RURAL LANDS WEST - SURVEY AREA "A"

DATE: JUNE 9, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 8-24-16.dwg Tab 6-9-A, Jun 22, 2017 - 1:16pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

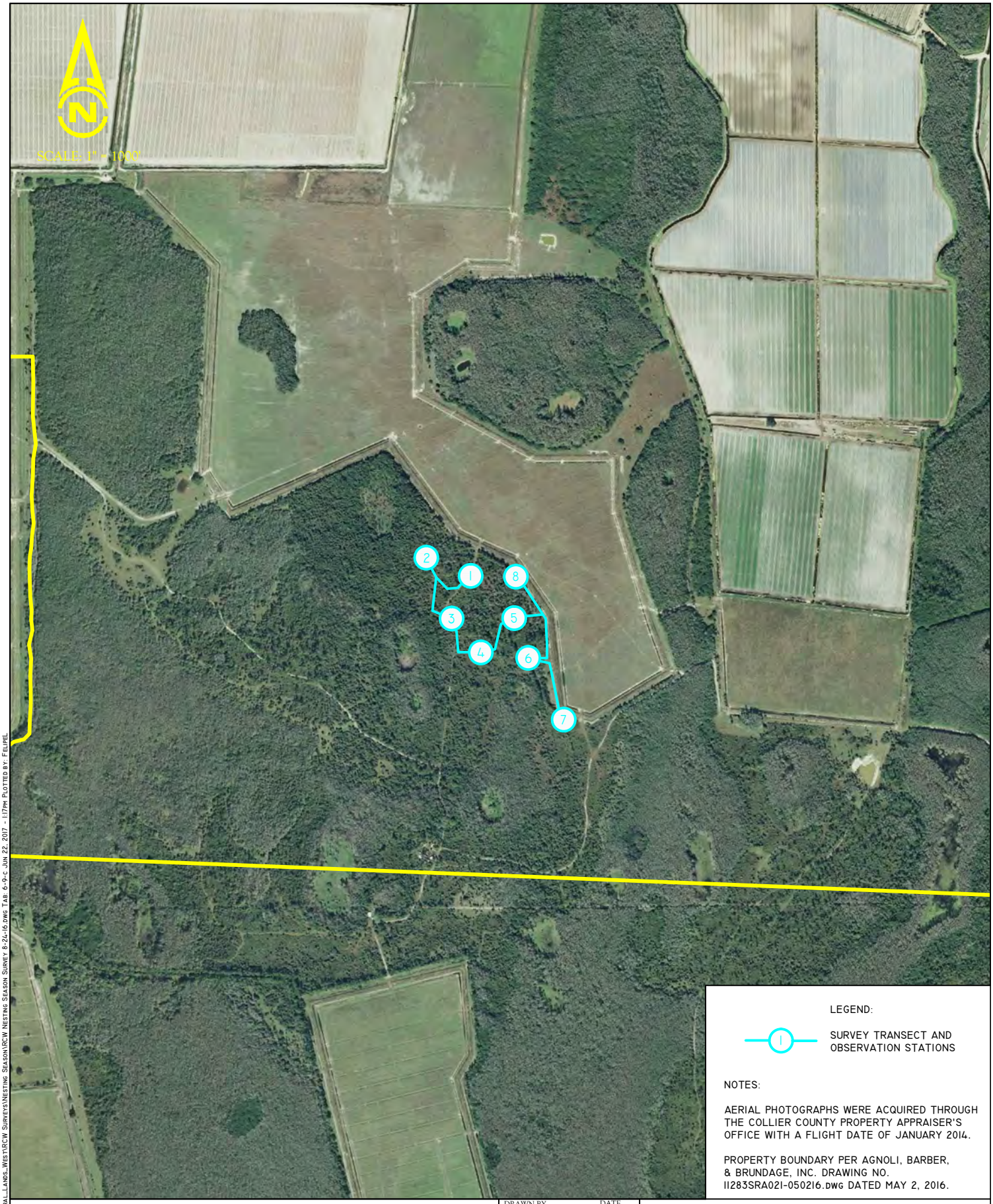
RURAL LANDS WEST - SURVEY AREA "B"

DATE: JUNE 9, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm148\100_RURAL_LANDS_WEST\RCW SURVEYS\NESTING SEASON\RCW NESTING SEASON SURVEY 8-24-16.DWG TAB 6-9-9 JUN 22, 2017 - 1:17PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

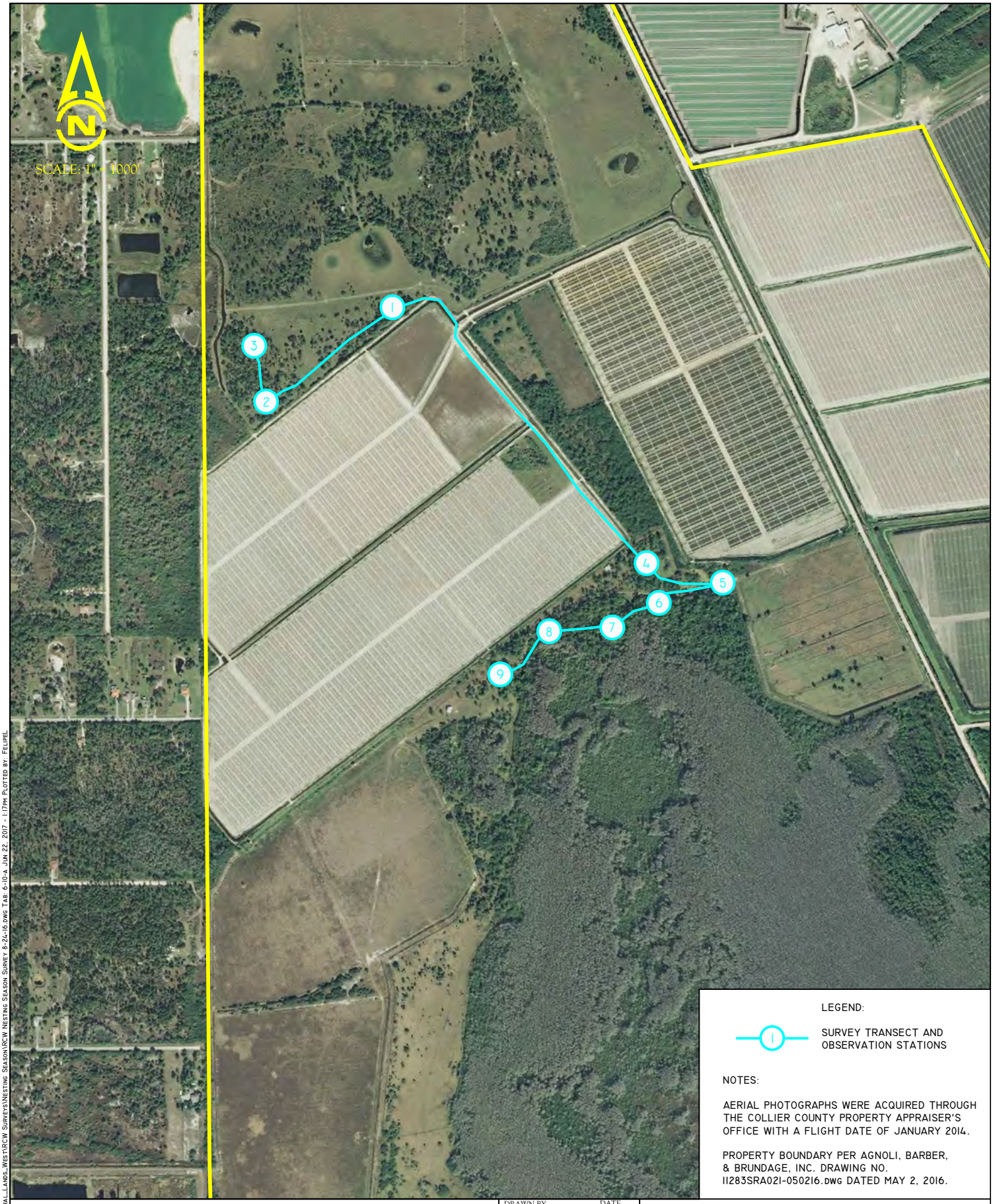
RURAL LANDS WEST - SURVEY AREA "C"

DATE: JUNE 9, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 8-24-16.dwg Tab: 6-9-c. Jun 22, 2017 - 1:17pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

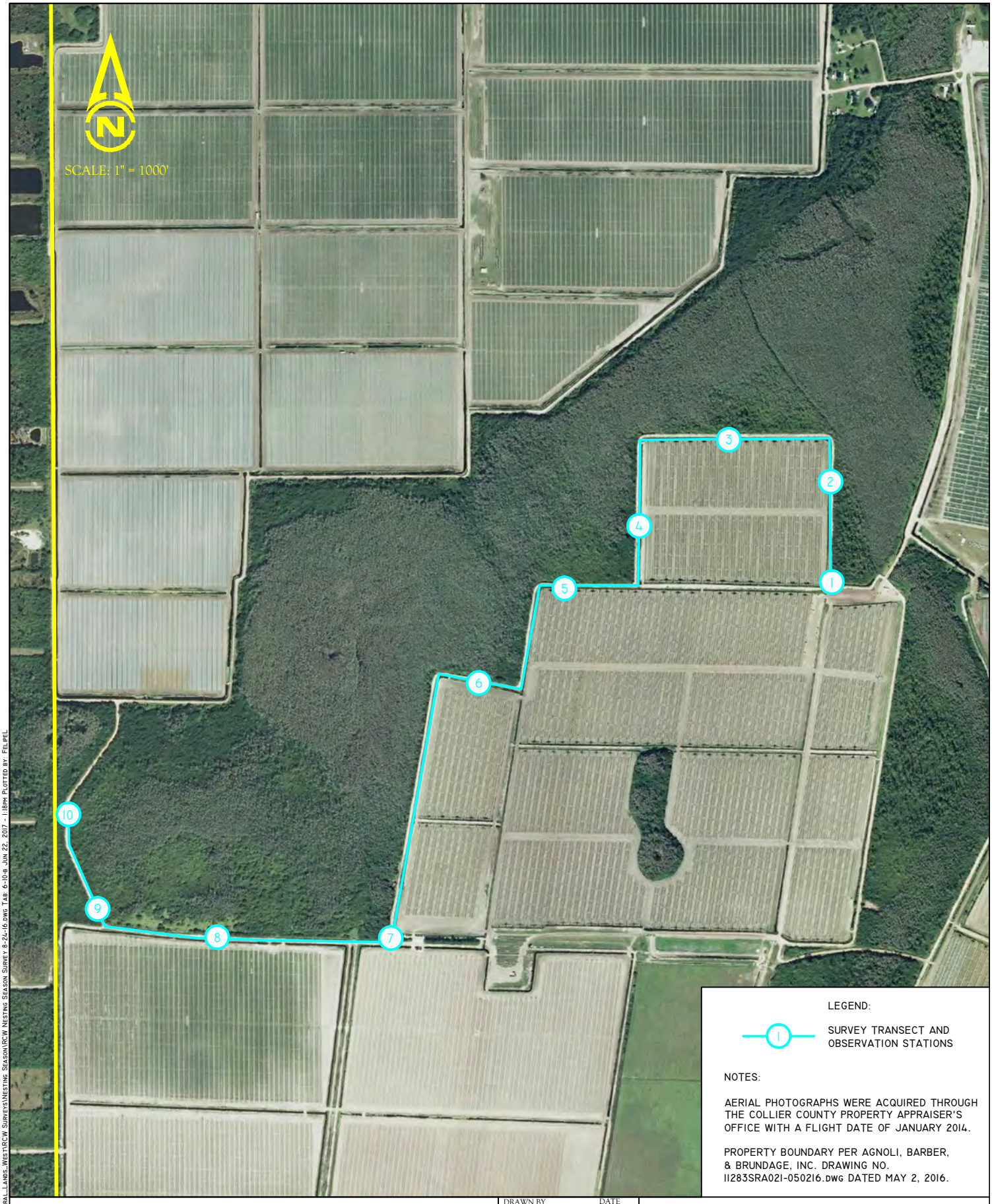
RURAL LANDS WEST - SURVEY AREA "A"

DATE: JUNE 10, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 8-24-16.dwg Tab 6-10-A Jun 22, 2017 - 1:17pm Plotted By: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

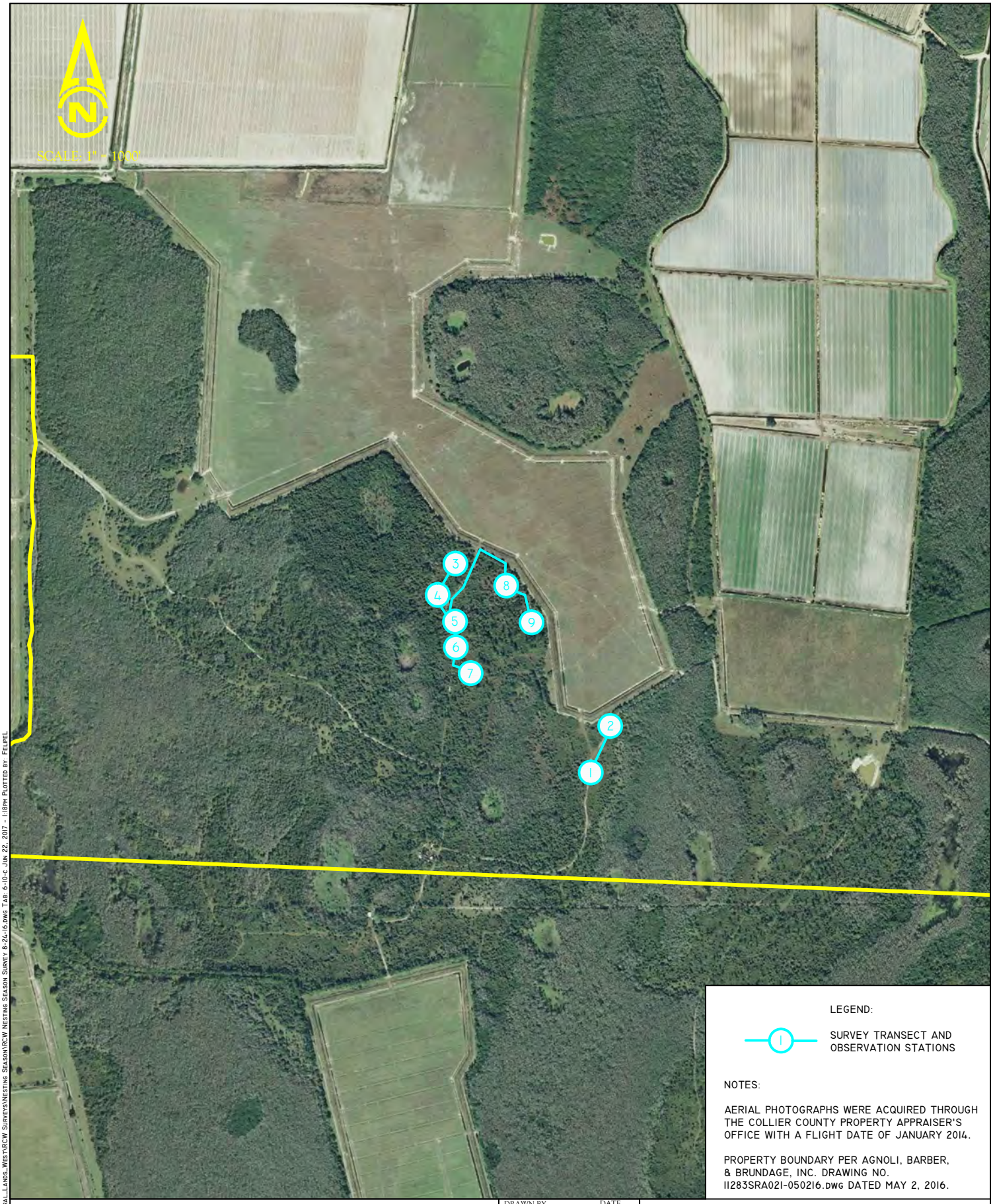
RURAL LANDS WEST - SURVEY AREA "B"

DATE: JUNE 10, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm148\100_RURAL_LANDS_WEST\RCW SURVEYS\NESTING SEASON\RCW NESTING SEASON SURVEY 8-24-16.DWG TAB 6-10-B JUN 22, 2017 - 1:18PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

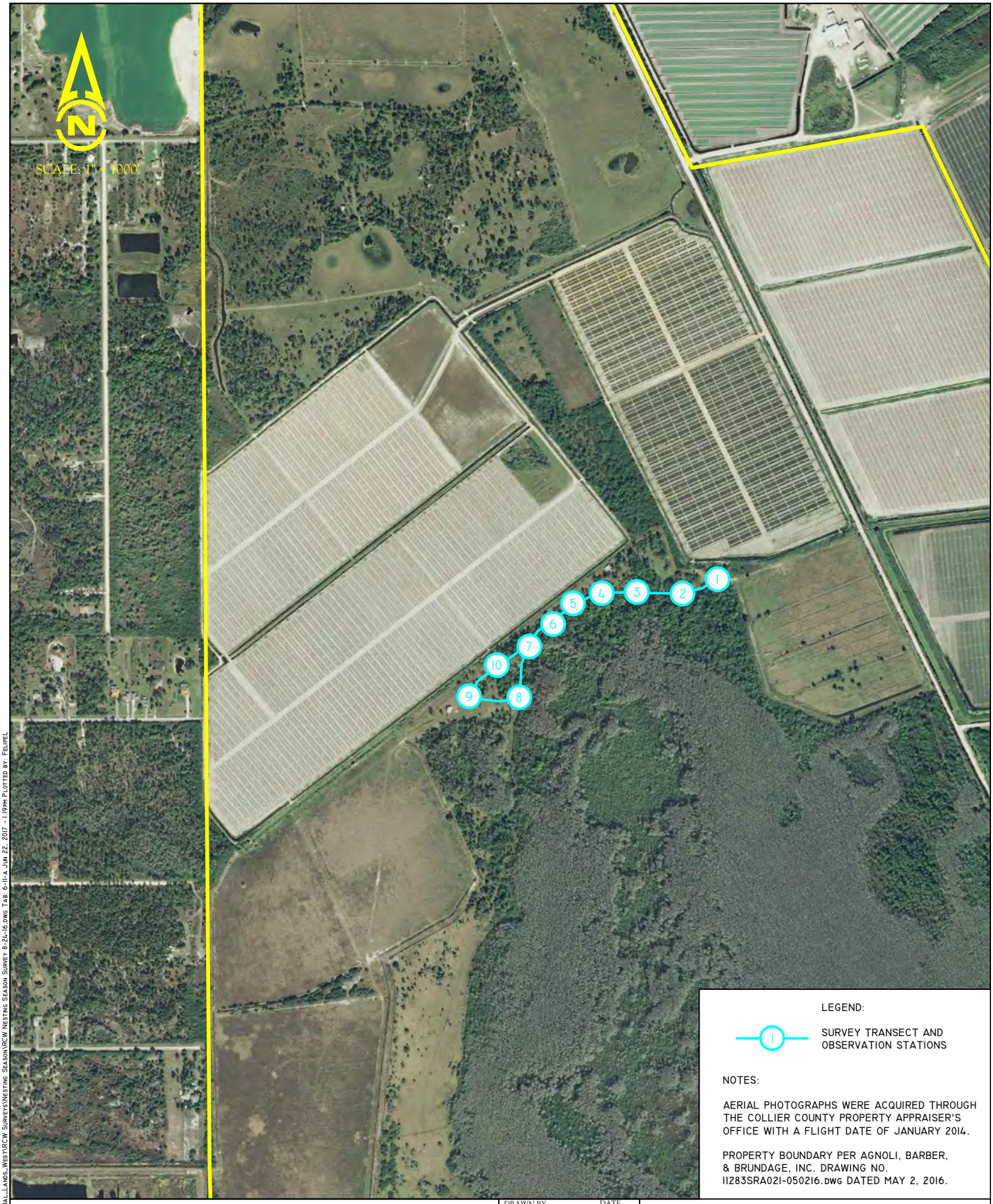
RURAL LANDS WEST - SURVEY AREA "C"

DATE: JUNE 10, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 8-24-16.dwg Tab 6-10-c Jun 22, 2017 - 1:18pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

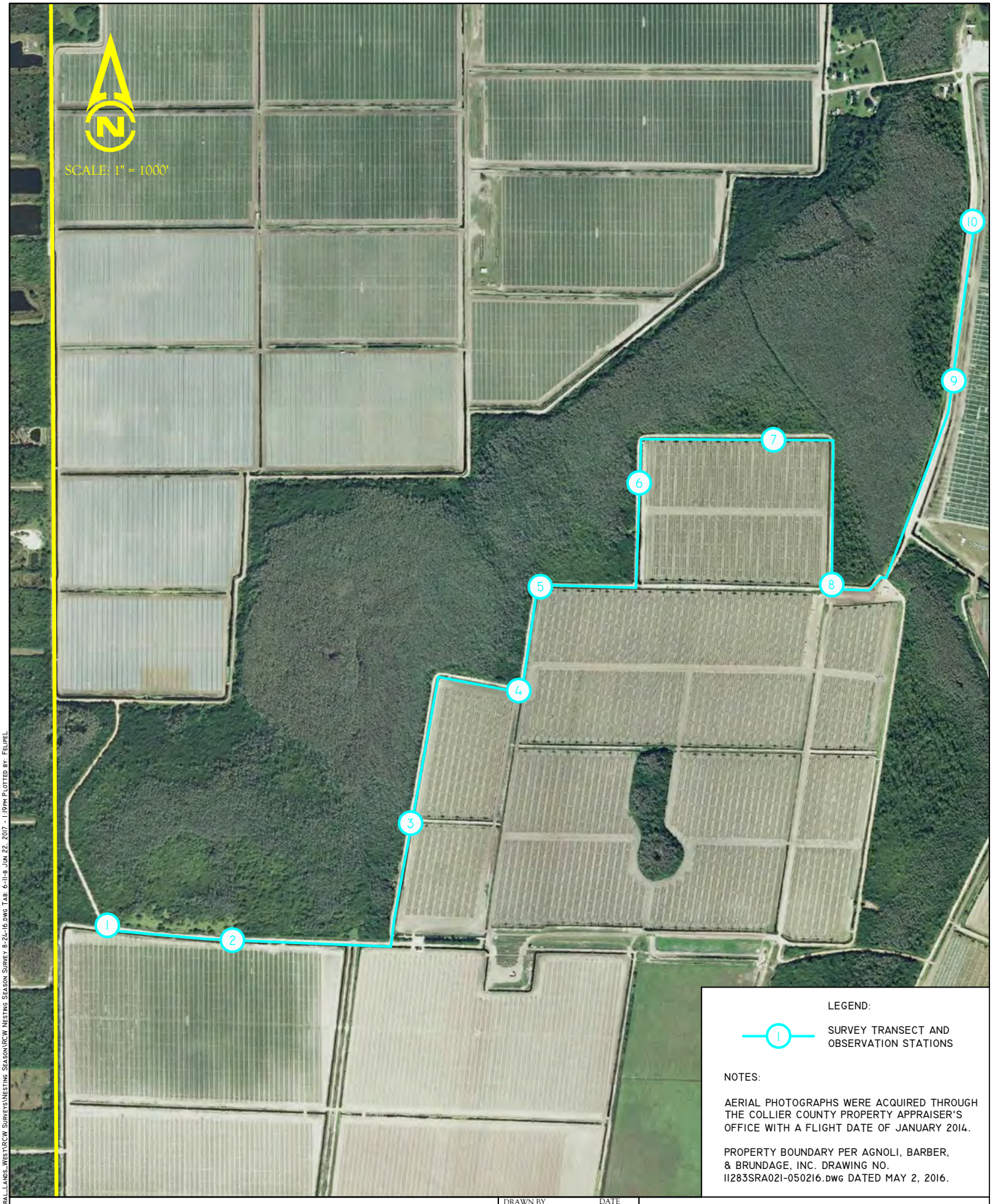
RURAL LANDS WEST - SURVEY AREA "A"

DATE: JUNE 11, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 8-24-16.dwg Tab: 6-11-A, Jun 22, 2017 - 1:09pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

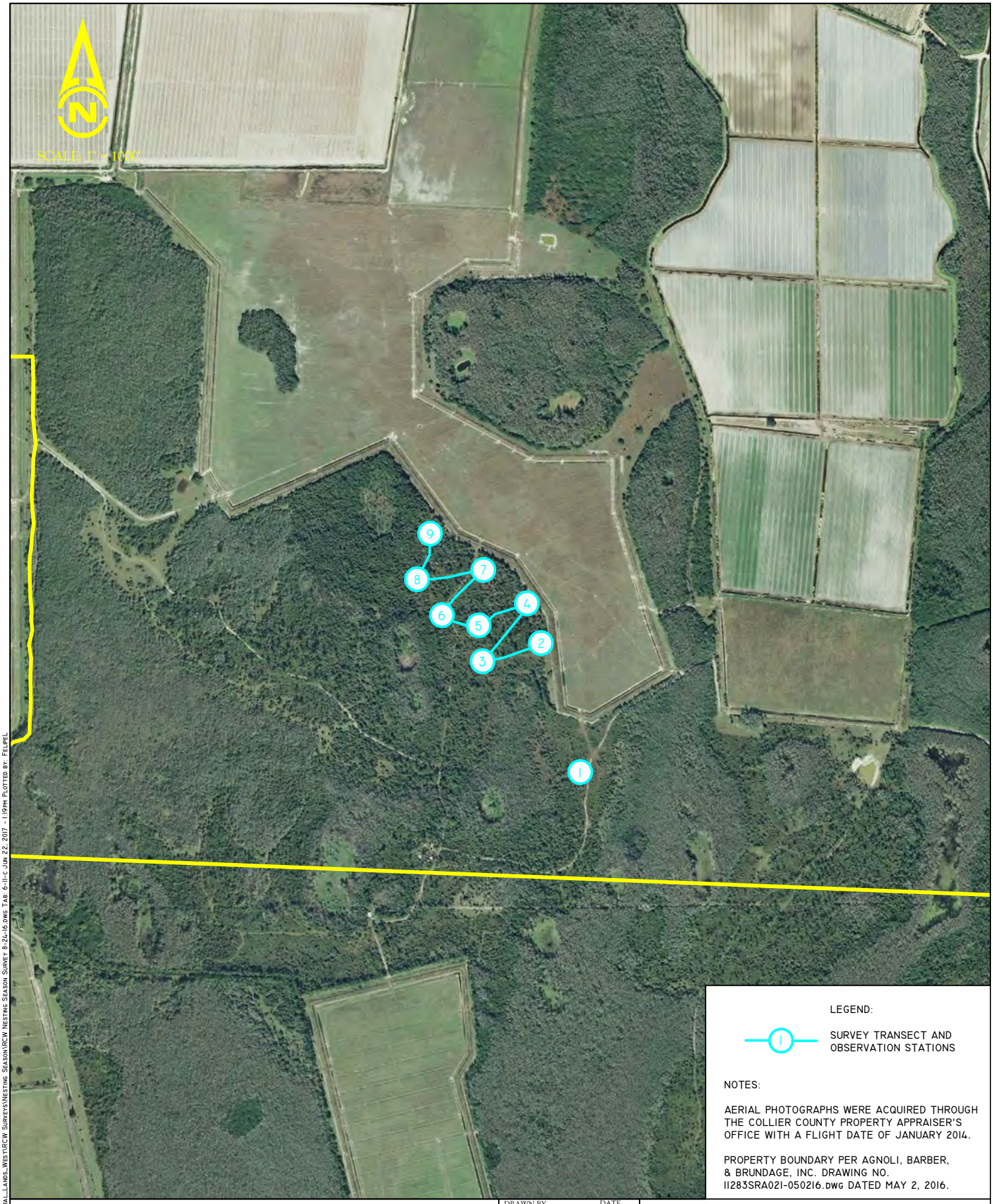
RURAL LANDS WEST - SURVEY AREA "B"

DATE: JUNE 11, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm148\100_RURAL_LANDS_WEST\RCW SURVEYS\NESTING SEASON\RCW NESTING SEASON SURVEY 8-24-16.DWG TAB 6-11-B JUN 22, 2017 - 1:19PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

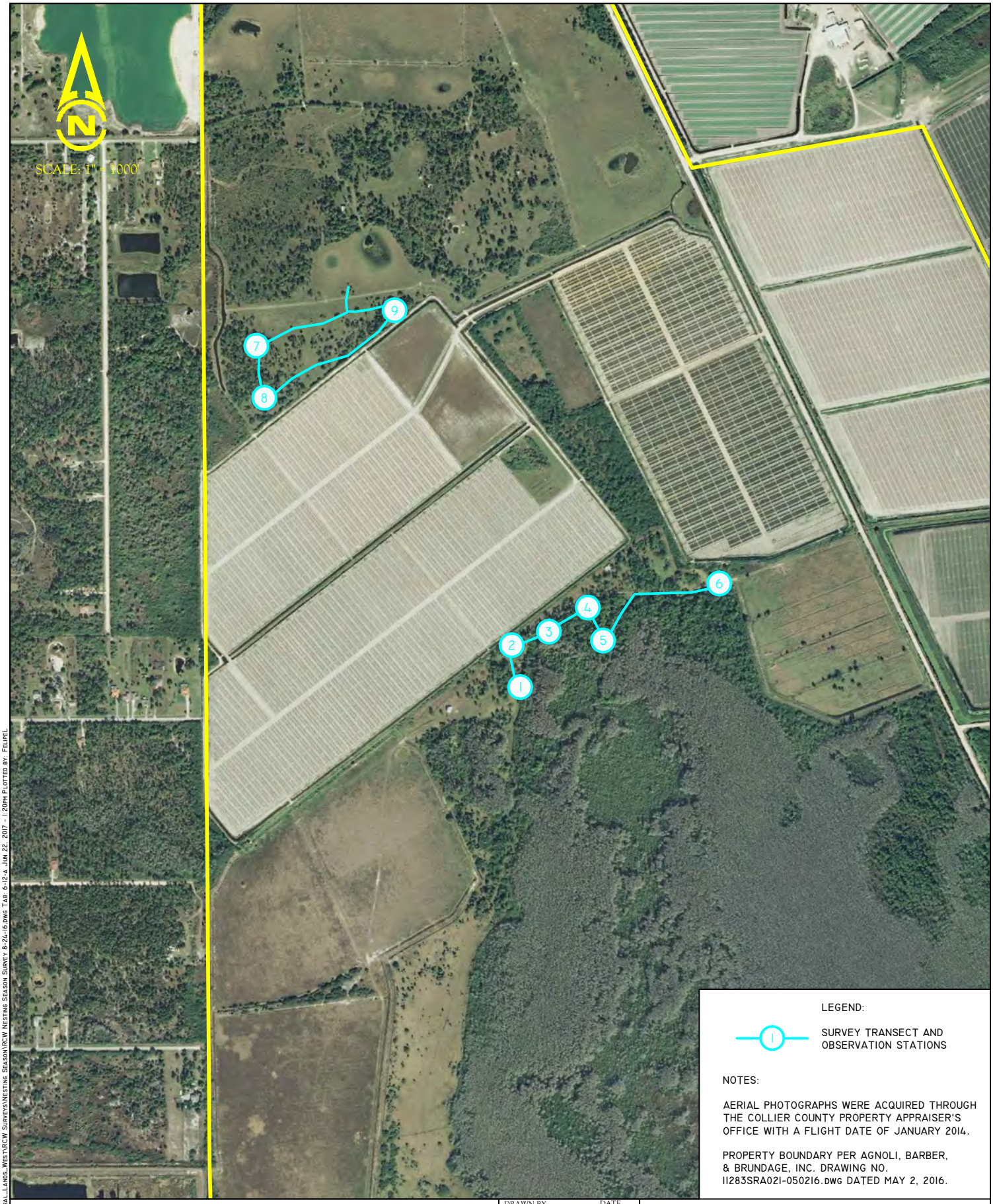
RURAL LANDS WEST - SURVEY AREA "C"

DATE: JUNE 11, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 8-24-16.dwg Tab: 6-11-C Jun 22, 2017 - 1:19pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

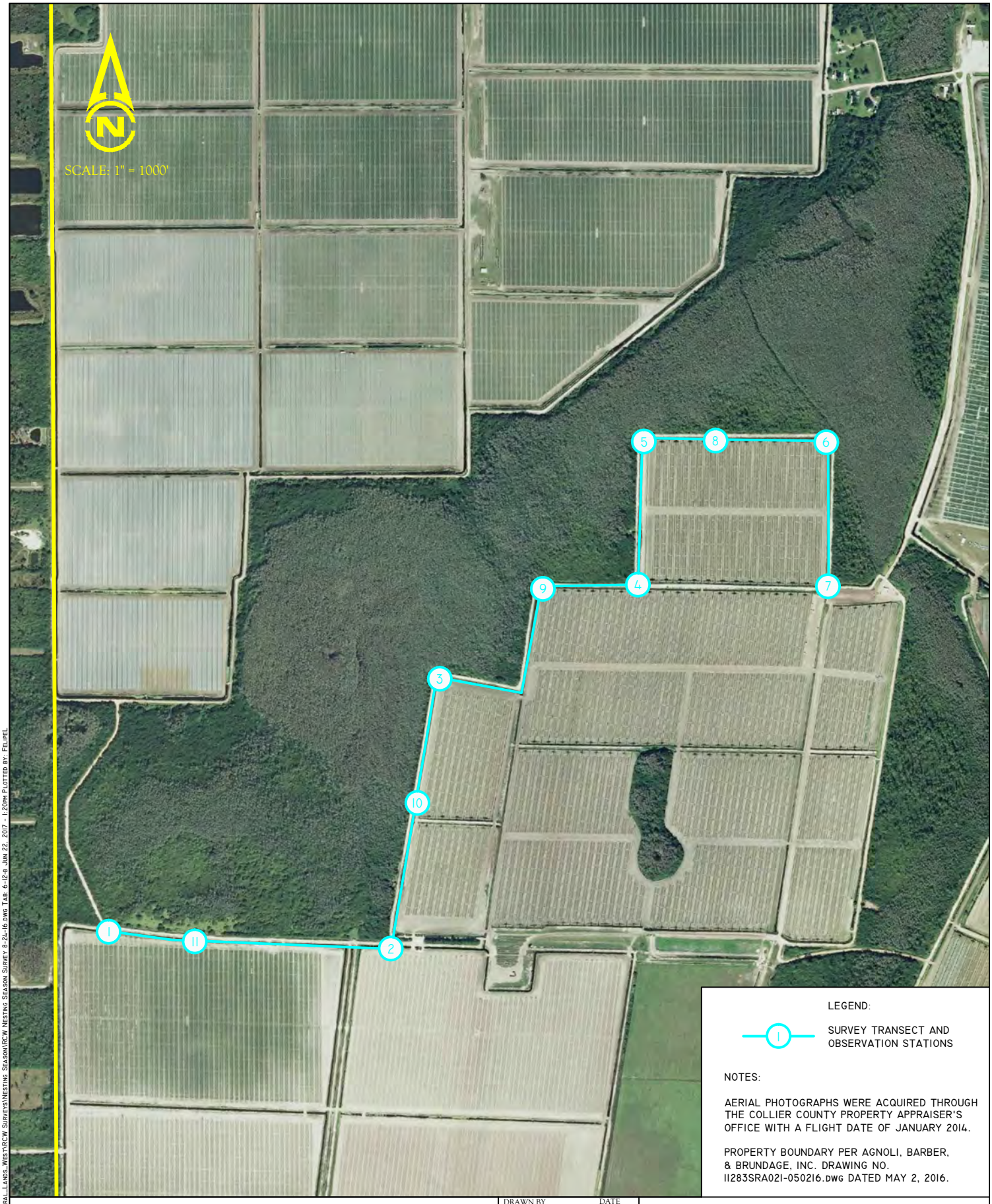
RURAL LANDS WEST - SURVEY AREA "A"

DATE: JUNE 12, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_Rural_Lands_West\RCW Surveys\Nesting Season\RCW Nesting Season Survey 8-24-16.dwg Tab 6-12-A Jun 22, 2017 - 1:20pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "B"

DATE: JUNE 12, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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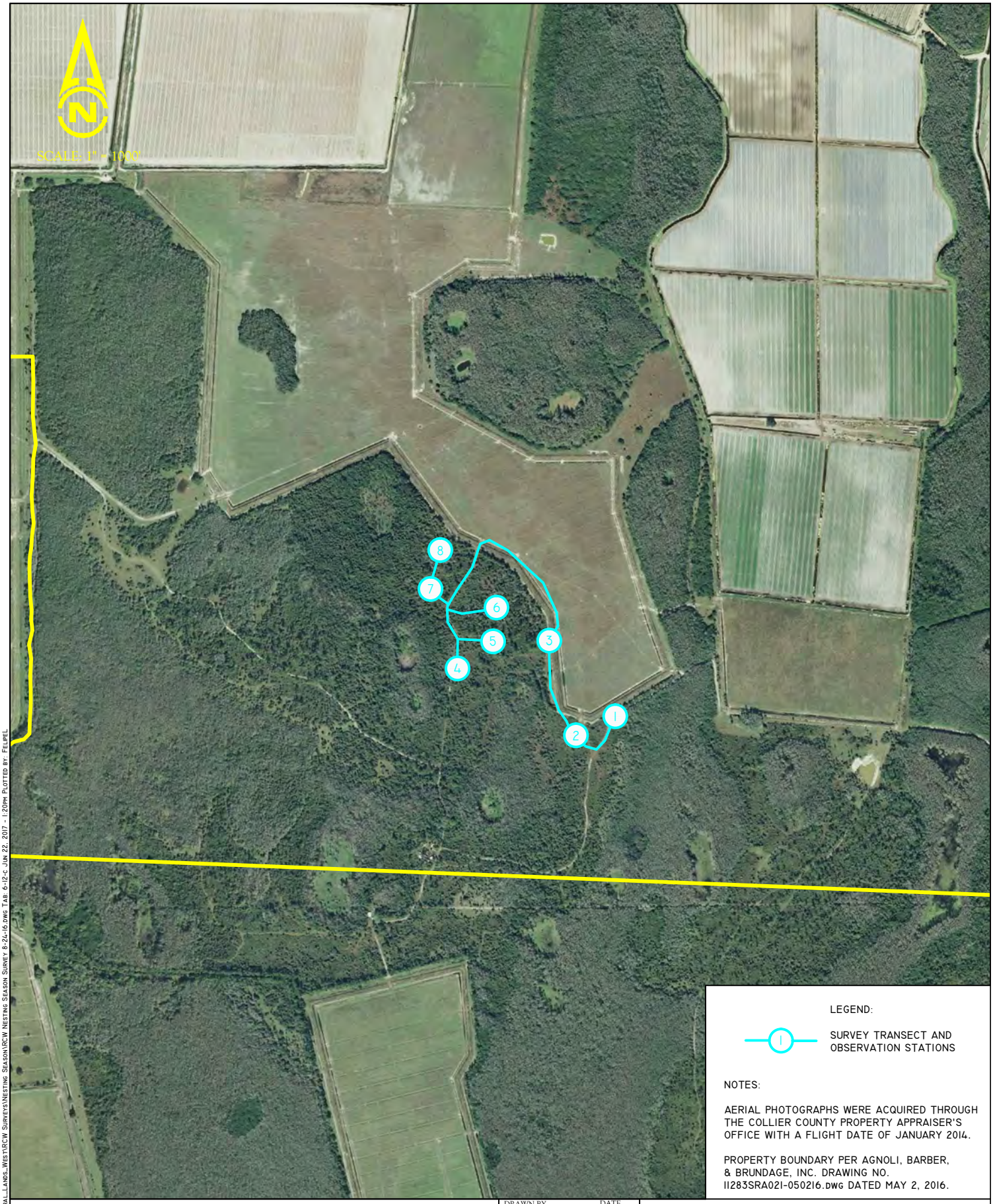

LEGEND:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "C"

DATE: JUNE 12, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

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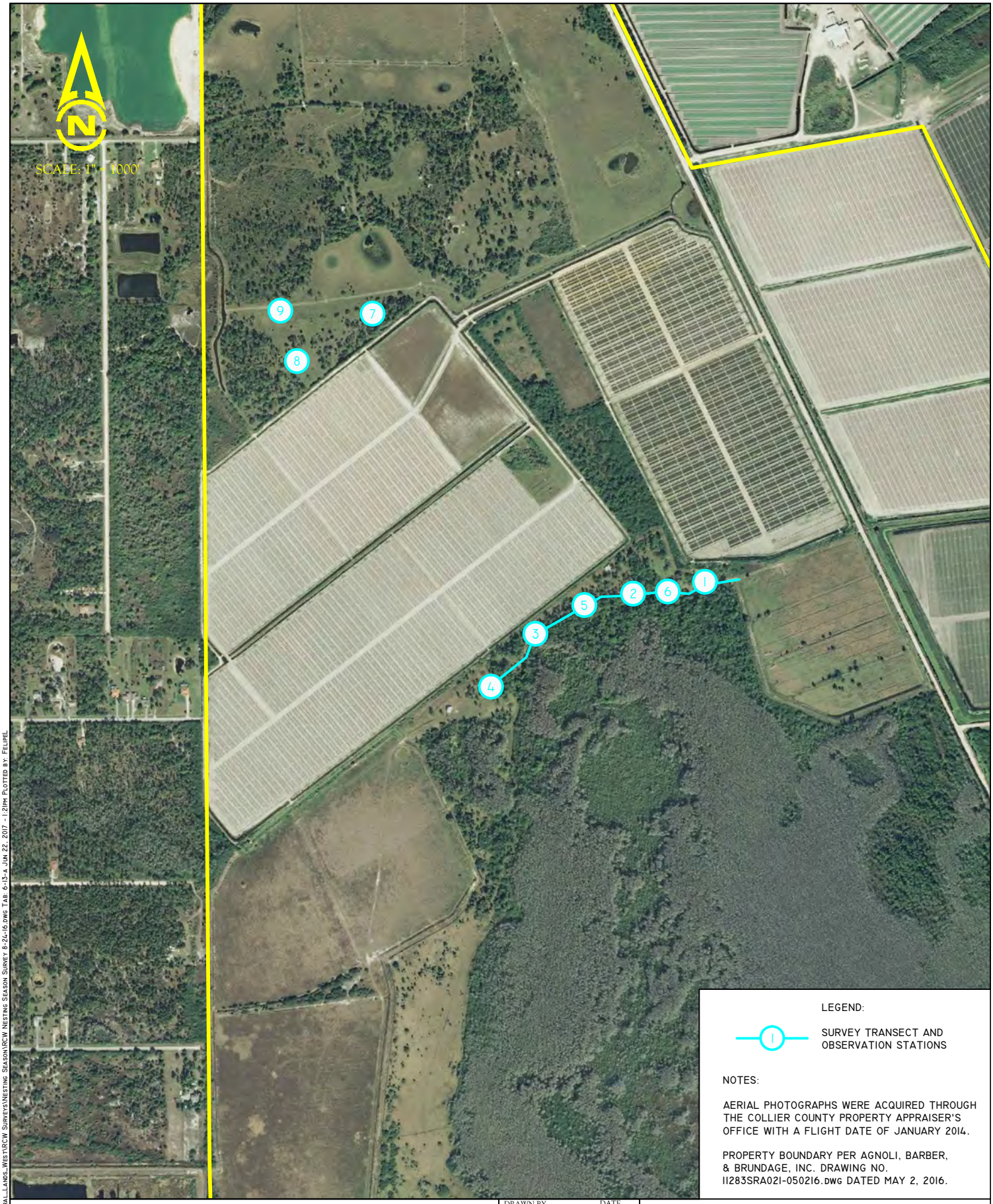

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "A"

DATE: JUNE 13, 2014

DRAWN BY	DATE
D.B.	6/19/14
REVIEWED BY	DATE
C.G.R.	6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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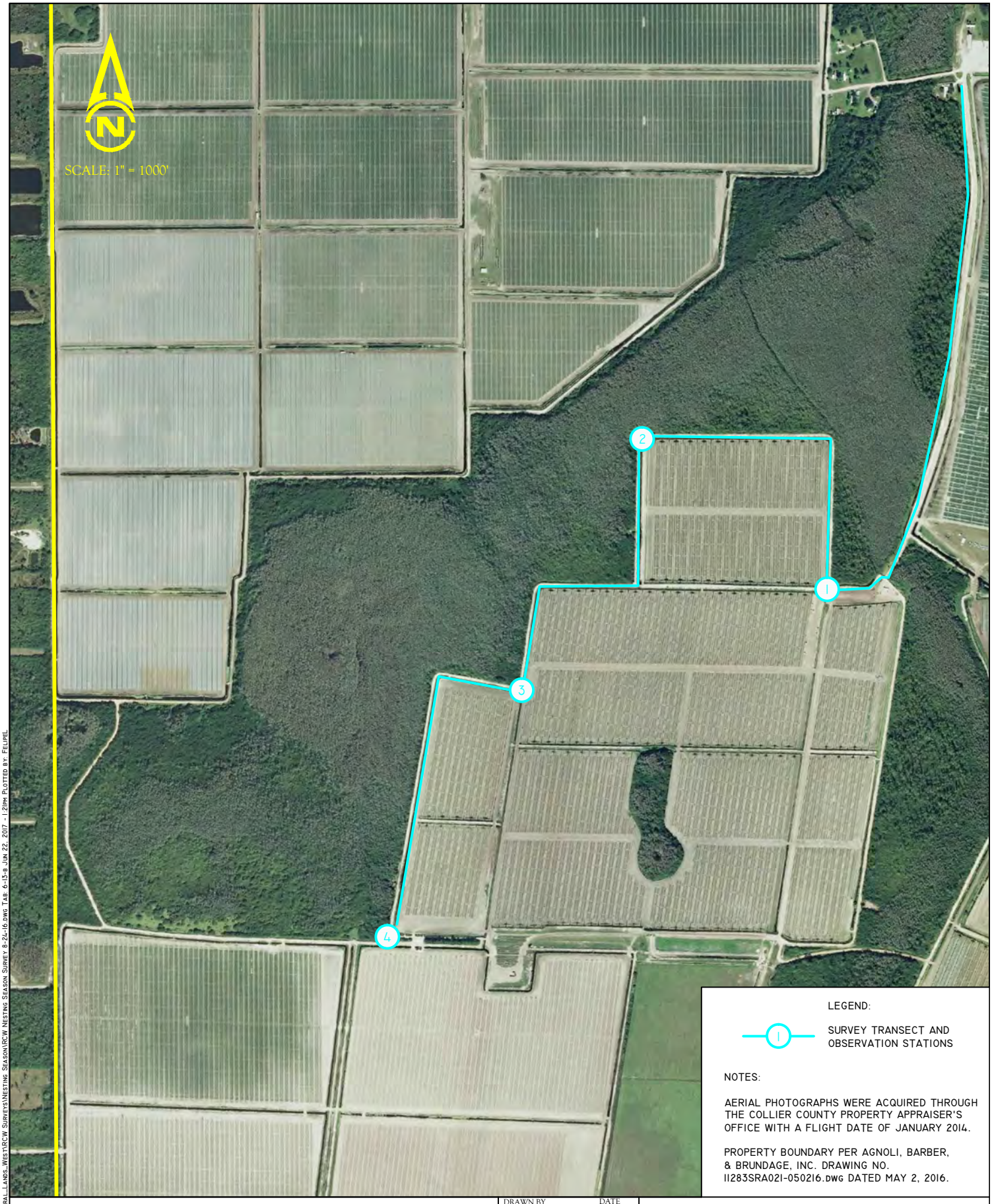

LEGEND:

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RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "B"

DATE: JUNE 13, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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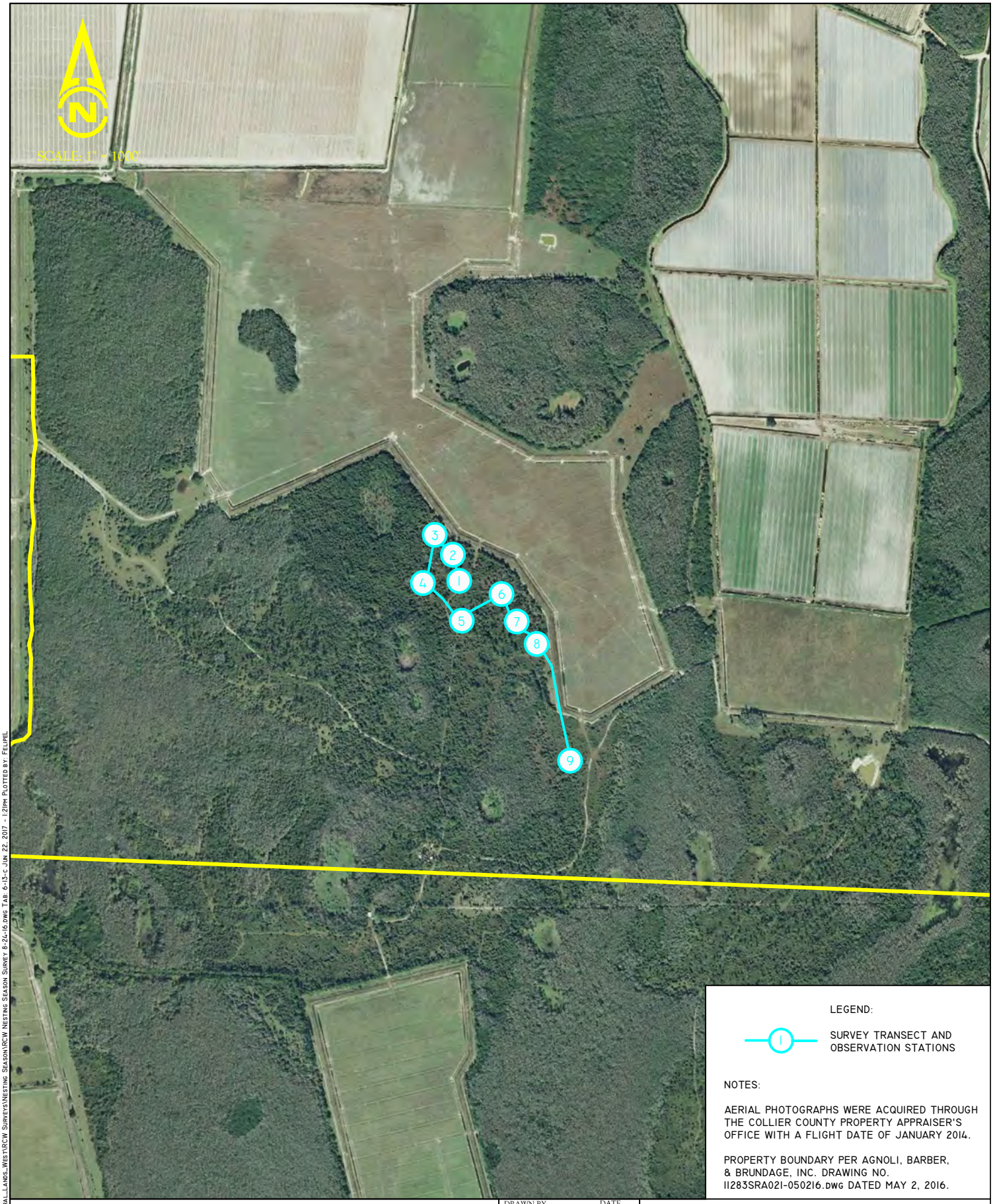

LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

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AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

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RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "C"

DATE: JUNE 13, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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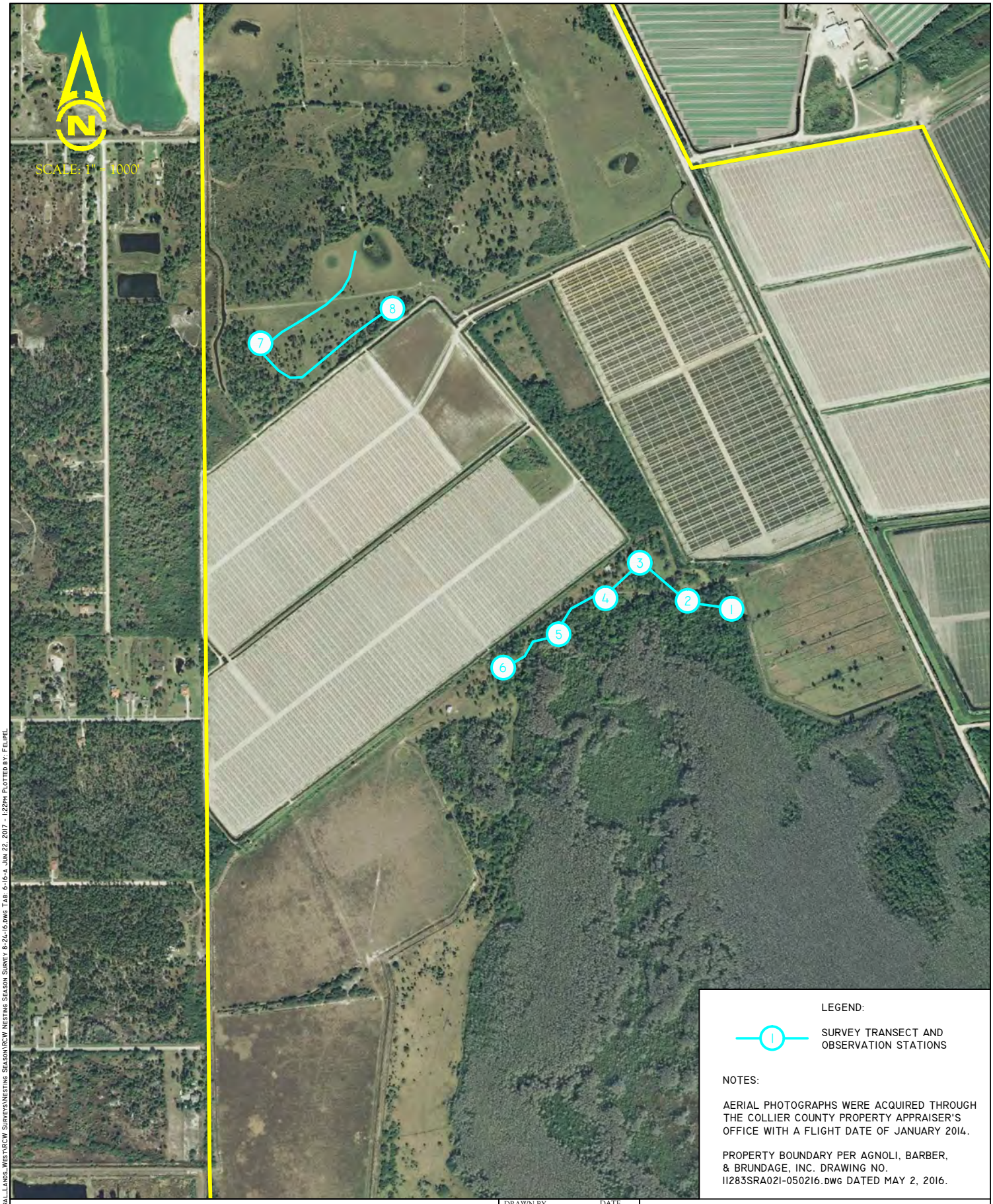

LEGEND:

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RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "A"

DATE: JUNE 16, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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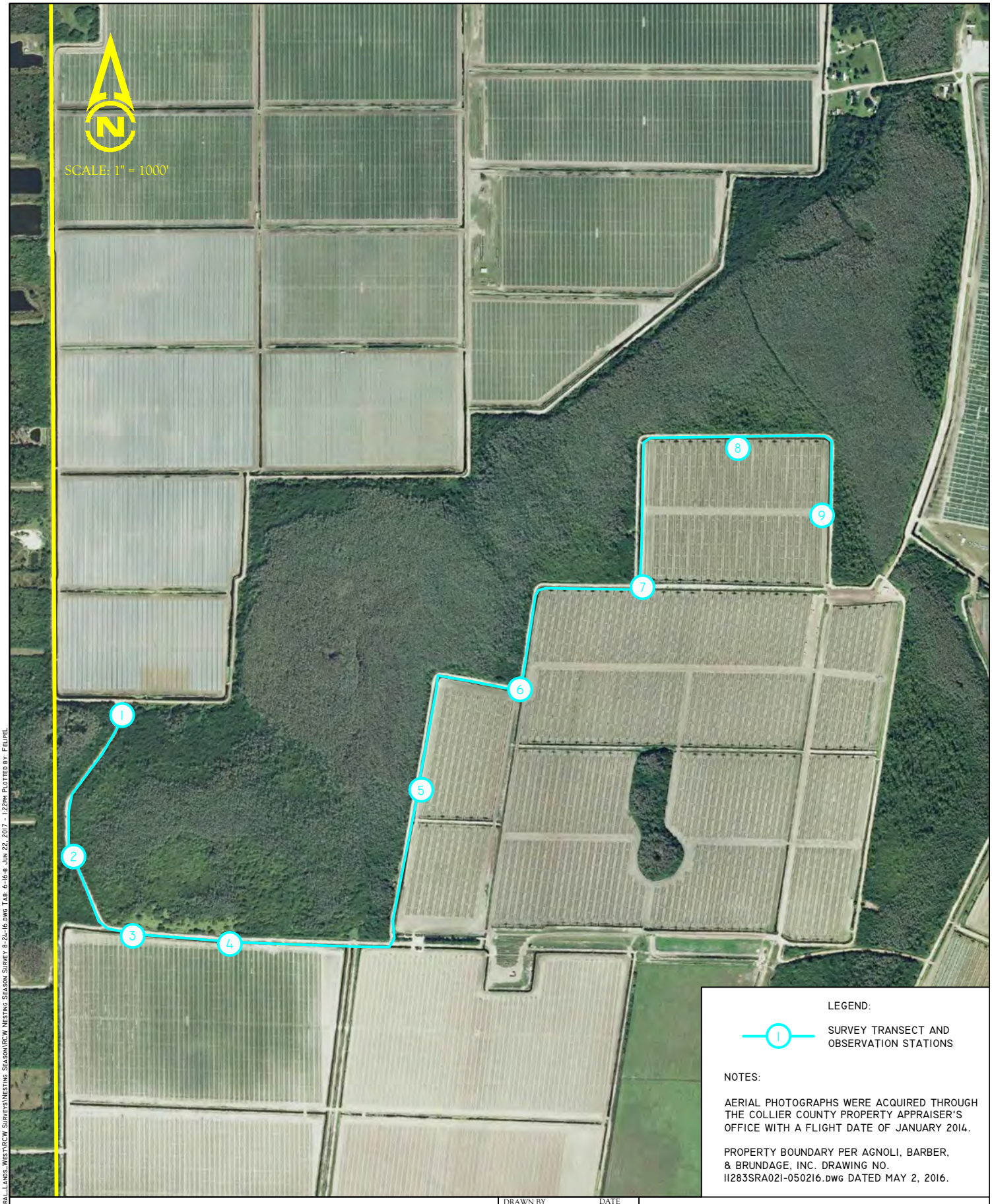

LEGEND:

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RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "B"

DATE: JUNE 16, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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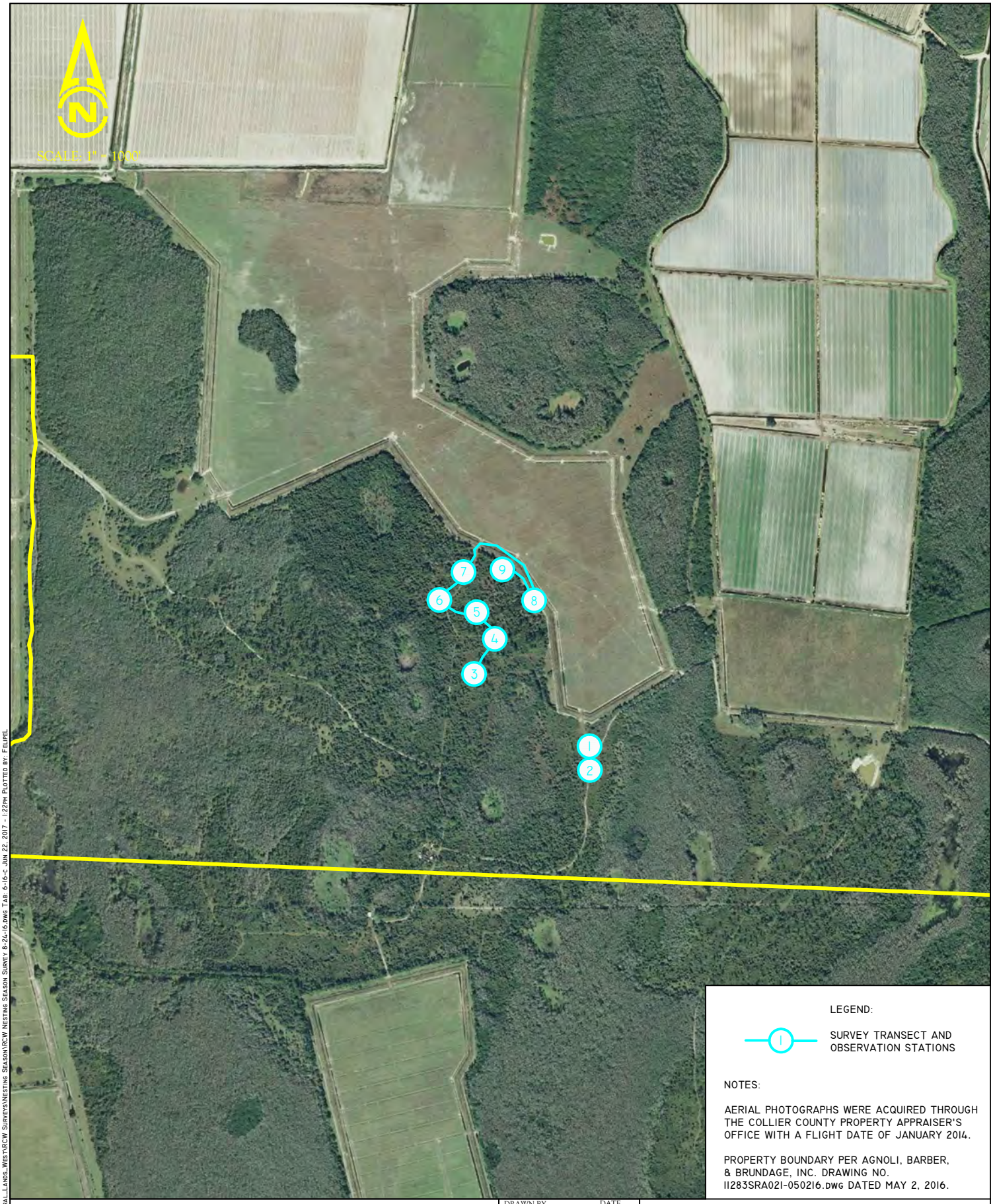

LEGEND:

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RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "C"

DATE: JUNE 16, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
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PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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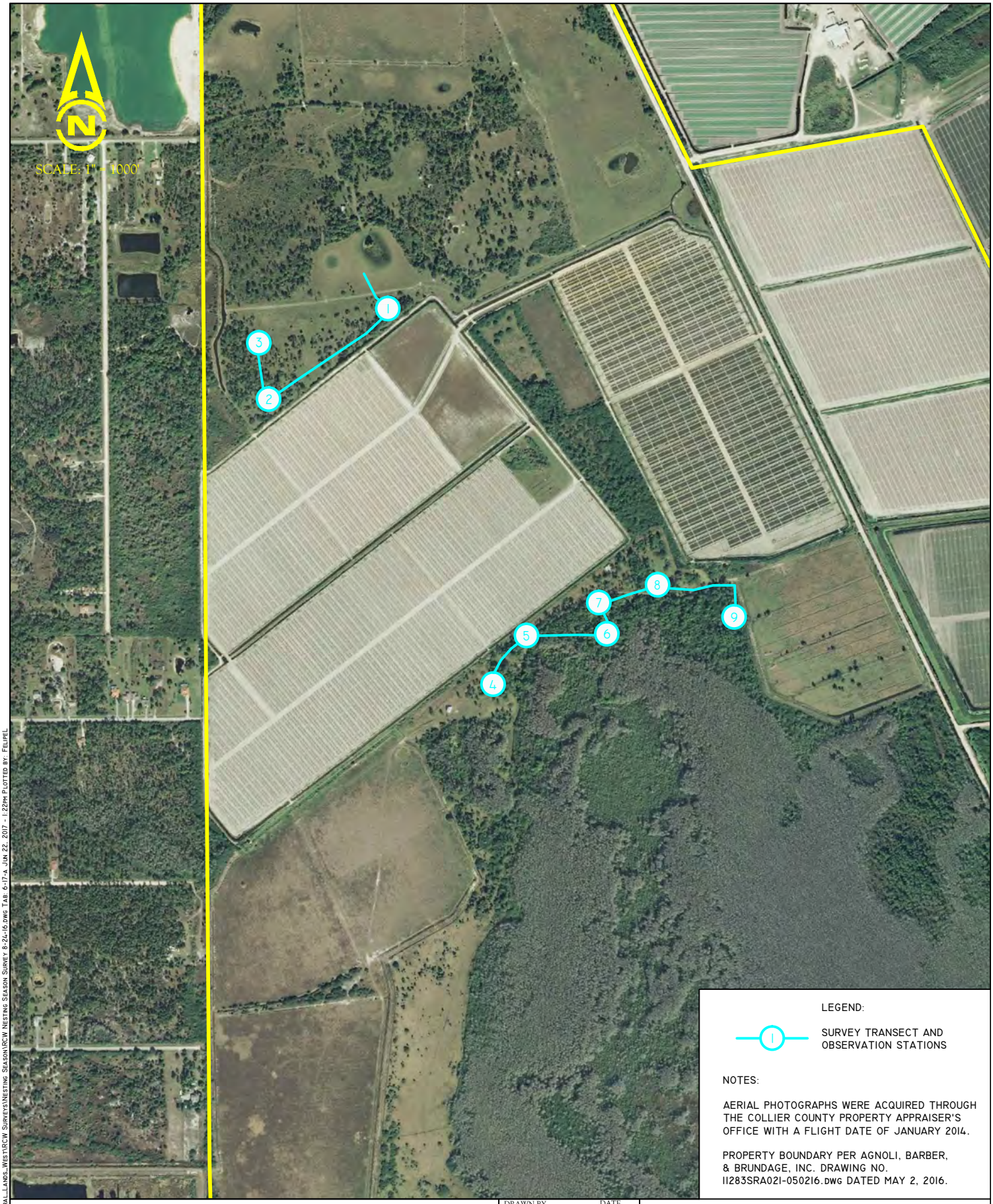

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RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "A"

DATE: JUNE 17, 2014

DRAWN BY	D.B.	DATE	6/19/14
REVIEWED BY	C.G.R.	DATE	6/19/14
REVISED		DATE	

PASSARELLA & ASSOCIATES INC
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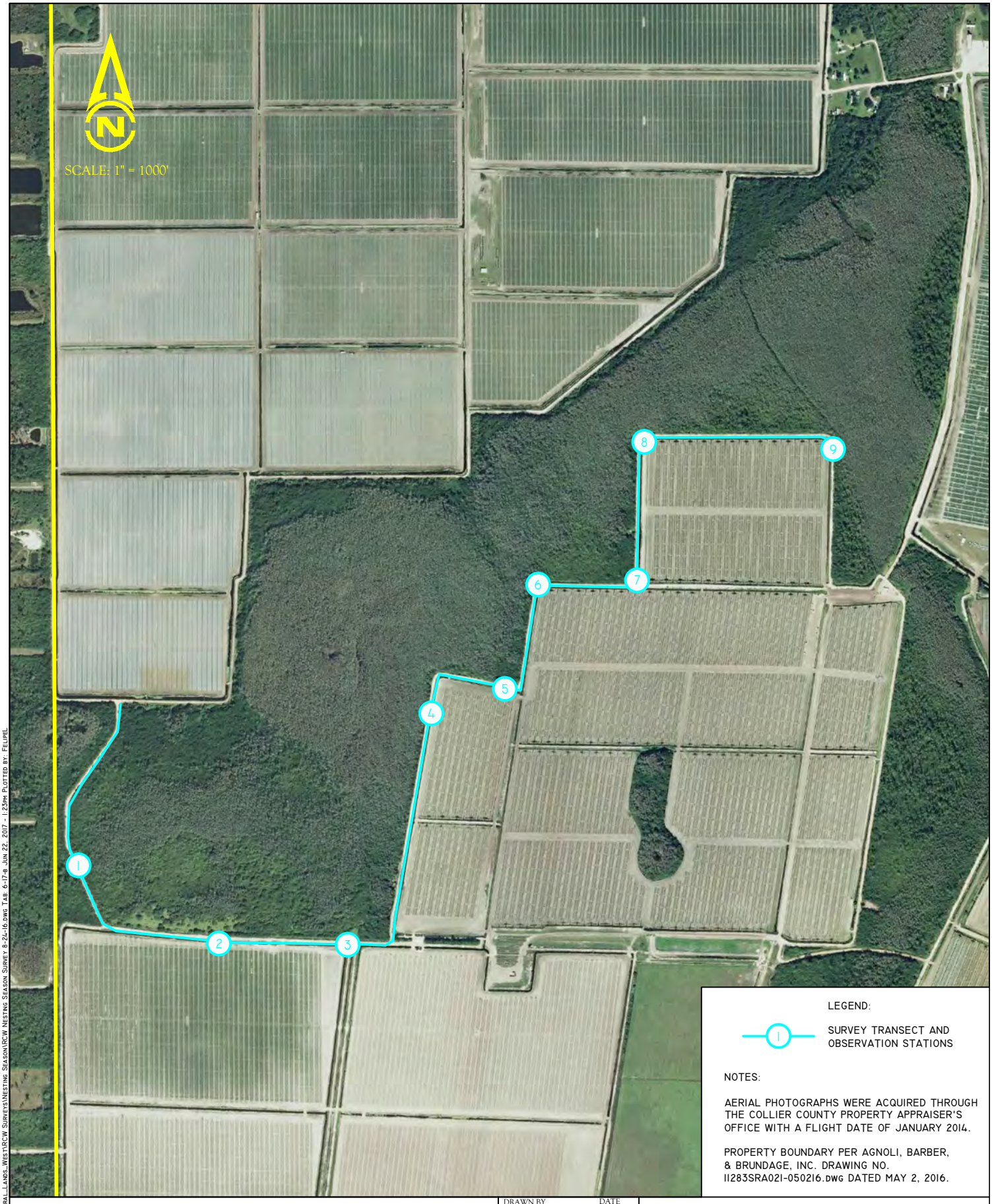

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RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

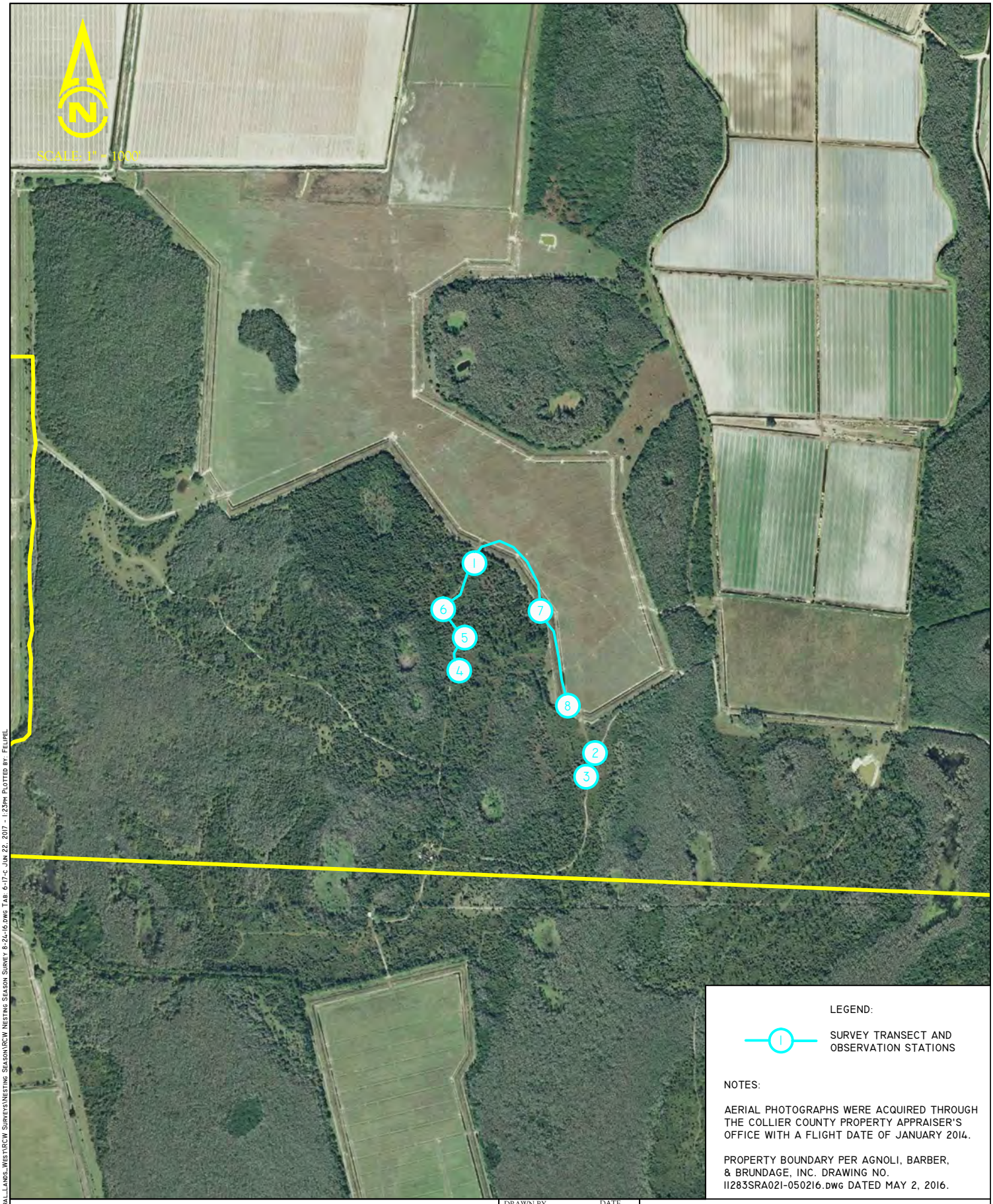
RURAL LANDS WEST - SURVEY AREA "B"

DATE: JUNE 17, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm148\100_RURAL_LANDS_WEST\RCW SURVEYS\NESTING SEASON\RCW NESTING SEASON SURVEY 8-24-16.DWG TAB 6-17-B JUN 22, 2017 - 1:23PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

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RED-COCKADED WOODPECKER NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "C"

DATE: JUNE 17, 2014

DRAWN BY: D.B.	DATE: 6/19/14
REVIEWED BY: C.G.R.	DATE: 6/19/14
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

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APPENDIX G

RCW NON-NESTING SEASON FORAGING SURVEY FIELD OBSERVATIONS

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 2, 2014
Survey Transect: A
Start time of survey: 0655 **Weather conditions:** Mostly clear sky (cloud cover 20 percent), no wind, and temperature at 66 degrees

End time of survey: 1025 **Weather conditions:** Cloudy sky (cloud cover 60 percent), wind at 5-10 mph, and temperature at 74 degrees

Observer: Mike Myers

Station	Time	Field Notes
1	0655	Observed mourning dove foraging on berm. Heard sandhill cranes to the south.
2	0710	Observed great egret foraging in pasture to the north. Heard and observed red-shouldered hawk fly to the north.
3	0725	Observed and heard red-shouldered hawk perched in pine snag to the north and red-bellied woodpeckers foraging on pines to the north and south. Observed blue-grey gnatcatcher and prairie warbler fly to the west and pileated woodpecker fly to the north.
4	0740	Observed common grackle fly to the north.
5	0755	Observed Eastern phoebe perched on top of Brazilian pepper to the west and common grackle perched on cypress snag to the south.
6	0815	Observed two black vultures perched in pine tree, six white ibises fly overhead to the north, and two gray squirrels chasing each other in the pines to the east. Heard Northern flicker to the south.
7	0915	Observed great egret in marsh area to the north.
8	0930	Heard red-bellied woodpeckers to the north. Observed black vulture soaring to the north and tree swallows fly to the east.
9	0945	Heard red-bellied woodpecker to the north.
10	0955	Observed a turkey vulture fly to the south. Observed and heard a belted kingfisher fly to the east.
11	1010	Observed turkey vulture soar to the west, three wood storks fly to the southeast, and black and white warbler foraging on pine to the north.
	1025	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 2, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** High cloud cover, no rain, wind from the north-northeast at 0-2 mph, and temperature in the low 60s

End time of survey: 1030 **Weather conditions:** Cloud cover 50 percent, wind at 5-10 mph, and temperature in the high 70s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0700	Heard gray catbirds. Observed great blue heron along ditch.
2	0725	Heard Carolina wren, blue-grey gnatcatcher, and gray catbirds. Observed blue-grey gnatcatchers. Observed wood stork on berm.
3	0750	Heard gray catbirds and pileated woodpecker. Observed tree swallows.
4	0815	Heard gray catbirds. Heard and observed palm warblers.
5	0835	Observed great egret and little blue heron along ditch. Observed black vulture, red-shouldered hawk, and common grackle. Heard and observed palm warbler.
6	0900	Heard red-bellied woodpecker. Observed white ibis. Heard and observed American robin and mourning dove.
7	0920	Heard common grackle, blue-grey gnatcatcher, and red-shouldered hawk. Observed turkey vulture and Northern cardinal.
8	0940	Heard gray catbirds and great crested flycatcher.
9	1000	Heard and observed palm warblers. Heard gray catbirds, red-shouldered hawk, and great crested flycatcher.
10	1020	Observed and heard palm warblers.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 2, 2014
Survey Transect: C
Start time of survey: 0700 **Weather conditions:** Cloud cover 20 percent, no precipitation, calm wind, and temperature in the high 60s

End time of survey: 0905 **Weather conditions:** Cloud cover 15 percent, no precipitation, calm wind, and temperature in the low 70s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0700	Heard and observed red-shouldered hawk and great blue herons. Observed white ibis. Heard gray catbird and sandhill cranes.
2	0715	Heard and observed Northern cardinal. Observed Florida panther tracks and merlin. Heard gray catbird.
3	0730	Heard and observed red-bellied woodpecker and pileated woodpecker. Heard mourning dove.
4	0745	Observed snowy egrets and tree swallows.
5	0800	Observed tri-colored heron and pileated woodpecker.
6	0815	Observed great egret, Eurasian collared dove, glossy ibis, and belted kingfisher.
7	0830	Heard and observed red-shouldered hawk. Observed Eastern phoebe.
8	0845	Observed great egret. Heard red-shouldered hawk.
9	0900	Observed belted kingfisher and roseate spoonbill.
	0905	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 3, 2014
Survey Transect: A
Start time of survey: 0655 **Weather conditions:** Clear sky, no wind, and temperature at 65 degrees

End time of survey: 1000 **Weather conditions:** Clear sky, wind from the northeast at 5-10 mph, and temperature at 74 degrees

Observer: Mike Myers

Station	Time	Field Notes
1	0655	Heard two great horned owls and sandhill cranes calling to the north. Observed seven sandhill cranes fly overhead to the south.
2	0715	Observed two palm warblers foraging in palmetto to the south, three sandhill cranes and a great egret fly overhead to the south, and eastern phoebe perched on top of oak tree to the north. Heard common grackle to the east.
3	0730	Observed five mourning doves fly to the north, a pileated woodpecker perched in pine snag to the west, and 30± tree swallows fly to the south. Heard gray catbird to the north and sandhill cranes to the south and north.
4	0740	Heard sandhill cranes to the east and red-bellied woodpecker to the south. Observed nine anhingas and four great egrets loafing and sunning themselves in a willow in the freshwater marsh to the north.
5	0800	Observed two European starlings perched in pine snag to the north, mourning dove perched in pine to the west, tree swallow fly to the west, red-bellied woodpecker perched in snag to the north, and anhinga fly to the west.
6	0815	Observed six mourning doves and great blue heron fly to the west and palm warbler perched briefly on pine snag and then fly to the west.
7	0830	Heard red-shouldered hawk to the north.
8	0845	Observed red-shouldered hawk perched on top of pine and then fly to the east. Heard sandhill cranes to the north.
9	0905	Observed two wild turkeys fly to the south on drive in and two turkey vultures fly to the north. Heard sandhill cranes to the south.
10	0920	Observed palm warbler foraging along fence line to the west.

Station	Time	Field Notes
11	0935	Observed three turkey vultures and one double-crested cormorant fly to the south. Heard sandhill cranes to the west.
12	0945	Observed sandhill crane fly to the south, 12 turkey vultures soar to the west, and 3 cattle egrets standing on spoil berm to the north. Heard and observed a red-shouldered hawk fly to the south.
	1000	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 3, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** Cloud cover 10 percent, no rain, calm wind, and temperature in the low 60s

End time of survey: 1015 **Weather conditions:** Cloud cover 5 percent, no rain, wind at 5-10 mph, and temperature in the mid 70s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0700	Heard gray catbirds and red-shouldered hawk.
2	0725	Heard gray catbirds, red-shouldered hawk, Northern cardinal, and belted kingfisher. Heard and observed palm warblers.
3	0745	Observed red-shouldered hawk and several white ibises along ditch. Heard gray catbird, great crested flycatcher, and blue-grey gnatcatcher.
4	0805	Observed five sandhill cranes flying south across field. Heard and observed palm warblers. Heard blue-grey gnatcatchers.
5	0830	Heard and observed Northern cardinals and gray catbirds. Observed mourning doves.
6	0905	Observed great blue heron, great egret, blue-grey gnatcatcher, wild turkeys, belted kingfisher, and mourning doves. Heard pileated woodpecker.
7	0925	Heard red-bellied woodpecker, blue-grey gnatcatcher, and gray catbird. Observed 16 wood storks flying east.
8	0945	Observed two turkey vultures.
9	1000	Observed turkey vulture. Heard and observed blue-grey gnatcatcher.
	1015	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 3, 2014
Survey Transect: C
Start time of survey: 0700 **Weather conditions:** Cloud cover 10 percent, wind east-northeast at 0-5 mph, and temperature in the low 60s

End time of survey: 0915 **Weather conditions:** Cloud cover 5 percent, wind east-northeast at 0-5 mph, and temperature in the low 70s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0700	Observed great blue heron, red-shouldered hawk, white ibis, great egret, pied-billed grebe, tri-colored heron, and merlin.
2	0715	Heard and observed red-bellied woodpecker and gray catbird. Observed blue-grey gnatcher and tree swallows. Heard common grackle.
3	0730	Heard and observed palm warblers. Observed belted kingfisher. Heard mourning doves.
4	0745	Observed Eastern phoebe and pileated woodpecker. Heard and observed pine warblers.
5	0800	Observed glossy ibis and European starlings. Heard and observed Eastern meadowlark.
6	0815	Observed anhingas. Heard blue jay. Heard and observed Northern cardinal.
7	0830	Heard and observed red-bellied woodpeckers. Observed red-shouldered hawk and vulture.
8	0845	Heard and observed mourning doves and red-bellied woodpecker. Heard Northern cardinal.
9	0900	Heard red-shouldered hawk. Observed black vulture
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 4, 2014
Survey Transect: A
Start time of survey: 0720 **Weather conditions:** Partly cloudy sky, wind at 5 mph, and temperature at 63 degrees

End time of survey: 1035 **Weather conditions:** Partly cloudy sky, wind at 5 mph, and temperature at 70 degrees

Observer: Heather Phillips

Station	Time	Field Notes
1	0720	Heard gray catbird and red-bellied woodpecker.
2	0730	Heard gray catbirds and blue-grey gnatcatcher. Heard and observed red-bellied woodpecker.
3	0740	Heard sandhill cranes to the north, gray catbirds, and blue jay. Heard and observed red-shouldered hawk. Observed great egrets flying over canopy.
4	0750	Heard and observed pine warbler. Heard gray catbird and red-bellied woodpeckers.
5	0900	Heard sandhill cranes to the south and pine warbler.
6	0940	Heard red-bellied woodpecker. Heard and observed Carolina wren and red-shouldered hawk.
7	1000	Heard and observed sandhill crane, great egret, and loggerhead shrike. Observed turkey vulture over canopy.
8	1025	Observed great egret. Heard Carolina wren and red-bellied woodpecker.
	1035	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 4, 2014
Survey Transect: B
Start time of survey: 0850 **Weather conditions:** Partly cloudy sky, light breeze at 5 mph, and temperature at 70 degrees

End time of survey: 1030 **Weather conditions:** Mostly sunny, breeze at 5-10 mph, and temperature at 75 degrees

Observer: Justin Heller

Station	Time	Field Notes
1	0850	Observed great blue heron, little blue heron, white ibis, pileated woodpecker, pine warblers, and great egret. Heard gray catbird.
2	0900	Observed pine warblers, turkey vulture flying, little blue heron, cattle egret, belted kingfisher, and great egret.
3	0910	Observed six wood storks on the berm, white ibis, Northern cardinal, mourning doves, a turkey vulture flying overhead, and a red-shouldered hawk in pine tree.
4	0925	Heard a gray catbird, belted kingfisher, and pileated woodpecker. Observed a great blue heron, red-shouldered hawk, red-bellied woodpecker, and anhinga.
5	0938	Observed pine warblers, great blue heron, gray catbird, anhinga, and red-shouldered hawk.
6	0950	Observed red-shouldered hawk, pine warblers, and anhinga. Heard belted kingfisher and gray catbird.
7	1000	Observed little blue heron, great egret, and pine warblers. Heard blue-grey gnatcatchers.
8	1010	Observed great blue heron and turkey vultures flying overhead. Heard blue-grey gnatcatcher.
9	1020	Heard killdeer. Observed turkey vulture, white ibis, and tree swallows fly overhead. Observed anhinga and two alligators in the ditch. Observed a great blue heron.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 4, 2014
Survey Transect: C
Start time of survey: 0720 **Weather conditions:** Mostly clear sky, calm wind, and temperature at 65 degrees

End time of survey: 1015 **Weather conditions:** Mostly clear sky, light wind at 5-7 mph, and temperature at 75 degrees

Observer: Andy Woodruff

Station	Time	Field Notes
1	0720	Heard sandhill cranes. Observed American kestrel and great blue heron.
2	0739	Heard red-shouldered hawk and rufous-sided towhee. Observed ground doves.
3	0802	Observed palm warbler and ground doves. Heard catbirds.
4	0827	Observed cormorant flying overhead, red-shouldered hawk, and black vulture. Heard red-bellied woodpecker and catbird.
5	0839	Heard red-shouldered hawk, catbird, grackles, Eastern meadowlark, and red-bellied woodpecker.
6	0901	Heard Eastern meadowlark, fish crow, and catbird. Observed loggerhead shrike and turkey vulture.
7	0917	Observed unidentified warblers and catbird.
8	0935	Observed blue-grey gnatcatchers.
9	0952	Observed mourning dove and swallows.
10	1015	Heard red-shouldered hawk and catbird.
	1015	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 5, 2014
Survey Transect: A
Start time of survey: 0705 **Weather conditions:** Overcast sky, occasional light rain, calm wind, and temperature in the mid 60s

End time of survey: 1030 **Weather conditions:** Cloud cover 60 percent, no rain, wind from the north-northeast at 5-10 mph, and temperature in the mid 70s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0705	Heard sandhill cranes and gray catbirds.
2	0725	Heard gray catbirds, sandhill cranes, and ground doves.
3	0740	Observed Northern mockingbird. Heard Eastern meadowlark, red-bellied woodpecker, and red-shouldered hawk. Observed tree swallows overhead.
4	0755	Heard red-bellied woodpecker, Eastern meadowlark, blue-grey gnatcatcher, red-shouldered hawk, and common nighthawks. Observed tree swallows.
5	0810	Heard pileated woodpeckers, Eastern gray squirrel, red-bellied woodpecker, and gray catbirds. Observed mourning doves. Heard and observed American crow.
6	0825	Heard Eastern meadowlarks and gray catbirds.
7	0840	Heard blue-grey gnatcatcher, gray catbirds, Eastern meadowlark, and pileated woodpecker.
8	0855	Heard Eastern meadowlark, red-bellied woodpecker, and blue jay.
9	0930	Heard and observed catbirds. Heard pileated woodpecker and Carolina wren. Observed mourning dove.
10	0945	Heard red-bellied woodpecker, blue-grey gnatcatcher, and gray catbirds.
11	1000	Heard and observed Eastern gray squirrel. Heard pileated woodpecker and gray catbird.
12	1015	Heard and observed red-bellied woodpecker and mourning dove.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 5, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** Cloudy sky with scattered rain, wind at 5 mph, and temperature at 65 degrees

End time of survey: 1020 **Weather conditions:** Partly cloudy sky, wind at 5 mph, and temperature at 78 degrees

Observer: Heather Phillips

Station	Time	Field Notes
1	0700	Heard gray catbird and Carolina wren. Observed red-shouldered hawk, great egret, and anhinga.
2	0720	Observed wood storks over canopy. Heard gray catbird and brown-headed nuthatch.
3	0740	Observed American alligator and red-shouldered hawk. Heard pine warbler.
4	0800	Observed great blue heron. Heard gray catbird, red-bellied woodpecker, and blue-grey gnatcatcher.
5	0825	Heard and observed pileated woodpecker. Observed red-bellied woodpecker, red-shouldered hawk, and wood stork.
6	0840	Observed belted kingfisher. Heard and observed pine warbler. Heard red-bellied woodpecker.
7	0900	Heard gray catbird and blue-grey gnatcatcher.
8	0935	Heard pine warblers and Carolina wren. Observed common ground dove.
9	0950	Observed common yellowthroat. Heard gray catbirds.
10	1010	Heard gray catbird and blue-grey gnatcatcher. Observed unknown warbler species.
	1020	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 5, 2014
Survey Transect: C
Start time of survey: 0700 **Weather conditions:** Cloud cover 100 percent, light precipitation, wind north-northeast at 0-5 mph, and temperature in the mid 60s

End time of survey: 0915 **Weather conditions:** Cloud cover 40 percent, no precipitation, calm wind, and temperature in the high 70s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0700	Heard mourning dove and red-bellied woodpecker. Heard and observed red-shouldered hawk and common grackles. Observed white ibis and wood storks.
2	0715	Heard and observed palm warblers, gray catbirds, and American kestrel.
3	0730	Heard and observed Northern cardinal. Heard gray catbird. Observed Eastern phoebe and great egret.
4	0745	Observed red-bellied woodpecker. Heard and observed mourning doves. Light rain. Heard gray catbirds.
5	0800	Heavy rain. No birds heard or observed.
6	0815	Observed great blue heron. Heard and observed pileated woodpecker, red-shouldered hawk, and common grackles.
7	0830	Light rain. Observed palm warblers and snowy egrets. Heard red-shouldered hawk
8	0845	Heard gray catbirds and hairy woodpecker. Observed double-crested cormorant and red-shouldered hawk.
9	0900	Heard and observed red-shouldered hawk. Observed black vultures and little blue heron.
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 8, 2014
Survey Transect: A
Start time of survey: 0700 **Weather conditions:** Overcast sky, no rain, wind from the northeast at 3-5 mph, and temperature in the high 50s

End time of survey: 1030 **Weather conditions:** Overcast sky, no rain, wind from the northeast at 2-5 mph, and temperature in the low 60s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0700	Heard gray catbirds, sandhill cranes, and roosters.
2	0720	Heard red-bellied woodpecker, gray catbird, and roosters.
3	0735	Heard downy woodpecker, common nighthawk, mourning dove, sandhill cranes to the north, roosters, and red-bellied woodpecker.
4	0755	Heard blue-grey gnatcatcher and red-bellied woodpecker. Heard and observed American robins and red-shouldered hawk. Observed red-bellied woodpecker.
5	0810	Heard and observed red-bellied woodpecker, mourning doves, and American crow.
6	0825	Heard great crested flycatcher. Heard and observed tree swallows.
7	0840	Heard mourning dove, sandhill cranes in distance, blue-grey gnatcatcher, and gray catbirds.
8	0930	Heard gray catbirds and great crested flycatcher.
9	0942	Heard and observed downy woodpecker. Heard great crested flycatcher.
10	0956	Observed turkey vulture overhead. Heard gray catbird and Eastern meadowlark.
11	1012	Heard blue jay and pileated woodpecker.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 8, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** Overcast sky with fog, wind north at 5-10 mph, and temperature in the mid 50s

End time of survey: 1030 **Weather conditions:** Overcast sky, wind north at 5-10 mph, and temperature in the high 50s

Observer: Chase Conley

Station	Time	Field Notes
1	0700	Observed gray catbird, coyote, red-shouldered hawk, and wood stork. Loud irrigation pump running.
2	0720	Observed great heron, ibis, and red-shouldered hawk.
3	0745	Observed great blue heron, ibis, red-winged blackbird, and wood stork. Irrigation pumps running.
4	0805	Observed pine warbler, hawk, worm-eating warbler, and common grackle.
5	0830	Observed two otters and Northern cardinal.
6	0845	Observed mourning dove. Observed cormorants flying south to north.
7	0905	Observed two painted buntings and another otter.
8	0925	Observed belted kingfisher, pine warbler, red-shouldered hawk, loud noise from irrigation pump, common grackle, and purple gallinule.
9	0945	Observed pine warbler, great blue heron, little blue heron, and gray catbird. Heard red-bellied woodpecker to the west. Observed white ibis and roseate spoonbills flying northeast to southwest.
10	1000	Observed multiple pine warblers, a great blue heron, and a gray catbird.
11	1015	Observed multiple pine and worm-eating warblers, gray catbirds, and blue-grey gnatcatcher.
12	1030	Observed great blue heron, great egret, and red-shouldered hawk.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 8, 2014
Survey Transect: C
Start time of survey: 0700 **Weather conditions:** Cloud cover 100 percent, foggy conditions, wind northwest at 0-5 mph, and temperature in the high 50s

End time of survey: 0915 **Weather conditions:** Cloud cover 80 percent, wind northwest at 0-5 mph, and temperature in the high 60s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0700	Heard and observed red-shouldered hawk and mourning doves. Observed great egret, wood stork, and white ibis. Heard gray catbird.
2	0715	Heard red-bellied woodpeckers, gray catbird, and palm warblers. Observed wild turkeys and pileated woodpecker. Heard and observed common grackles.
3	0730	Heard red-bellied woodpeckers, sandhill cranes, and mourning doves. Heard and observed blue jay.
4	0745	Heard Northern cardinals and fish crow. Heard and observed common grackles.
5	0800	Heard palm warblers, gray catbirds, and red-shouldered hawk. Heard and observed red-bellied woodpecker. Observed white ibis.
6	0815	Heard downy woodpecker. Observed tree swallows.
7	0830	Heard and observed palm warblers. Heard gray catbirds. Observed Eastern phoebe.
8	0845	Heard and observed common grackles. Observed tri-colored heron and red-shouldered hawk.
9	0900	Observed little blue heron, white ibis, and great egret. Heard killdeer.
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 9, 2014
Survey Transect: A
Start time of survey: 0730 **Weather conditions:** Cloudy sky with light rain, wind at 7 mph, and temperature at 57 degrees

End time of survey: 1030 **Weather conditions:** Cloudy sky, wind at 7 mph, and temperature at 60 degrees

Observer: Heather Phillips

Station	Time	Field Notes
1	0730	Heard blue-grey gnatcatcher, Carolina wren, and American crow. Observed black vulture. Heard and observed pine warbler.
2	0745	Observed black vulture and gray squirrel. Heard red-bellied woodpecker, gray catbird, Carolina wren, pileated woodpecker, and blue jay.
3	0800	Heard and observed American crow. Heard pileated woodpecker.
4	0815	Observed sandhill crane flying over canopy. Heard pileated woodpecker, Carolina wren, gray catbird, and red-bellied woodpecker.
5	0845	Heard Northern mockingbird and blue-grey gnatcatcher. Observed turkey vulture and unknown sparrow species.
6	0900	Observed unknown sparrow species. Heard gray catbird and American crow.
7	0915	Heard pine warbler, blue-grey gnatcatcher, and red-bellied woodpecker.
8	0930	Observed sandhill cranes. Heard red-bellied woodpecker and red-shouldered hawk.
9	0945	Heard red-bellied woodpecker and gray catbird. Observed great egret. Heard and observed pine warbler.
10	1000	Observed killdeer. Heard Northern mockingbird and Carolina wren. Heard and observed red-bellied woodpecker.
11	1015	Heard pine warblers, Northern mockingbird, and gray catbird. Observed great blue heron and great egret.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 9, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** Cloudy sky, misting rain, light breeze at < 3 mph, and temperature at 55 degrees

End time of survey: 0915 **Weather conditions:** Cloudy sky, breezy wind at 10 mph, and temperature at 58 degrees

Observer: Justin Heller

Station	Time	Field Notes
1	0700	Observed pine warblers and white ibis. Heard Carolina wren and red-shouldered hawk to the northeast.
2	0715	Heard pine warblers, gray catbird, and Carolina wren. Observed white ibis on cypress trees, great egret, and little blue heron.
3	0730	Observed turkey vultures flying overhead, pine warblers, great egret, white ibis, cattle egret, and a wood stork on the farm berm. Heard a blue-grey gnatcatcher.
4	0740	Observed pine warblers, common grackle, little blue heron, Eastern phoebe, and gray catbird.
5	0755	Heard blue-grey gnatcatcher, pine warblers, pileated woodpecker, and Carolina wren. Observed a great blue heron, little blue heron, common grackle, anhinga, and white ibis.
6	0805	Observed great blue heron, common grackle, and pine warbler. Heard a blue-grey gnatcatcher.
7	0815	Observed pine warblers, black and white warbler, common grackle, Eastern phoebe, Northern cardinal, ground dove, and boat-tailed grackle.
8	0830	Observed ground doves, white ibis, and pine warblers.
9	0845	Observed common grackle, belted kingfisher, turkey vulture flying overhead, red-bellied woodpecker, white ibis, great blue heron, pine warblers, and great crested flycatcher.
10	0855	Observed turkey vultures flying overhead. Observed pine warblers and gray squirrels on pine trees. Heard killdeer to the north.
11	0905	Heard gray catbird. Observed pine warblers.
	0915	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 9, 2014
Survey Transect: C
Start time of survey: 0715 **Weather conditions:** Overcast sky, occasional light drizzle, wind from the northwest at 0-5 mph, and temperature in the mid 50s

End time of survey: 0920 **Weather conditions:** Overcast sky, no rain, wind from the northwest at 5-15 mph, and temperature in the high 50s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0715	Heard red-shouldered hawk, killdeer in the field, and gray catbird.
2	0730	Heard Carolina wren.
3	0745	Observed a Florida black bear, black vulture overhead, three wood storks flying south, ground doves on the trail, and another bear.
4	0800	Observed great egret fly over.
5	0815	Observed black vulture. Heard red-bellied woodpecker and blue-grey gnatcatcher.
6	0830	Heard and observed gray catbirds.
7	0845	Observed wood stork along ditch. Heard red-shouldered hawk to the east and gray catbirds.
8	0900	No birds heard or observed.
9	0915	Heard killdeer in the field. Heard and observed palm warbler. Observed red-shouldered hawk.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 10, 2014
Survey Transect: A
Start time of survey: 0700 **Weather conditions:** Clear sky, calm wind, and temperature at 44 degrees

End time of survey: 1045 **Weather conditions:** Clear sky, wind at 5-8 mph, and temperature at 60 degrees

Observer: Andy Woodruff

Station	Time	Field Notes
1	0700	Observed sandhill cranes, loggerhead shrike, and Eastern phoebe. Heard Eastern meadowlark, blue jay, and catbird.
2	0717	Observed roseate spoonbills flying overhead. Heard blue jays, roosters, catbirds, and sandhill cranes.
3	0732	Observed loggerhead shrike. Heard catbirds, roosters, and blue jay.
4	0750	Heard American kestrel and red-bellied woodpecker.
5	0816	Observed wood stork, roseate spoonbill, greater yellowlegs, white ibis, great egret, little blue heron, killdeer, great blue heron, anhinga, and tri-colored heron. Heard catbird and kingfisher.
6	0831	Heard red-bellied woodpecker.
7	0850	Heard catbird, mourning dove, and blue-grey gnatcatcher. Observed palm warbler, swallows, and downy woodpecker.
8	0917	Heard American kestrel and catbirds. Observed greater yellowlegs.
9	0950	Heard red-shouldered hawk and pileated woodpecker. Observed turkey vultures, warblers, and great blue heron.
10	1010	Heard red-bellied woodpecker, warblers, and catbird.
11	1027	Heard fish crow. Observed palm warblers.
12	1045	Observed red-shouldered hawk.
	1045	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 10, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** Clear sky, wind at 5-10 mph, and temperature in the mid 40s

End time of survey: 1015 **Weather conditions:** Clear sky, wind at 5-10 mph, and temperature in the mid 50s

Observer: Chase Conley

Station	Time	Field Notes
1	0700	Observed red-shouldered hawk to the south, common grackle to the west, and roseate spoonbills flying east to west.
2	0720	Observed multiple pine warblers and common grackles. Heard red-shouldered hawk to the west.
3	0740	Observed Northern cardinal, great blue heron, ibis, and two red-shouldered hawks.
4	0810	Observed pileated woodpecker, multiple species of warblers, belted kingfisher, little blue heron, and great blue heron.
5	0840	Observed American kestrel, red-shouldered hawk, gray catbird, pine warblers, and red-bellied woodpecker.
6	0900	Observed mourning doves.
7	0915	Observed great blue heron, ibis, Northern cardinal, American kestrel, and white pelicans flying above.
8	0935	Observed otters and gray catbirds.
9	0950	Observed great blue heron, purple gallinule, and American kestrel.
10	1015	Observed red-shouldered hawk, American kestrel, and great blue heron.
	1015	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 10, 2014
Survey Transect: C
Start time of survey: 0730 **Weather conditions:** Sunny, wind at 0 mph, and temperature at 39 degrees

End time of survey: 0935 **Weather conditions:** Sunny, wind at 5 mph, and temperature at 45 degrees

Observer: Heather Phillips

Station	Time	Field Notes
1	0730	Heard gray catbird, sandhill crane, pileated woodpecker, pine warbler, red-shouldered hawk, and Carolina wren.
2	0750	Heard gray catbird, brown-headed nuthatch, pileated woodpecker, and sandhill cranes. Heard and observed pine warbler. Observed Northern cardinal and common ground dove.
3	0810	Heard and observed common grackles. Heard gray catbird and blue-grey gnatcatcher.
4	0830	Heard gray catbird and brown-headed nuthatch.
5	0850	Heard and observed pine warbler. Heard pileated woodpecker and red-shouldered hawk.
6	0910	Heard pine warbler, sandhill crane, and red-shouldered hawk. Observed wood stork over canopy.
7	0925	Heard Northern mockingbird, sandhill crane, and pine warbler. Observed great egret.
	0935	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 11, 2014
Survey Transect: A
Start time of survey: 0700 **Weather conditions:** Clear sky, calm wind, and temperature at 45 degrees

End time of survey: 1045 **Weather conditions:** Clear sky, light wind at 3-5 mph, and temperature at 60 degrees

Observer: Andy Woodruff

Station	Time	Field Notes
1	0700	Observed Northern flicker, white ibis, greater yellowlegs, sandhill crane, loggerhead shrike, common egret, and great blue heron.
2	0722	Heard catbirds, Eastern meadowlark, Northern flicker, and white-eyed vireo. Observed Eastern phoebe.
3	0740	Observed boat-tailed grackle. Heard red-shouldered hawk and fish crow.
4	0805	Observed killdeer, great blue heron, sandhill crane, anhinga, boat-tailed grackle, common egret, and pied-billed grebe.
5	0820	Observed American robins, red-bellied woodpecker, and palm warbler.
6	0835	Heard red-bellied woodpecker, red-shouldered hawk, and Eastern meadowlark. Observed blue-grey gnatcatcher and catbird.
7	0852	Observed blue-grey gnatcatcher. Heard sandhill cranes, catbirds, red-shouldered hawk, Eastern meadowlark, and blue jay.
8	0912	Heard blue jay, white-eyed vireo, and catbird. Observed mockingbird and downy woodpecker.
9	0951	Heard red-shouldered hawk, red-bellied woodpecker, and catbird.
10	1010	Observed blue jay, turkey vulture, and catbird. Heard red-shouldered hawk and Northern flicker.
11	1032	Observed red-bellied woodpecker, catbird, and turkey vulture.
	1045	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 11, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** Clear sky, wind north at around 5 mph, and temperature in the low 40s

End time of survey: 1015 **Weather conditions:** Clear sky, wind north at around 5 mph, and temperature in the high 50s

Observer: Chase Conley

Station	Time	Field Notes
1	0700	Observed Florida panther, pine and palm warblers, and red-shouldered hawk.
2	0715	Observed multiple painted buntings, pine and palm warblers, blue-grey gnatcatcher, Northern cardinal, and white ibis.
3	0740	Observed multiple red-shouldered hawks and gray catbirds.
4	0800	Observed downy woodpecker and red-bellied woodpecker.
5	0820	Observed American kestrel and great blue heron.
6	0840	Observed two limpkins. Heard pileated woodpecker to the west.
7	0855	Observed great blue herons, gray catbirds, and common grackles.
8	0910	Observed downy woodpecker, mourning doves, pine warblers, and an otter.
9	0930	Observed gray catbird. Heard red-bellied woodpecker to the north.
10	0945	Observed American kestrel, a species of sandpiper, and purple gallinule.
11	1000	Heard downy woodpecker to the west. Observed great blue heron and little blue heron.
	1015	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 11, 2014
Survey Transect: C
Start time of survey: 0715 **Weather conditions:** Partly cloudy sky, wind at 0 mph, and temperature at 42 degrees

End time of survey: 0945 **Weather conditions:**

Observer: Heather Phillips

Station	Time	Field Notes
1	0715	Heard Northern mockingbird, pine warbler, red-bellied woodpecker, and pileated woodpecker. Heard and observed common grackles.
2	0725	Heard and observed sandhill cranes. Observed black vulture, blue-grey gnatcatcher, wood stork, snowy egret, and tri-colored heron. Heard gray catbird, killdeer, and red-shouldered hawk.
3	0745	Heard red-shouldered hawk, gray catbird, and pine warbler. Observed white ibis.
4	0805	Heard and observed common yellowthroat, gray catbird, common grackle, and brown-headed nuthatch. Observed white ibis over canopy. Heard red-bellied woodpecker.
5	0825	Heard gray catbird, pileated woodpecker, sandhill crane to the east, and blue-grey gnatcatcher.
6	0845	Heard pine warbler and gray catbird. Heard and observed common grackle and red-bellied woodpecker. Observed great egret flying over canopy.
7	0905	Heard and observed red-bellied woodpecker, downy woodpecker, and common yellowthroat. Heard Carolina wren and pine warbler.
8	0925	Heard and observed unknown swallow species and downy woodpecker. Heard gray catbird and Carolina wren.
	0945	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 12, 2014
Survey Transect: A
Start time of survey: 0700 **Weather conditions:** Cloud cover 60 percent, light fog, calm wind, and temperature in the high 40s

End time of survey: 0945 **Weather conditions:** Cloud cover 70 percent, wind north at 0-5 mph, and temperature in the mid 50s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0700	Heard gray catbird and palm warblers. Observed snowy egrets.
2	0715	Heard sandhill cranes, Eastern meadowlark, gray catbirds, and Northern cardinal.
3	0730	Heard and observed red-shouldered hawk. Observed snowy egret.
4	0745	Heard and observed red-shouldered hawk. Heard Eastern meadowlark, palm warblers, and gray catbird. Observed coyote.
5	0800	Observed anhinga, wood stork, white ibis, roseate spoonbills, great blue heron, and tri-colored heron. Heard and observed killdeer.
6	0815	Heard Eastern meadowlark and blue jay.
7	0830	Observed great egret.
8	0900	Observed white ibis and pileated woodpecker. Heard red-bellied woodpecker.
9	0915	Heard red-bellied woodpecker. Heard and observed Northern cardinal. Observed turkey vultures and great blue heron.
10	0930	Observed wild turkeys. Heard and observed blue-grey gnatcatcher and great crested flycatcher.
	0945	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 12, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** Cloud cover 10 percent, no rain, wind north-northwest at 0-5 mph, and temperature at 47 degrees

End time of survey: 1030 **Weather conditions:** Cloud cover 90 percent, no rain, wind north-northwest at 0-5 mph, and temperature in the mid 50s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0700	Observed painted bunting. Heard and observed palm warbler.
2	0718	Heard and observed belted kingfisher along ditch, red-shouldered hawk, common grackles, and pine warblers. Heard red-bellied woodpecker, gray catbirds, blue-grey gnatcatchers, white-eyed vireo, and Carolina wren. Observed wood storks flying south along field.
3	0740	Observed gray squirrel and two great egrets flying north. Heard pileated woodpecker and gray catbird.
4	0800	Observed painted bunting. Heard and observed gray catbird.
5	0820	Heard gray catbird and red-bellied woodpecker.
6	0840	Heard and observed red-bellied woodpecker and great crested flycatcher. Observed tree swallows fly over.
7	0900	Observed turkey vulture and pine warbler. Heard gray catbird. Heard and observed Eastern phoebe.
8	0930	Heard and observed palm warblers.
9	0955	Heard gray catbirds and blue-grey gnatcatchers.
10	1015	Heard gray catbirds. Observed palm warbler.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 12, 2014
Survey Transect: C
Start time of survey: 0648 **Weather conditions:** Clear sky, calm wind, and temperature at 46 degrees

End time of survey: 0922 **Weather conditions:** Overcast sky, wind at 2-5 mph, and temperature at 55 degrees

Observer: Ken Passarella

Station	Time	Field Notes
1	0648	Observed great blue heron. Heard red-shouldered hawk and catbird.
2	0700	Observed two killdeer in pasture, red-shouldered hawk roosting on snag, wood stork flying overhead, and two sandhill cranes fly overhead.
3	0715	Heard sandhill cranes, red-shouldered hawk, and catbirds. Observed anhinga fly overhead.
4	0730	Observed six sandhill cranes fly overhead. Heard catbirds and red-bellied woodpecker.
5	0748	Heard catbirds and Eastern phoebe. Observed cardinal in cabbage palm and red-bellied woodpecker on pine tree.
6	0800	Heard red-shouldered hawk, catbirds, and red-bellied woodpecker. Observed wood stork in cypress tree.
7	0816	Observed red-shouldered hawk fly overhead, and cardinal and catbird in palmettos. Heard killdeer and Eastern phoebe.
8	0831	Observed red-shouldered hawk in cypress tree, three white ibises and one great egret fly by, two roseate spoonbills foraging in ditch, and killdeers in pasture. Heard red-bellied woodpecker and catbirds.
9	0844	Observed black vulture fly overhead and tri-colored heron foraging in ditch. Heard catbirds.
10	0858	Observed Eastern phoebe in cypress tree and two snowy egrets fly overhead. Heard sandhill crane.
11	0909	Flushed three ground doves. Observed cattle egrets in pasture. Observed two tri-colored herons, little blue heron, and snowy egret foraging in ditch. Observed five vultures circling overhead. Heard red-shouldered hawk.
	0922	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 15, 2014
Survey Transect: A
Start time of survey: 0700 **Weather conditions:** Clear sky, calm wind, and temperature in the low 40s

End time of survey: 1045 **Weather conditions:** Clear sky, calm wind, and temperature in the mid 60s

Observer: William R. Cox

Station	Time	Field Notes
1	0700	Observed Carolina wren and Northern cardinal.
2	0720	Observed loggerhead shrike and red-shouldered hawk.
3	0735	Observed red-bellied woodpecker and Eastern phoebe.
4	0800	Observed downy woodpecker. Heard Carolina wren.
5	0815	Observed bald eagle and greater yellowlegs.
6	0835	Heard Eastern meadowlark and gray catbird. Observed pine warbler.
7	0900	Observed palm warbler, loggerhead shrike, and downy woodpecker.
8	0915	Observed great egret and blue jay. Heard red-bellied woodpecker.
9	0955	Heard blue-grey gnatcatcher and gray catbird.
10	1015	Observed red-shouldered hawk. Heard pileated woodpecker.
11	1025	Observed palm warbler and Northern cardinal. Heard Carolina wren.
12	1045	Observed pine warbler and blue jay.
	1045	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 15, 2014
Survey Transect: B
Start time of survey: 0700 **Weather conditions:** Clear sky, calm wind out of the north at 0-5 mph, and temperature in the high 30s

End time of survey: 1030 **Weather conditions:** Clear sky, calm wind out of the north at 0-5 mph, and temperature in the low 70s

Observer: Chase Conley

Station	Time	Field Notes
1	0700	Observed Northern cardinal and multiple catbirds.
2	0720	Observed sandhill cranes, wood storks flying east to west, and white ibis.
3	0740	Observed great blue heron, red-shouldered hawk, white ibis, and pine warblers.
4	0800	Observed multiple pine warblers. Heard pileated woodpeckers to the west. Observed mourning doves.
5	0820	Observed multiple pileated woodpeckers, downy woodpecker, pine warblers, great blue heron, common grackles, Northern cardinal, and American kestrel.
6	0840	Observed multiple white ibises, gray catbirds, and pine and palm warblers.
7	0900	Observed red-shouldered hawk, palm warblers, and brown-headed nuthatch.
8	0920	Observed blue-grey gnatcatcher, red-shouldered hawk, painted bunting, and pileated woodpecker.
9	0940	Observed red-shouldered hawk, gray catbird, and painted bunting.
10	1000	Observed little blue heron and anhinga.
11	1015	Observed gray catbird and great blue heron.
12	1030	Observed gray catbird and great blue heron.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 15, 2014
Survey Transect: C
Start time of survey: 0653 **Weather conditions:** High cloud cover, no rain, calm wind, and temperature in the high 30s

End time of survey: 0920 **Weather conditions:** Cloud cover 5 percent, no rain, wind from the northeast at 2-5 mph, and temperature in the high 50s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0653	Heard gray catbirds.
2	0715	Heard killdeer in field, red-shouldered hawk in distance, and gray catbirds.
3	0735	Heard gray catbirds and red-bellied woodpecker.
4	0755	Heard great crested flycatcher and red-shouldered hawk. Observed white ibis fly over. Heard and observed gray catbirds and common yellowthroat. Heard sandhill cranes to the east.
5	0815	Heard gray catbirds and great crested flycatcher.
6	0828	Heard gray catbirds and red-bellied woodpeckers. Observed four white ibises flying east.
7	0843	Heard gray catbirds and great crested flycatcher. Heard and observed tree swallows and pileated woodpecker.
8	0905	Heard Eastern meadowlarks in field and red-bellied woodpeckers. Observed red-shouldered hawk.
	0920	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 16, 2014
Survey Transect: A
Start time of survey: 0700 **Weather conditions:** Cloud cover 45 percent, calm wind, and temperature in the low 50s

End time of survey: 1000 **Weather conditions:** Cloud cover 25 percent, calm wind, and temperature in the low 70s

Observer: Sabrina Lartz

Station	Time	Field Notes
1	0700	Observed roseate spoonbill, great egret, snowy egret, and common grackle. Heard Northern cardinal.
2	0715	Heard gray catbird. Observed red-tailed hawk.
3	0730	Observed white ibis, great blue heron, little blue heron, roseate spoonbill, great egret, anhingas, and wood stork.
4	0745	Observed roseate spoonbill, boat-tailed grackle, killdeer, and pileated woodpeckers.
5	0800	Observed red-bellied woodpecker, American kestrel, and snipe. Heard and observed Carolina wren.
6	0815	Heard common grackles and Eastern meadowlark. Heard and observed killdeer. Observed mourning dove.
7	0830	Heard gray catbird and coyotes. Heard and observed red-bellied woodpecker. Observed Carolina wrens.
8	0845	Observed Cooper's hawk, Eastern phoebe, and Eastern meadowlark. Heard and observed tree swallows.
9	0930	Heard gray catbirds, blue jay, and hairy woodpecker. Heard and observed red-bellied woodpecker and red-shouldered hawk. Observed black vulture.
10	0945	Heard and observed red-bellied woodpecker. Heard gray catbird.
	1000	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 16, 2014
Survey Transect: B
Start time of survey: 0730 **Weather conditions:** Sunny, calm wind, and temperature at 45 degrees

End time of survey: 1020 **Weather conditions:** Sunny, calm wind, and temperature at 60 degrees

Observer: Justin Heller

Station	Time	Field Notes
1	0730	Heard blue-grey gnatcatcher and pine warbler. Observed great blue heron.
2	0745	Heard pine warblers, Northern cardinal, and Carolina wren. Observed white ibis, blue-grey gnatcatcher, common yellowthroat, great blue heron, cattle egret, and gray catbird.
3	0800	Observed common yellowthroat, pine warblers, mourning dove, white ibis, belted kingfisher, great egret, blue-grey gnatcatcher, great blue heron, and three otters. Heard sandhill crane.
4	0815	Observed little blue heron, ground dove, blue-grey gnatcatcher, pine warblers, great egret, and great blue heron. Heard gray catbird and Eastern phoebe.
5	0830	Observed mourning dove, pine warblers, and blue-grey gnatcatcher. Heard Eastern phoebe, common yellowthroat, and downy woodpecker.
6	0845	Observed red-shouldered hawk, gray catbird, pine warbler, ground dove, and Northern cardinal. Heard blue-grey gnatcatcher, common yellowthroat, and pileated woodpecker.
7	0905	Heard gray catbird, common yellowthroat, and red-bellied woodpecker. Observed Eastern phoebe, prairie warbler, blue-grey gnatcatcher, anhinga, and red-shouldered hawk.
8	0920	Heard gray catbirds. Observed pine warblers, anhinga, red-shouldered hawk, ground doves, common grackles, and blue-grey gnatcatcher.
9	0935	Observed pine warblers, belted kingfisher, anhinga, and great blue heron. Heard pileated woodpecker and gray catbird.
10	0950	Observed great egret, anhinga, and mourning dove. Heard blue-grey gnatcatcher.

Station	Time	Field Notes
11	1005	Observed common yellowthroat, anhinga, pine warbler, great blue heron, boat-tailed grackle, and gray squirrel. Heard blue-grey gnatcatcher. Observed six sandhill cranes flying over.
	1020	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 16, 2014
Survey Transect: C
Start time of survey: 0658 **Weather conditions:** High cloud cover, no rain, calm wind, and temperature in the high 40s/low50s

End time of survey: 0930 **Weather conditions:** Clear sky, no rain, wind at 0-5 mph, and temperature in the low 70s

Observer: Jean Ihnat

Station	Time	Field Notes
1	0658	Heard gray catbirds and pileated woodpecker. Observed several white ibises flying west.
2	0720	Heard gray catbirds, pileated woodpecker, and Carolina wren. Observed gray catbird and Eastern meadowlarks.
3	0740	Heard pileated woodpecker, gray catbirds, Carolina wren, sandhill cranes in distance, and red-shouldered hawk.
4	0757	Heard gray catbirds, Eastern meadowlark, Carolina wren, red-bellied woodpecker, sandhill cranes to the north, and downy woodpecker.
5	0820	Heard red-shouldered hawk, killdeer in the field, gray catbirds, red-bellied woodpecker, and Carolina wren.
6	0840	Heard gray catbirds, barred owl, common yellowthroat, and pileated woodpecker.
7	0855	Heard pileated woodpecker, gray catbird, and killdeer.
8	0910	Heard and observed palm warblers and killdeer in the field. Heard gray catbirds.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 17, 2014
Survey Transect: A
Start time of survey: 0700 **Weather conditions:** Clear sky, calm wind, and temperature in the low 50s

End time of survey: 1045 **Weather conditions:** Clear sky, calm wind, and temperature in the mid 60s

Observer: William R. Cox

Station	Time	Field Notes
1	0700	Observed red-bellied woodpecker and red-shouldered hawk.
2	0715	Heard Carolina wren. Observed Eastern phoebe and ground doves.
3	0735	Observed Northern cardinal and downy woodpecker.
4	0750	Observed palm warblers and mourning doves.
5	0825	Observed Eastern phoebes, loggerhead shrike, and sandhill cranes. Heard Northern flicker.
6	0845	Observed wood storks fly over, blue jay, and American crows.
7	0900	Observed mourning doves and palm warblers. Heard blue jay.
8	0925	Heard Eastern meadowlarks. Observed Northern cardinal.
9	0945	Observed great crested flycatcher and Northern cardinal.
10	1010	Observed sandhill cranes and great blue heron.
11	1030	Observed red-shouldered hawk and pileated woodpecker.
12	1045	Observed Eastern phoebe. Observed white ibis fly over.
	1045	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 17, 2014
Survey Transect: B
Start time of survey: 0650 **Weather conditions:** Sunny, wind at 0 mph, and temperature at 48 degrees

End time of survey: 1010 **Weather conditions:** Sunny, wind at 0 mph, and temperature at 52 degrees

Observer: Heather Phillips

Station	Time	Field Notes
1	0650	Heard and observed great egret, little blue heron, and common ground dove. Heard red-shouldered hawk, blue-grey gnatcatcher, pileated woodpecker, and Carolina wren.
2	0705	Heard red-shouldered hawk, pileated woodpecker, and Northern cardinal. Observed white ibis. Heard and observed pine warbler and common grackles.
3	0720	Heard Carolina wren, gray catbird, and pileated woodpecker. Heard and observed Northern cardinal and palm warbler.
4	0740	Heard and observed snowy egret, little blue heron, white ibis, and palm warbler. Observed water moccasin.
5	0805	Observed river otters. Heard gray catbird.
6	0825	Heard and observed red-bellied woodpecker, common grackles, palm warblers, and pileated woodpeckers. Heard fish crow, gray catbirds, and blue-grey gnatcatcher.
7	0840	Heard and observed river otters. Heard gray catbird and Carolina wren. Observed red-shouldered hawk.
8	0905	Observed great blue heron, snowy egret, and common grackle. Heard and observed pine warblers. Heard common ground doves.
9	0925	Heard pine warblers, gray catbirds, and red-bellied woodpecker.
10	0940	Heard pine warblers and gray catbirds. Observed great blue heron and anhinga.
11	0955	Heard pileated woodpecker and gray catbirds. Observed red-tailed hawk and anhinga.
	1010	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 17, 2014
Survey Transect: C
Start time of survey: 0700 **Weather conditions:** Clear sky, wind out of the north at 0-5 mph, and temperature in the low 50s

End time of survey: 0930 **Weather conditions:** Clear sky, wind out of the north at 0-5 mph, and temperature in the high 60s

Observer: Chase Conley

Station	Time	Field Notes
1	0700	Observed sandhill cranes and gray catbird.
2	0715	Observed red-shouldered hawks, gray catbirds, and red-bellied woodpeckers.
3	0730	Observed multiple pine warblers and red bellied woodpeckers. Heard brown-headed nuthatches and sandhill crane to the north.
4	0745	Heard pileated woodpecker to the west. Observed red-bellied woodpeckers.
5	0800	Observed gray catbirds and multiple red-bellied woodpeckers.
6	0830	Observed multiple red-bellied woodpeckers, black vultures, and American kestrels. Observed mourning doves and multiple wood storks flying east to west.
7	0845	Observed multiple pine warblers and belted kingfisher.
8	0900	Observed roseate spoonbill flying north to south, multiple little blue herons, pine warblers, and gray catbirds.
9	0915	Observed blue-grey gnatcatcher and belted kingfisher.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 18, 2014
Survey Transect: A
Start time of survey: 0700 **Weather conditions:** Clear sky, calm wind, and temperature in the low 50s

End time of survey: 1030 **Weather conditions:** Cloud cover 30 percent and temperature in the mid 60s

Observer: William R. Cox

Station	Time	Field Notes
1	0700	Observed palm warblers and red-shouldered hawk.
2	0720	Observed great crested flycatcher and turkey vulture.
3	0730	Heard red-bellied woodpecker. Observed palm warbler.
4	0750	Observed bald eagle and palm warblers. Heard Carolina wren.
5	0830	Heard loggerhead shrike and gray catbird.
6	0845	Heard red-shouldered hawk. Observed wild turkey and 100's of tree swallows.
7	0905	Observed Eastern phoebe, blue jay, and pine warbler.
8	0925	Observed great horned owl and Northern mockingbird.
9	0940	Observed Northern cardinal and palm warbler.
10	1005	Heard downy woodpecker. Observed pine warbler and pileated woodpecker.
11	1030	Observed turkey vulture, mourning dove, and American crows.
	1030	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 18, 2014
Survey Transect: B
Start time of survey: 0705 **Weather conditions:** Sunny, wind at 0 mph, and temperature at 50 degrees

End time of survey: 1035 **Weather conditions:** Sunny, wind at 0 mph, and temperature at 66 degrees

Observer: Heather Phillips

Station	Time	Field Notes
1	0705	Heard Northern cardinal, red-shouldered hawk, and pileated woodpecker. Heard and observed gray catbird.
2	0725	Heard gray catbird, red-shouldered hawk, blue-grey gnatcatcher, pileated woodpecker, and Northern cardinal.
3	0740	Heard and observed palm warblers. Heard Northern cardinal, pileated woodpecker, and blue-grey gnatcatcher.
4	0755	Heard and observed snowy egret, little blue heron, great blue heron, and palm warblers. Heard pileated woodpecker.
5	0815	Heard and observed common grackles, common ground doves, and pine warblers.
6	0830	Observed Northern cardinal and red-shouldered hawk. Heard and observed tri-colored heron, pine warblers, blue-grey gnatcatchers, and red-bellied woodpecker.
7	0845	Heard Northern mockingbird, Northern cardinal, and gray catbird. Observed great egret.
8	0905	Heard gray catbird. Heard and observed palm warblers and pine warblers.
9	0935	Heard common grackles and pine warbler. Observed double-crested cormorant, little blue heron, and black vultures.
10	1000	Heard and observed palm warbler, common grackle, and gray catbird. Heard red-bellied woodpecker.
11	1020	Observed great egret, white ibis, and double-crested cormorant. Heard and observed loggerhead shrike. Heard gray catbird.
	1035	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 18, 2014
Survey Transect: C
Start time of survey: 0705 **Weather conditions:** Low, patchy fog; no wind; and temperature in the low 50s

End time of survey: 0930 **Weather conditions:** Partly cloudy sky, calm wind, and temperature in the high 60s

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0705	Heard sandhill cranes. Observed gray catbirds and Northern mockingbird.
2	0720	Observed white-tailed deer, sandhill cranes, red-bellied woodpecker, gray catbirds, killdeer, and great egret flying.
3	0745	Heard and observed palm warblers, red-bellied woodpeckers, red-shouldered hawk, white ibis, and killdeer.
4	0805	Observed fish crow, Northern mockingbird, Florida box turtle, feral hog tracks, gray catbirds, palm warblers, and sandhill cranes flying overhead.
5	0825	Observed red-bellied woodpecker, red-shouldered hawk, palm warblers, Northern cardinal, and common grackles.
6	0845	Observed pileated woodpecker, gray catbird, black racer, feral hog tracks, tree swallows, and Northern mockingbird.
7	0905	Heard and observed red-bellied woodpeckers, palm warblers, red-shouldered hawk, and tree swallows. Heard sandhill cranes. Observed wood stork flying south.
8	0915	Heard red-shouldered hawk and fish crow. Observed pileated woodpecker, gray catbird, Northern cardinals, and Northern mockingbird.
	0930	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 19, 2014
Survey Transect: A
Start time of survey: 0655 **Weather conditions:** Mostly clear sky, light fog, no wind, and temperature at 52 degrees

End time of survey: 1015 **Weather conditions:** Clear sky, no wind, and temperature at 70 degrees

Observer: Mike Myers

Station	Time	Field Notes
1	0655	Heard great horned owl and sandhill cranes to the north.
2	0715	Heard and observed two gray catbirds to the north. Heard fish crows to the east.
3	0725	Heard sandhill cranes to the west. Observed great egret fly to the northeast and two mourning doves fly to the east.
4	0740	Observed foraging and/or loafing to the north, six white ibises, one great egret, four cattle egrets, two anhingas, two sandhill cranes, one killdeer, one great blue heron, one tri-colored heron, one little blue heron, and one lesser yellowlegs. Observed one Northern harrier fly to the north.
5	0800	Observed a flock of American robins fly to the west, a Northern flicker perched on a snag to the north, common grackle in pine to the north, and nine sandhill cranes and one great egret fly to the south. Heard red-bellied woodpecker to the east, mourning dove to the west, and sandhill cranes to the north.
6	0820	Observed four roseate spoonbills fly into freshwater marsh to the east.
7	0835	Heard a Northern flicker to the east.
8	0855	Heard a Northern flicker to the south.
9	0930	Observed wild turkeys running in the pasture to the east, black vulture and red-shouldered hawk perched in pines to the west, and four cattle egrets fly in and forage in pasture area to the east.
10	0950	Observed a great blue heron fly to the east, great crested flycatcher perched in Brazilian pepper to the north, turkey vulture fly to the north, and palm warbler foraging in a Brazilian pepper to the west. Heard gray catbird to the north.

Station	Time	Field Notes
11	1000	Observed palm warbler foraging on the ground to the south and gray catbird perched in a Brazilian pepper to the west.
	1015	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 19, 2014
Survey Transect: B
Start time of survey: 0655 **Weather conditions:** Mostly clear sky, calm wind, and temperature in the high 40s

End time of survey: 1020 **Weather conditions:** Clear sky, calm wind, and temperature in the high 60s

Observer: Cheryl Rolph

Station	Time	Field Notes
1	0655	Heard and observed common grackles, gray catbird, great blue heron, and mourning dove.
2	0725	Observed great egret, palm warblers, American alligator in ditch, and gray catbirds. Heard Carolina wren.
3	0750	Heard red-shouldered hawk. Observed palm warblers, little blue heron, and white ibis.
4	0805	Heard Carolina wren. Observed Eastern phoebe, palm warbler, yellow-rumped warbler, mourning dove, and gray catbird.
5	0835	Observed black vultures, tree swallows, common grackles, and great egret. Heard gray catbirds.
6	0855	Observed great crested flycatcher, anhinga, Eastern phoebe, painted buntings, blue-grey gnatcatcher, palm warblers, and red-bellied woodpecker.
7	0915	Heard gray catbird. Observed black vulture and palm warblers.
8	0930	Observed anhinga. Heard gray catbirds.
9	0945	Observed juvenile American alligators in ditch, black vultures, palm warblers, and belted kingfisher.
10	1005	Heard and observed red-bellied woodpeckers, gray catbirds, and palm warblers.
	1020	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

RURAL LANDS WEST
RED-COCKADED WOODPECKER
NON-NESTING SEASON SURVEY
FIELD OBSERVATIONS

Date: December 19, 2014
Survey Transect: C
Start time of survey: 0652 **Weather conditions:** Clear sky, some fog, calm wind, and temperature at 45 degrees

End time of survey: 0918 **Weather conditions:** Sunny, clear sky, calm wind, and temperature at 60 degrees

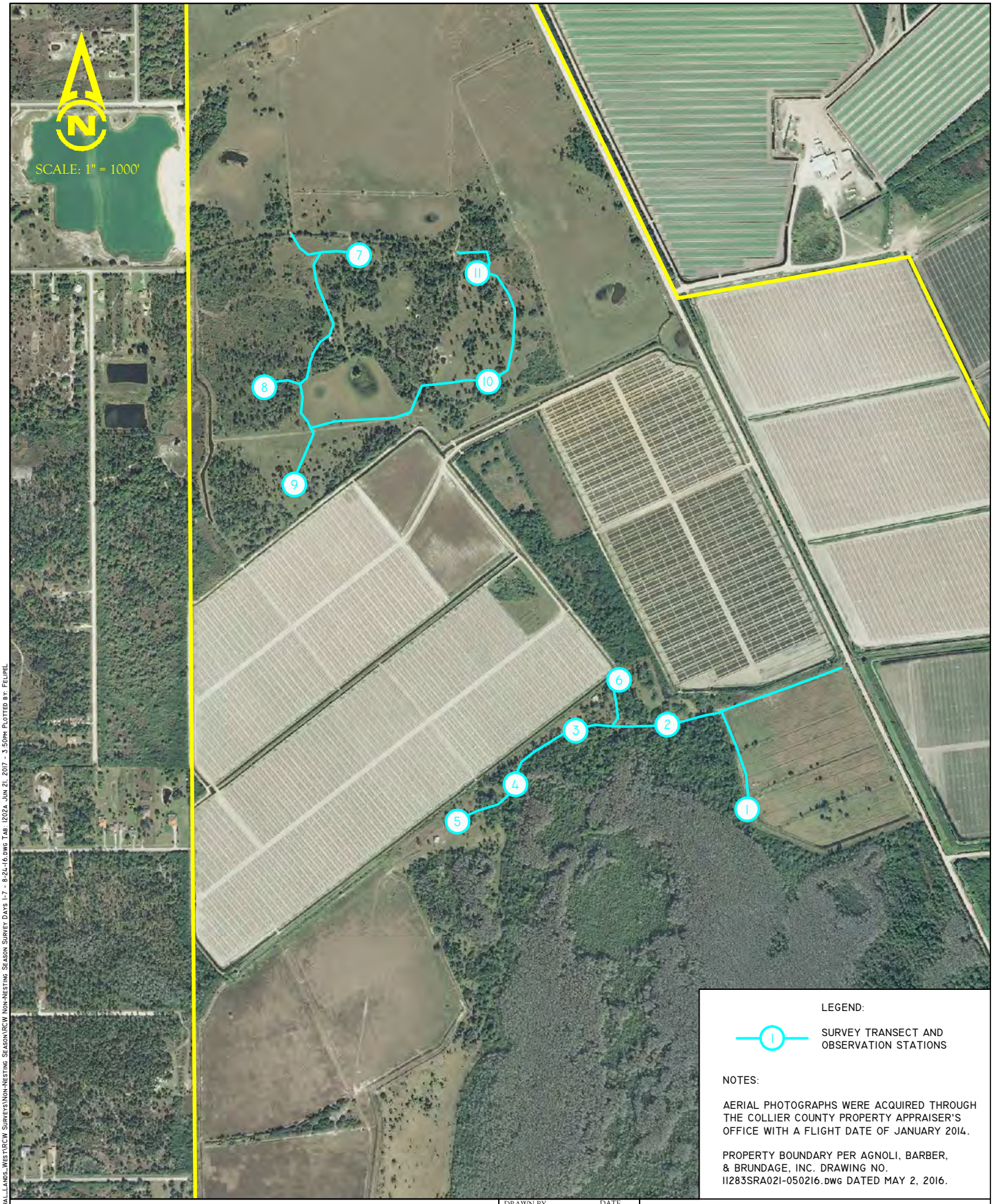
Observer: Ken Passarella

Station	Time	Field Notes
1	0652	Observed two wood storks fly overhead. Observed three wood storks and one great egret foraging in marsh. Observed five killdeers in trail.
2	0707	Observed two wood storks, cattle egret, and red-shouldered hawk fly overhead. Observed killdeer in pasture.
3	0717	Observed white ibis foraging in ditch. Heard Eastern phoebe.
4	0734	Heard catbirds and sandhill cranes.
5	0745	Heard catbirds and Eastern phoebes. Observed two red-bellied woodpeckers on dead pine tree.
6	0753	Observed catbird in palmetto. Heard red-shouldered hawk.
7	0815	Observed red-shouldered hawk fly, roseate spoonbill and great egret fly overhead, Florida panther on trail, red-bellied woodpecker on pine tree, Eastern phoebe on pine tree, and cardinal in cabbage palm. Heard catbird.
8	0830	Observed two eastern phoebes on winged sumac and palm warblers in palmetto. Heard catbirds.
9	0843	Observed tri-colored heron foraging in ditch. Heard catbirds, Eastern phoebe, and sandhill crane.
10	0854	Observed 25 cattle egrets in pasture, black vulture fly overhead, and 2 white ibises fly overhead.
11	0907	Observed two kingfishers fly overhead, Eastern phoebe in pine tree, great egret fly overhead, three white ibises fly overhead, seven cattle egrets in pasture, and great blue heron fly overhead. Heard catbirds and red-bellied woodpeckers.
	0918	End of survey. No red-cockaded woodpeckers heard or observed during the survey.

Note: Observations are summarized for time period noted.

APPENDIX H

RCW NON-NESTING SEASON FORAGING SURVEY MAPS WITH STATION NUMBERS



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 2, 2014

DRAWN BY	DATE
D.B.	1/5/14
REVIEWED BY	DATE
K.C.P.	1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
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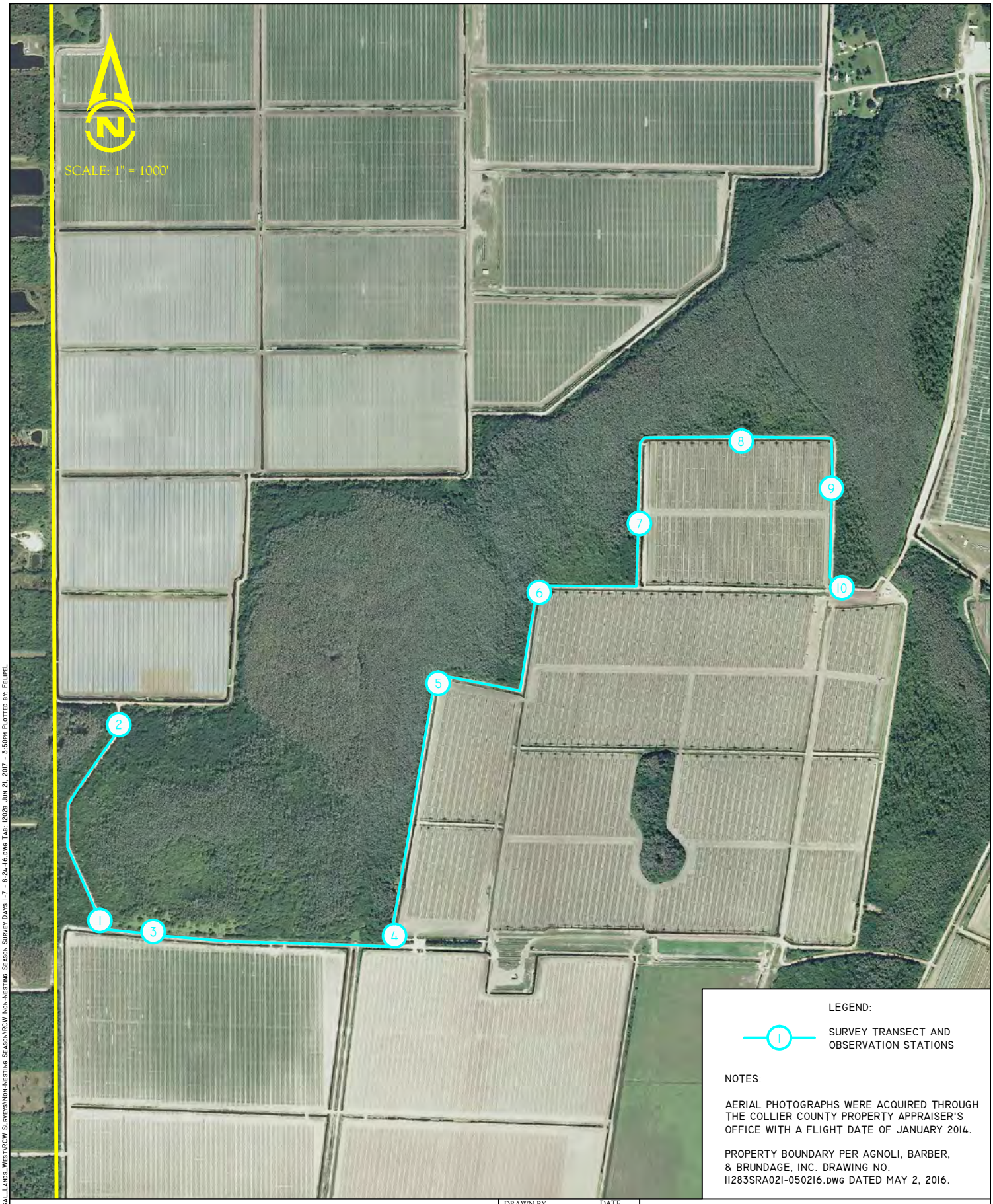
J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 1-7 - 8-24-16.DWG TAB: I202A JUN 21, 2017 - 3:50PM PLOTTED BY: FELIPEL



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1 SURVEY TRANSECT AND OBSERVATION STATIONS

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RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 2, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

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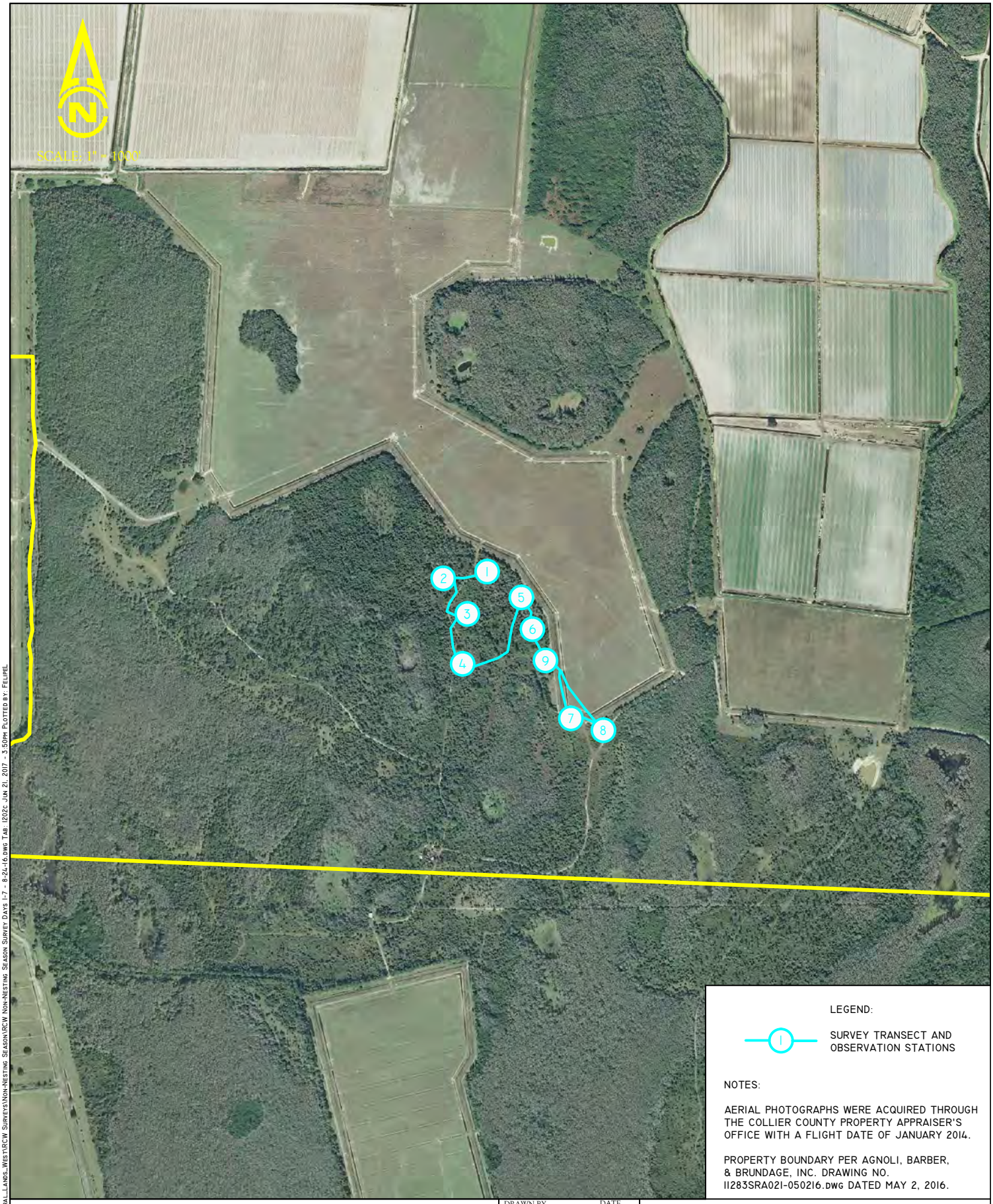

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 2, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

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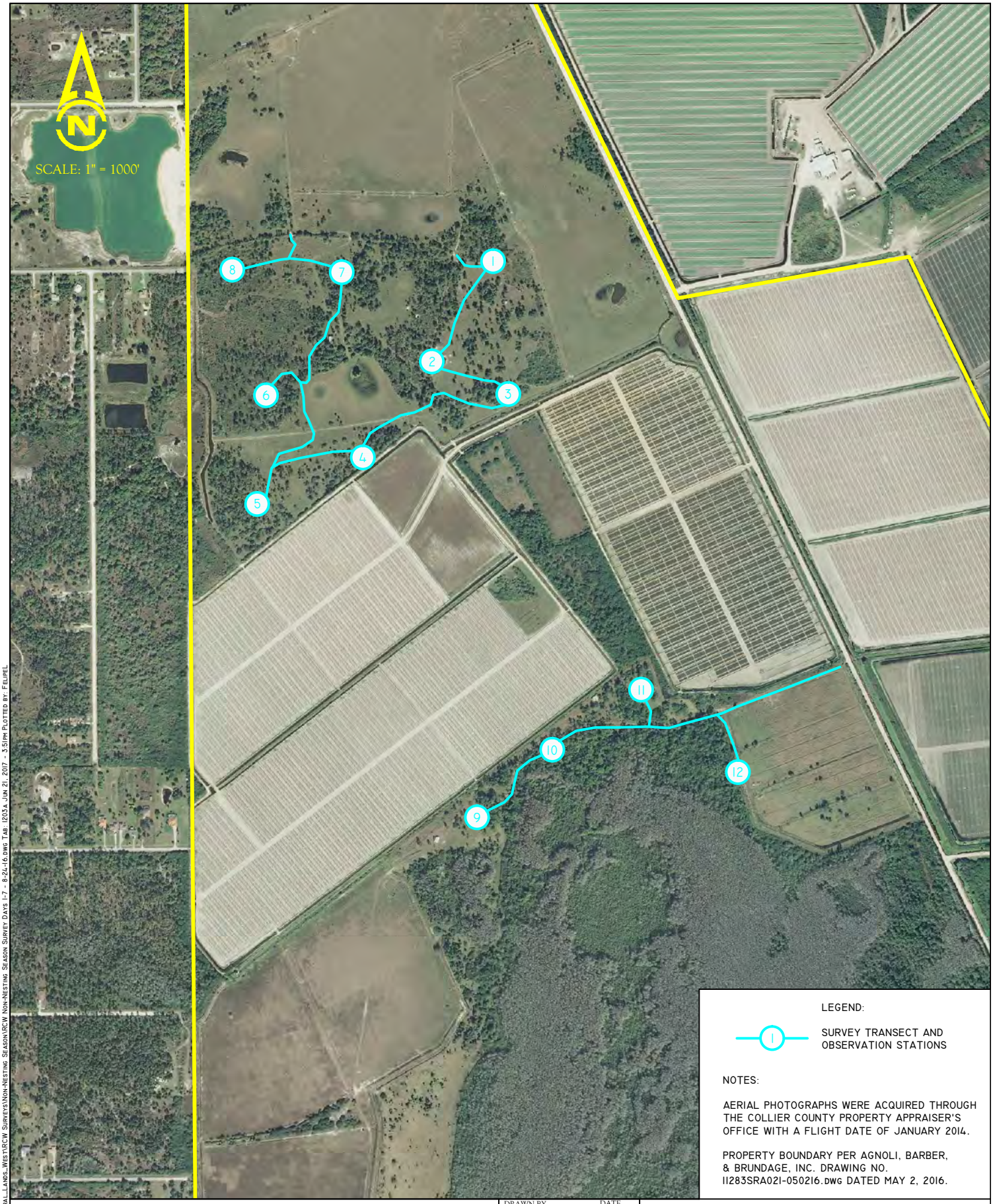

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 3, 2014

DRAWN BY	DATE
D.B.	1/5/14
REVIEWED BY	DATE
K.C.P.	1/5/14
REVISED	DATE

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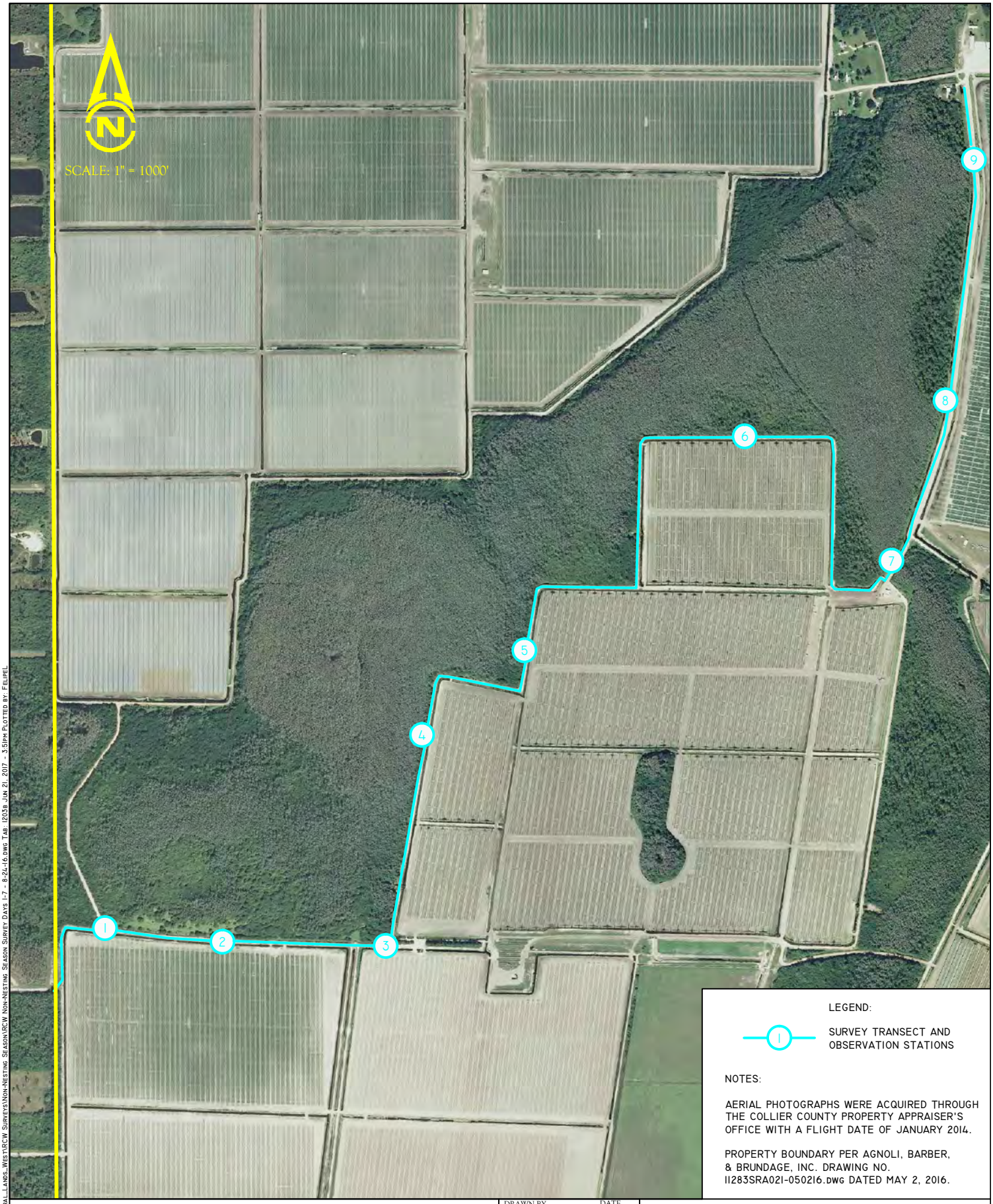

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

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RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY
RURAL LANDS WEST - SURVEY AREA "B"
DATE: DECEMBER 3, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

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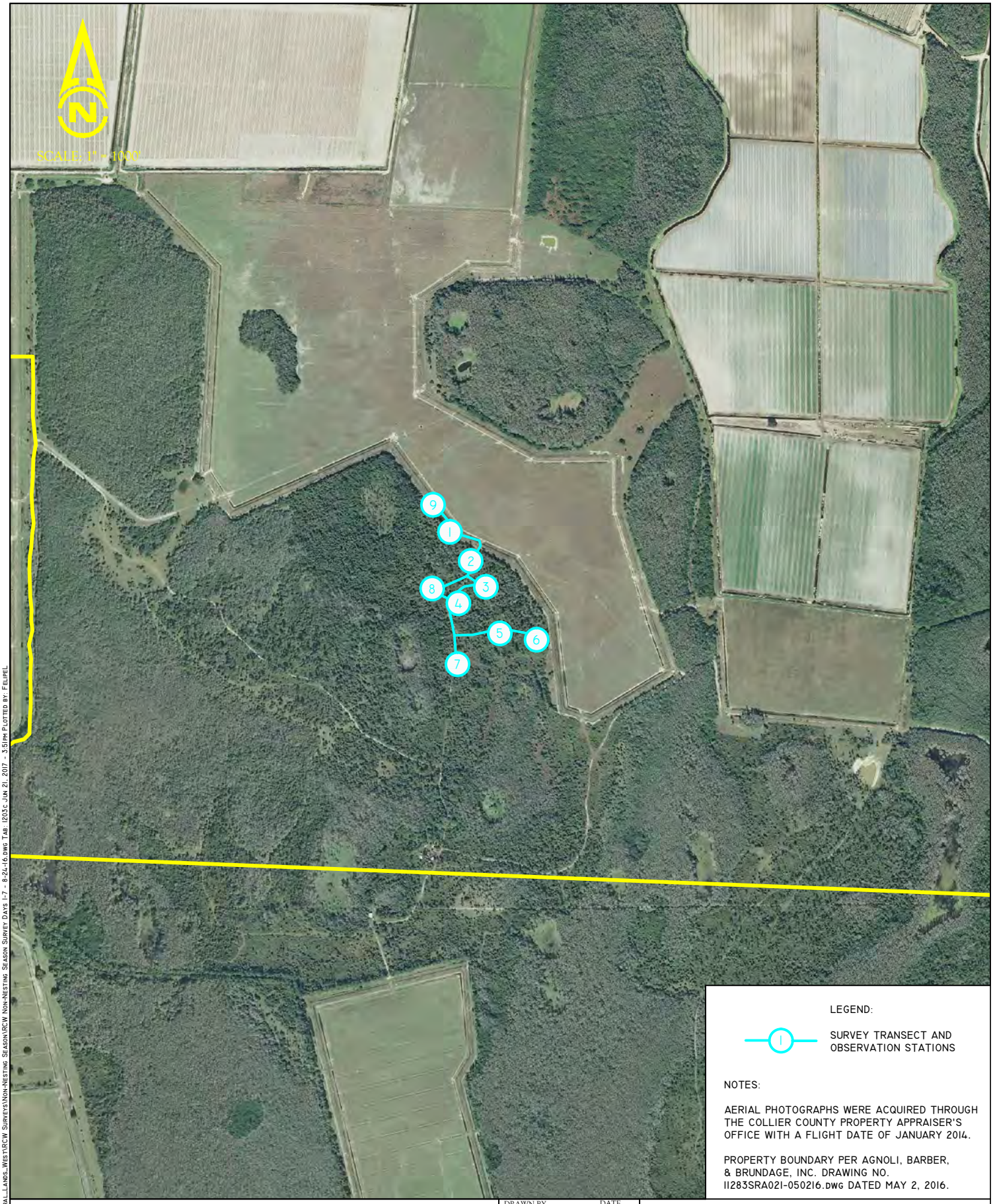

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 3, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

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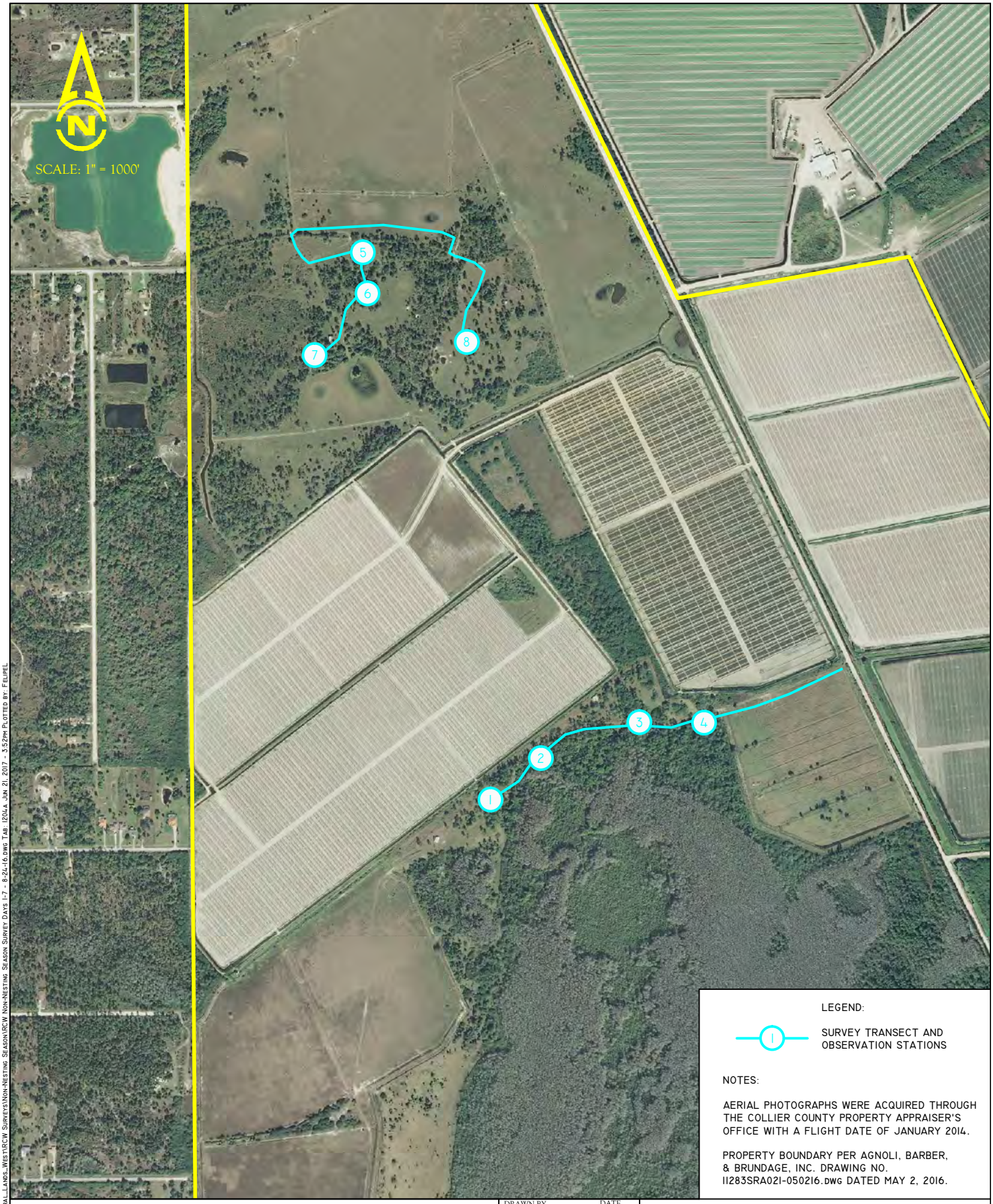

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 4, 2014

DRAWN BY	DATE
D.B.	1/5/14
REVIEWED BY	DATE
K.C.P.	1/5/14
REVISED	DATE

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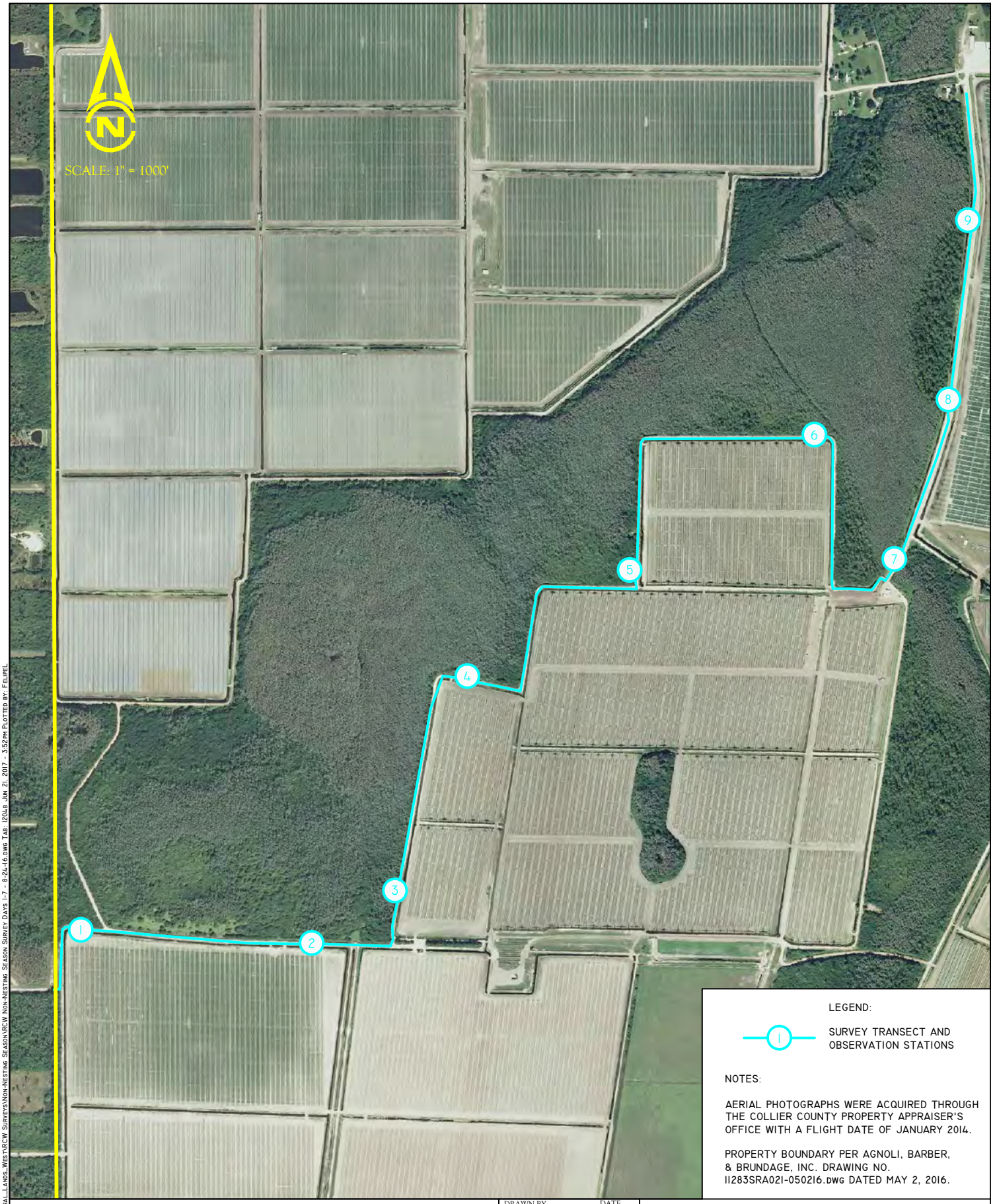

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 4, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

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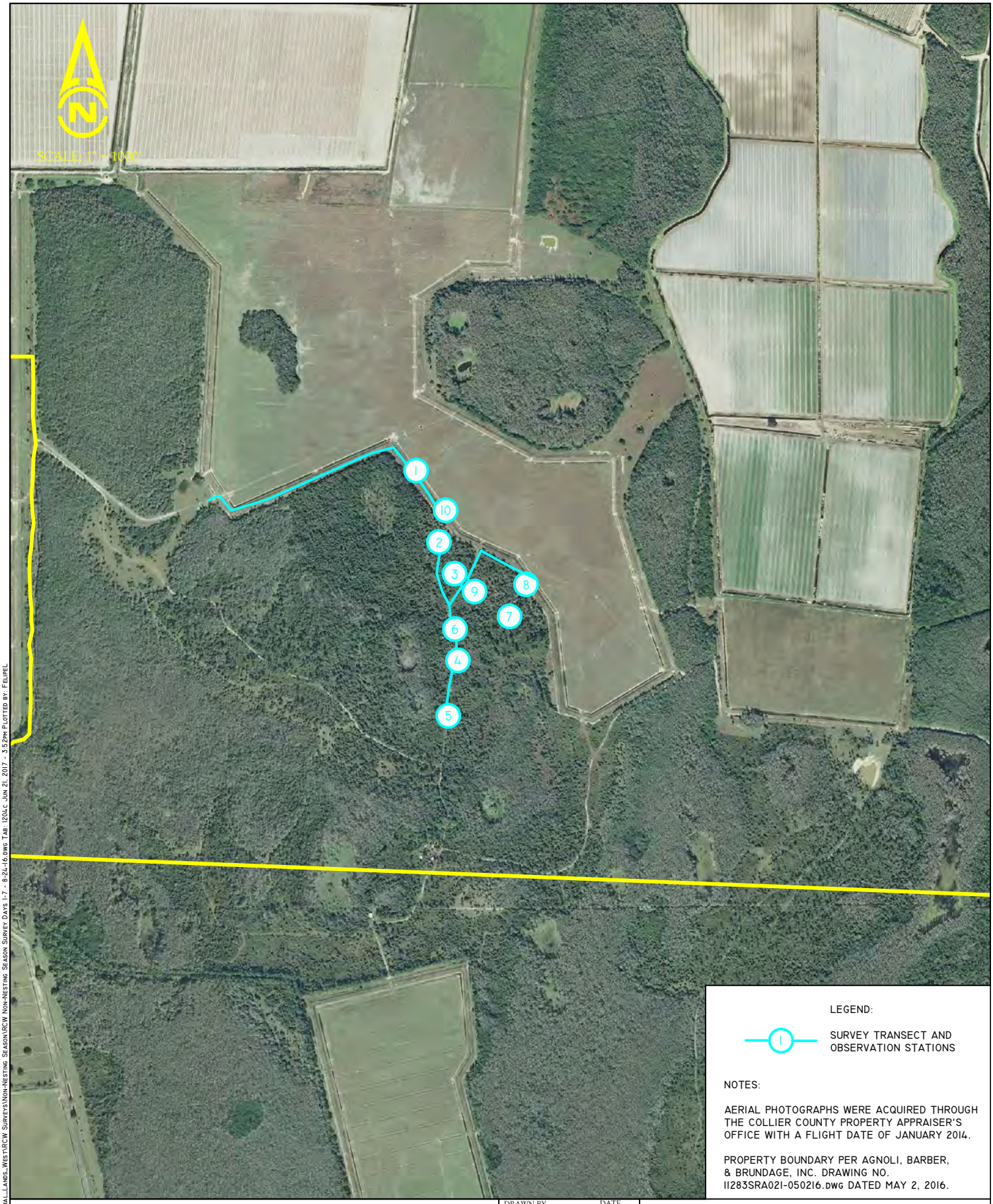

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 4, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
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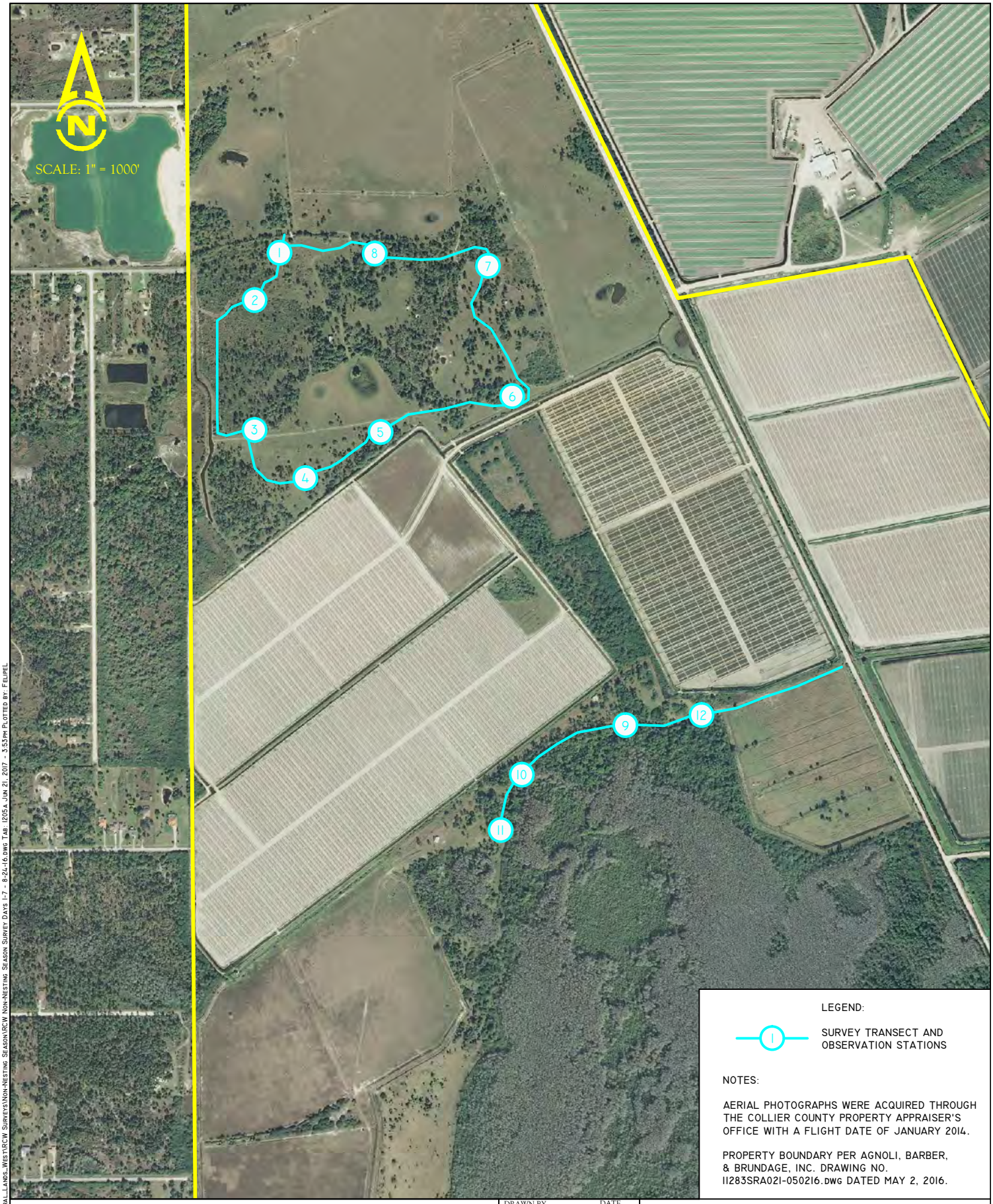

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1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 5, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

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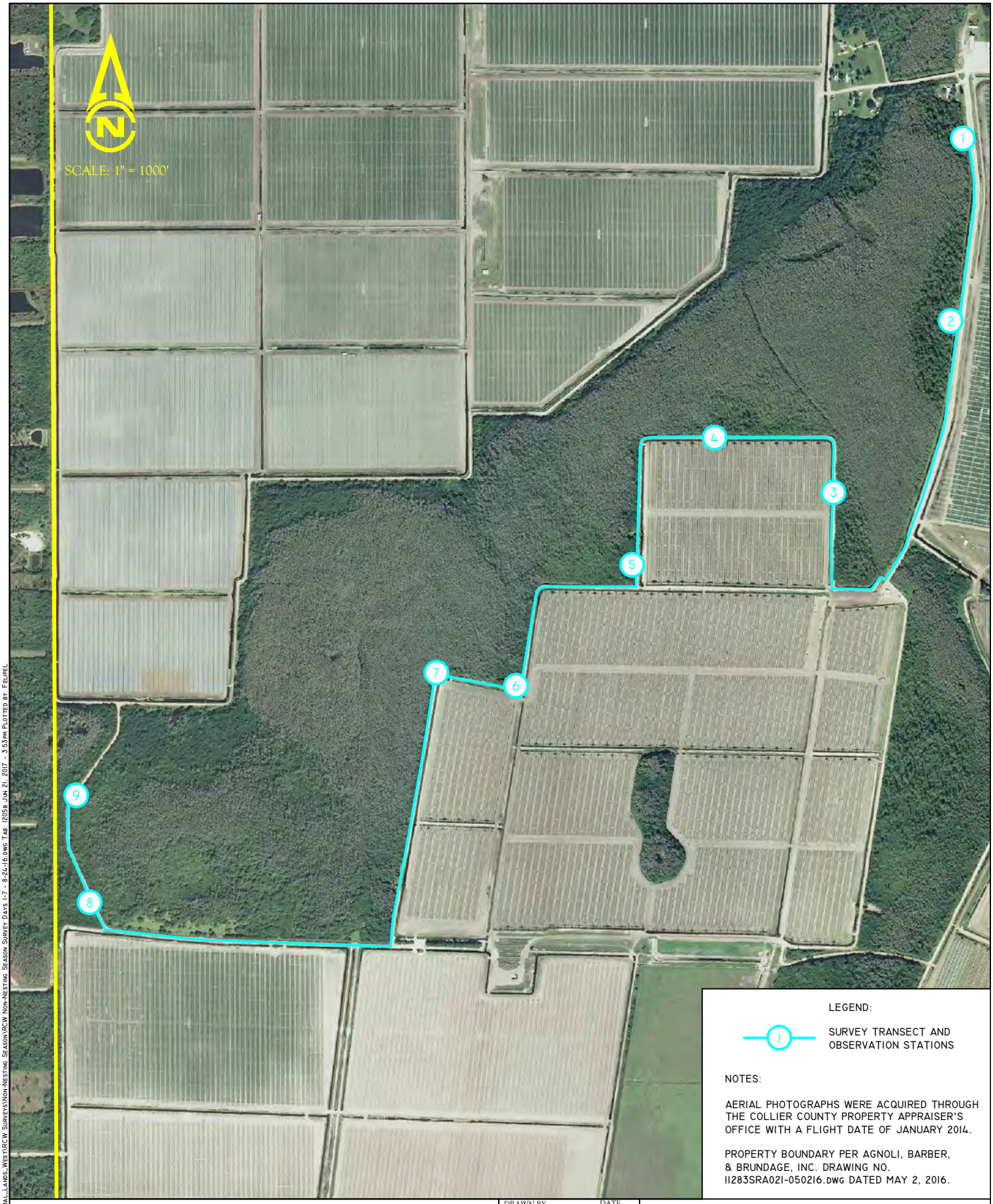

LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 5, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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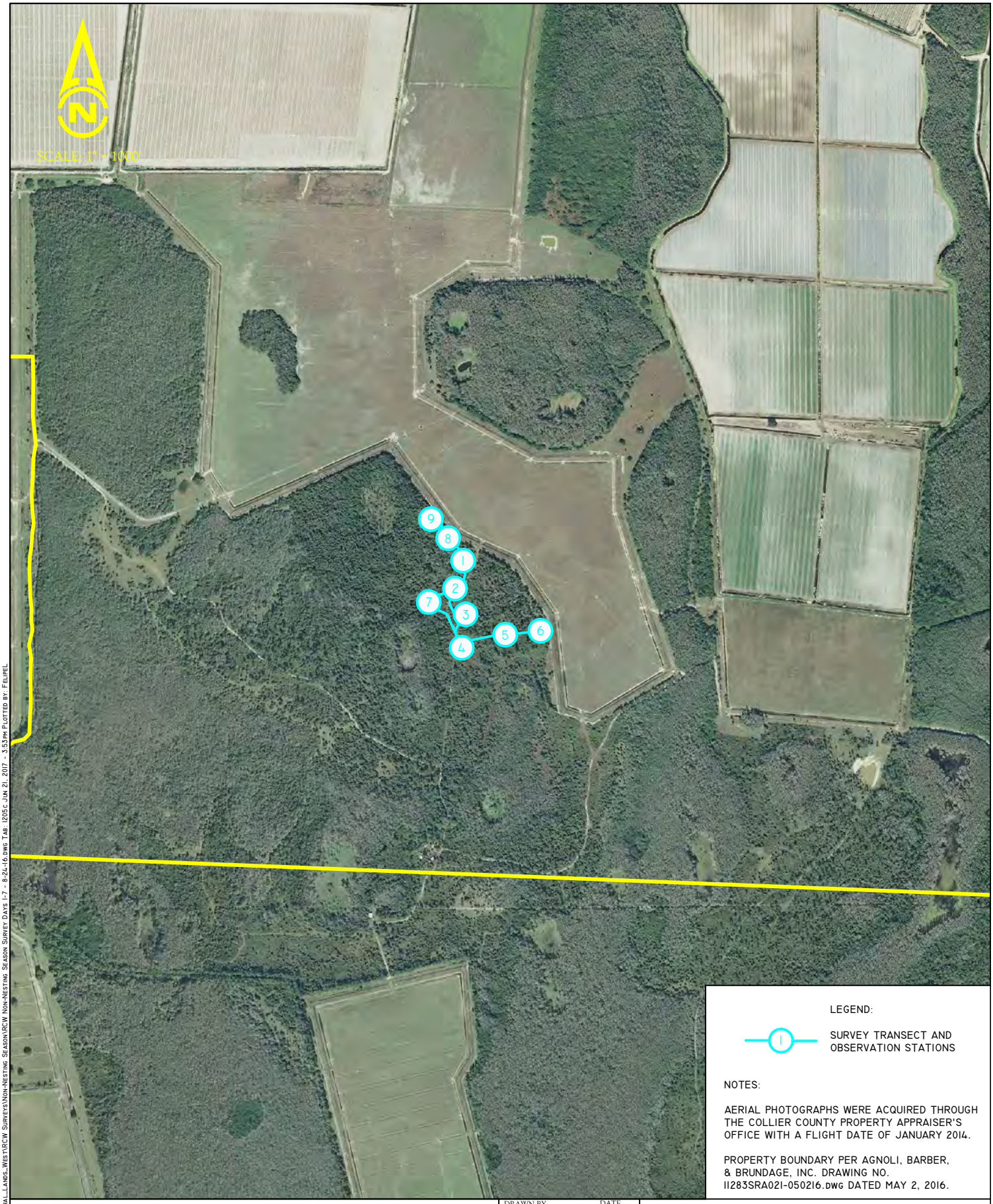


LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

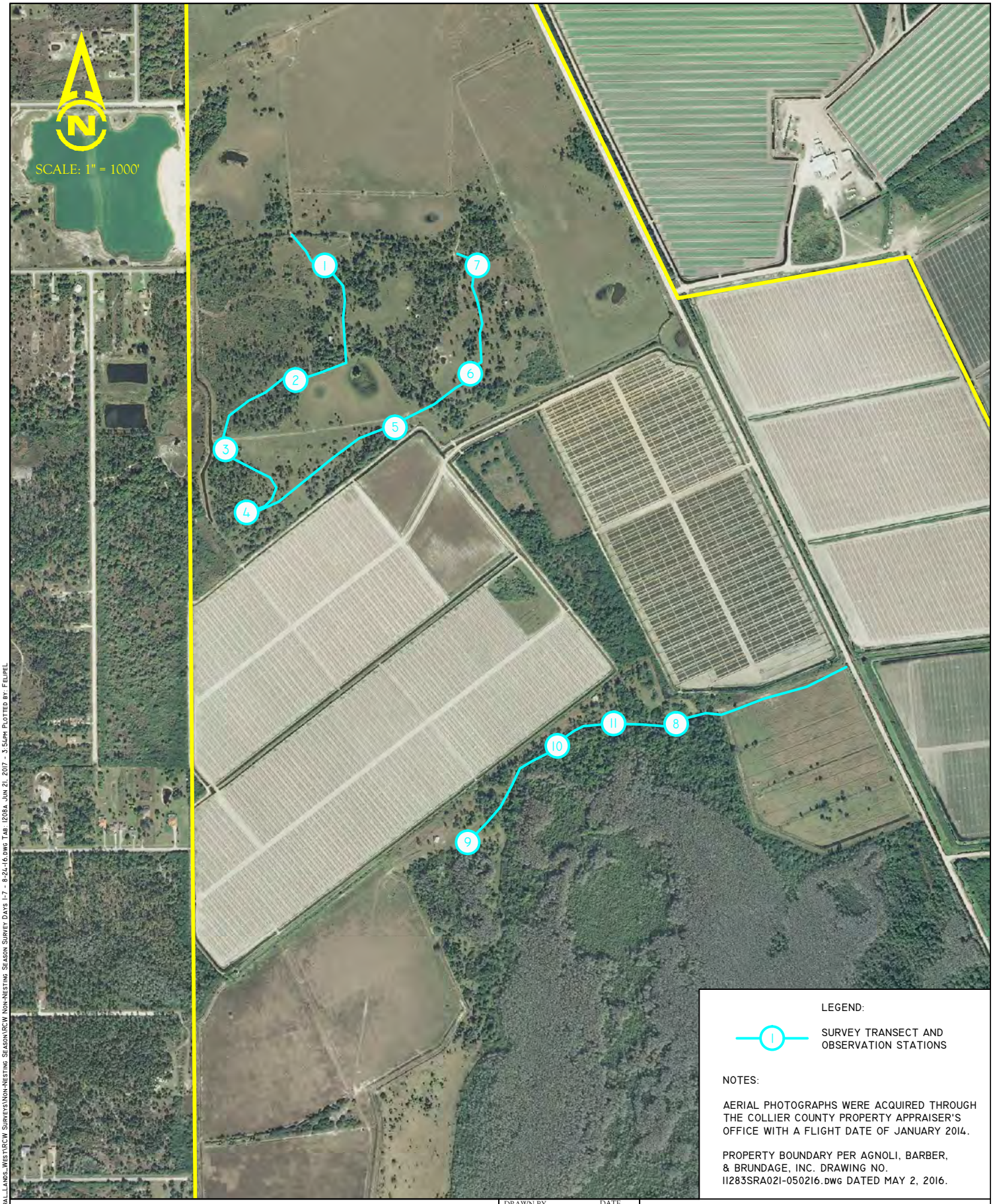
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 5, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 1-7 - 8-24-16.dwg Tab: 1205c Jun 21, 2017 - 3:53pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

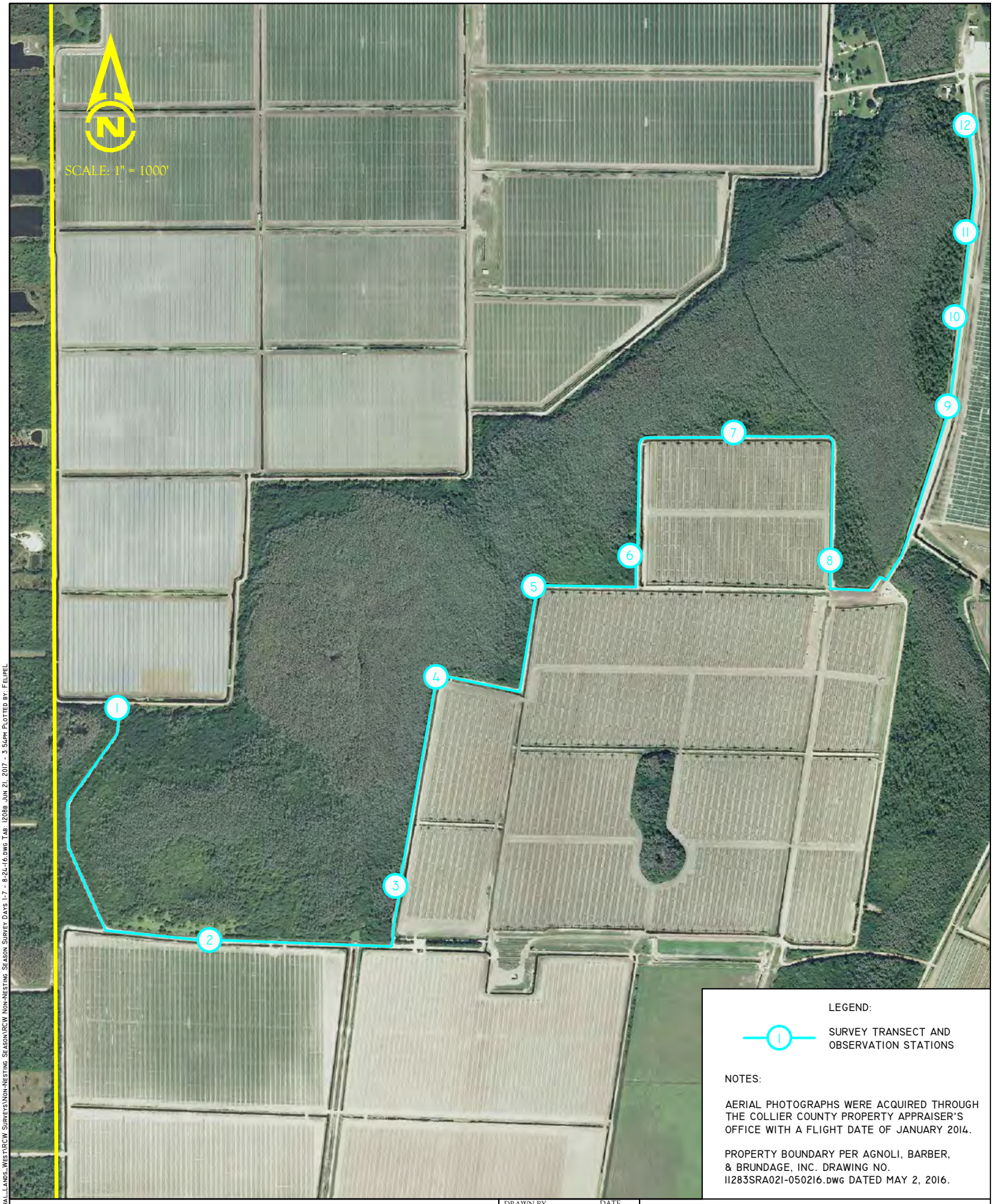
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 8, 2014

DRAWN BY	DATE
D.B.	1/5/14
REVIEWED BY	DATE
K.C.P.	1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 1-7 - 8-24-16.DWG TAB: I208A JUN 21, 2017 - 3:54PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

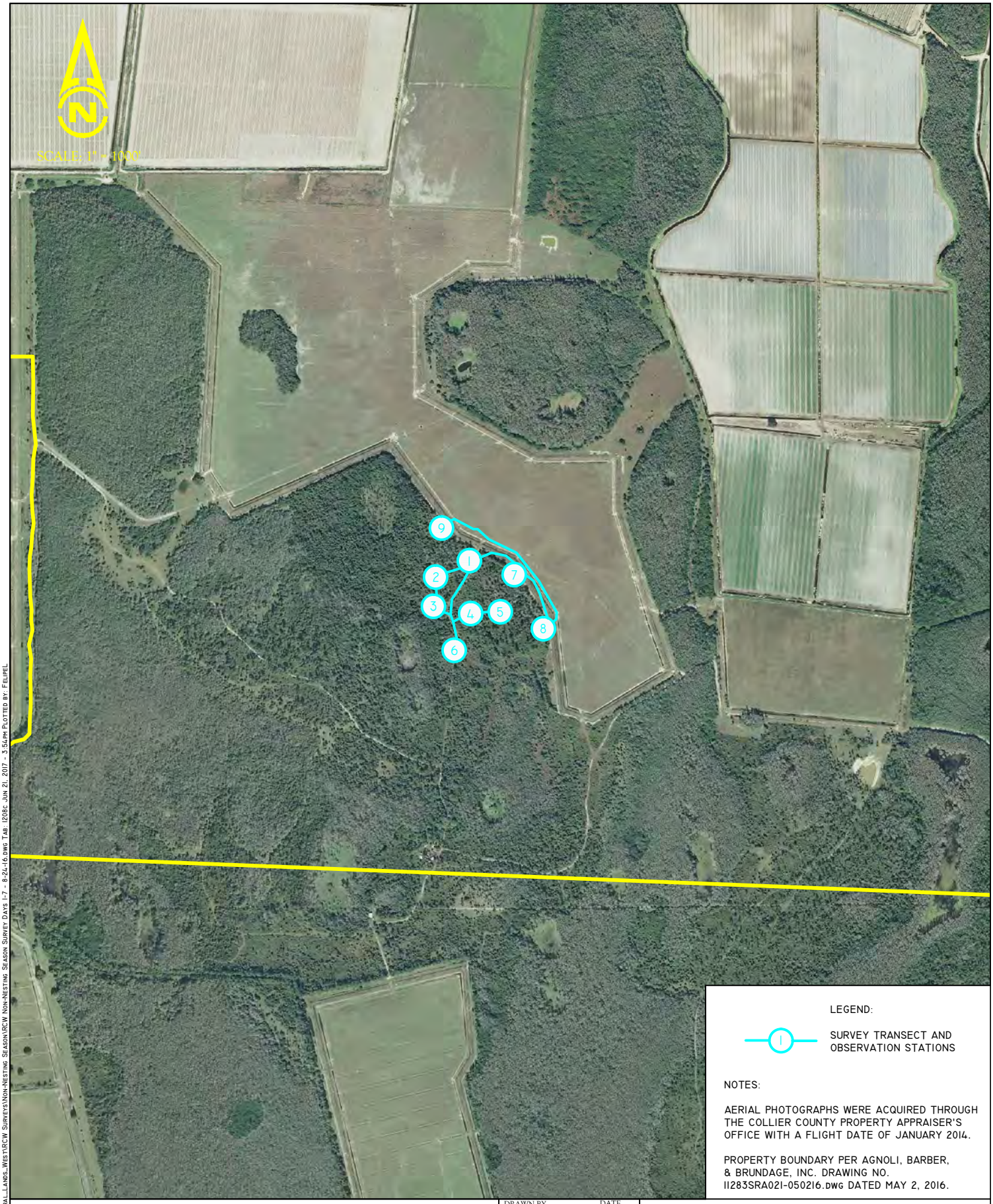
RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 8, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481\00_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 1-7 - 8-24-16.DWG TAB: 1206B JUN 21, 2017 - 3:54PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

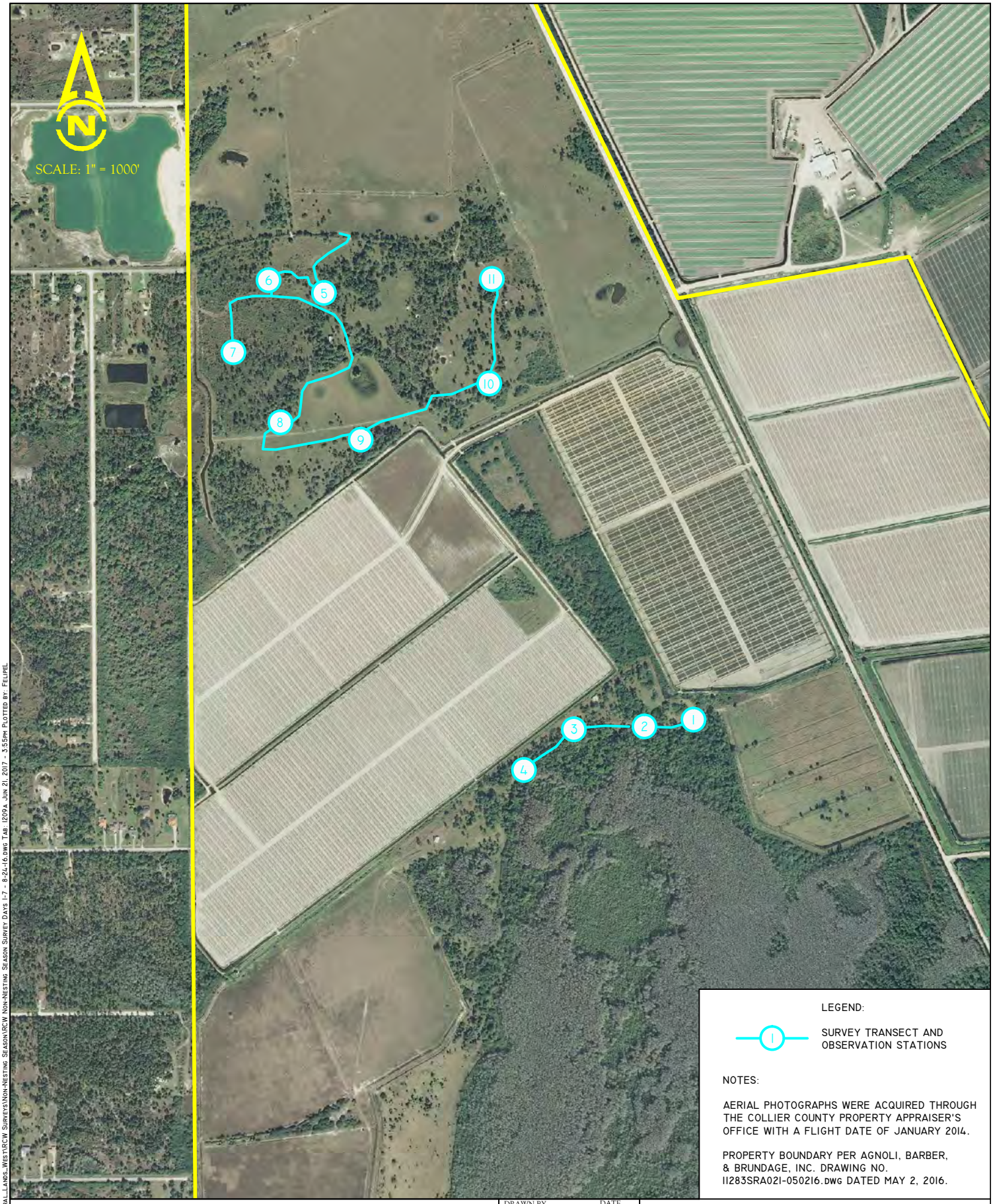
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 8, 2014

DRAWN BY	DATE
D.B.	1/5/14
REVIEWED BY	DATE
K.C.P.	1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 1-7 - 8-24-16.dwg Tab: 1206c Jun 21, 2017 - 3:54pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

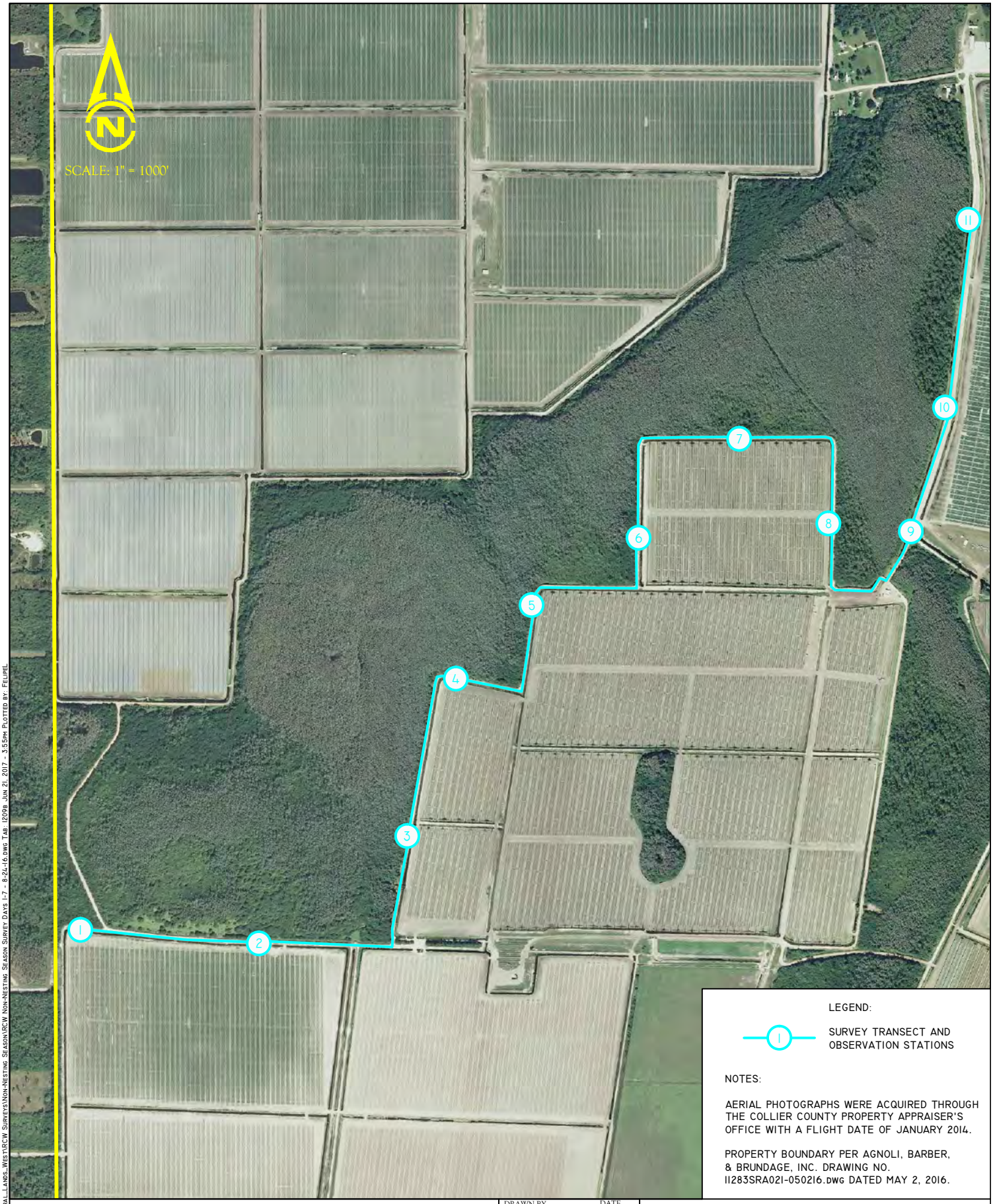
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 9, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 1-7 - 8-24-16.DWG TAB: 1209A JUN 21, 2017 - 3:55PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

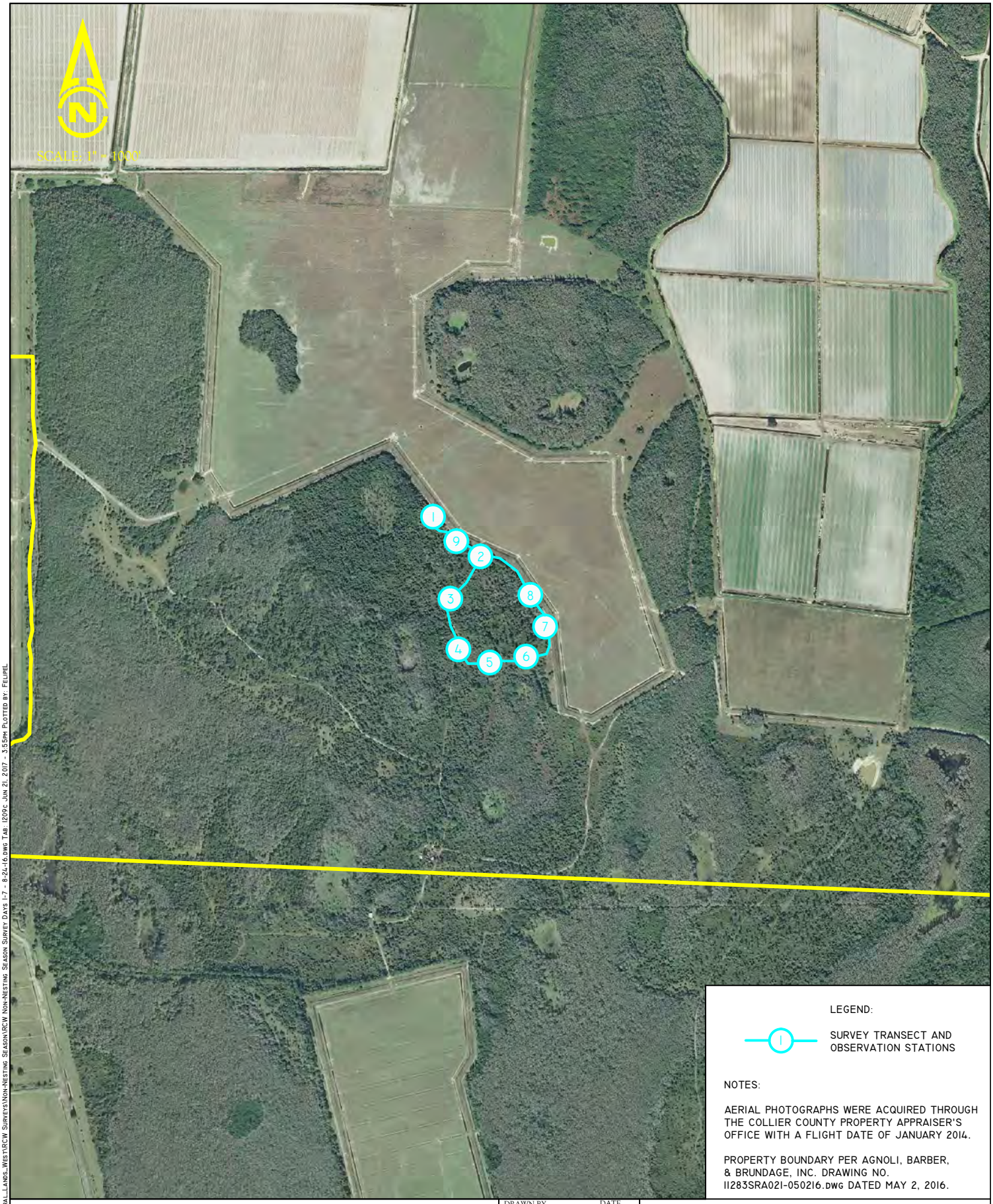
RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 9, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481\00_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 1-7 - 8-24-16.dwg Tab: 11209B Jun 21, 2017 - 3:55pm Plotted By: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

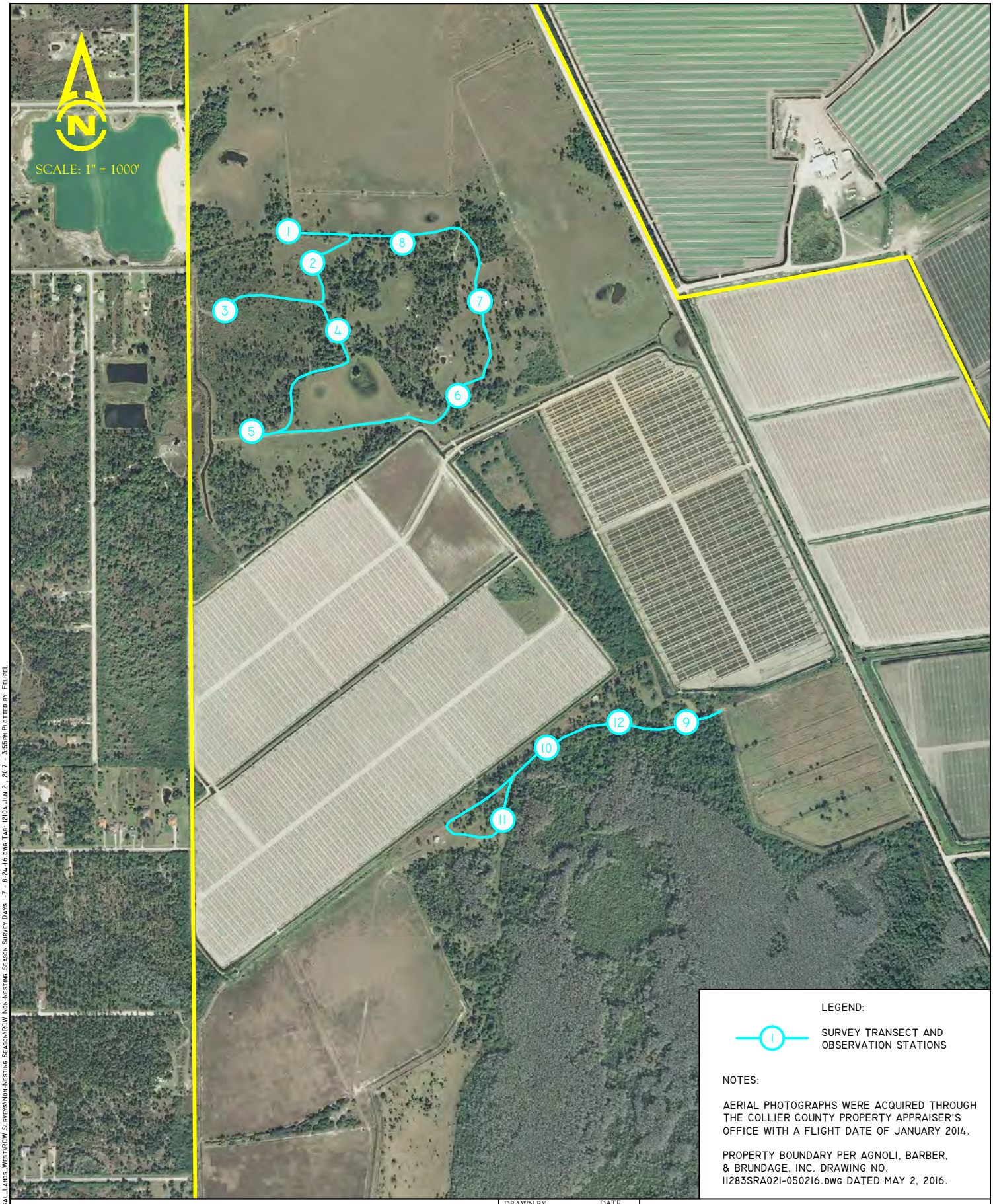
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 9, 2014

DRAWN BY: D.B.	DATE: 1/5/14
REVIEWED BY: K.C.P.	DATE: 1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 1-7 - 8-24-16.dwg Tab: 1209c Jun 21, 2017 - 3:53pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

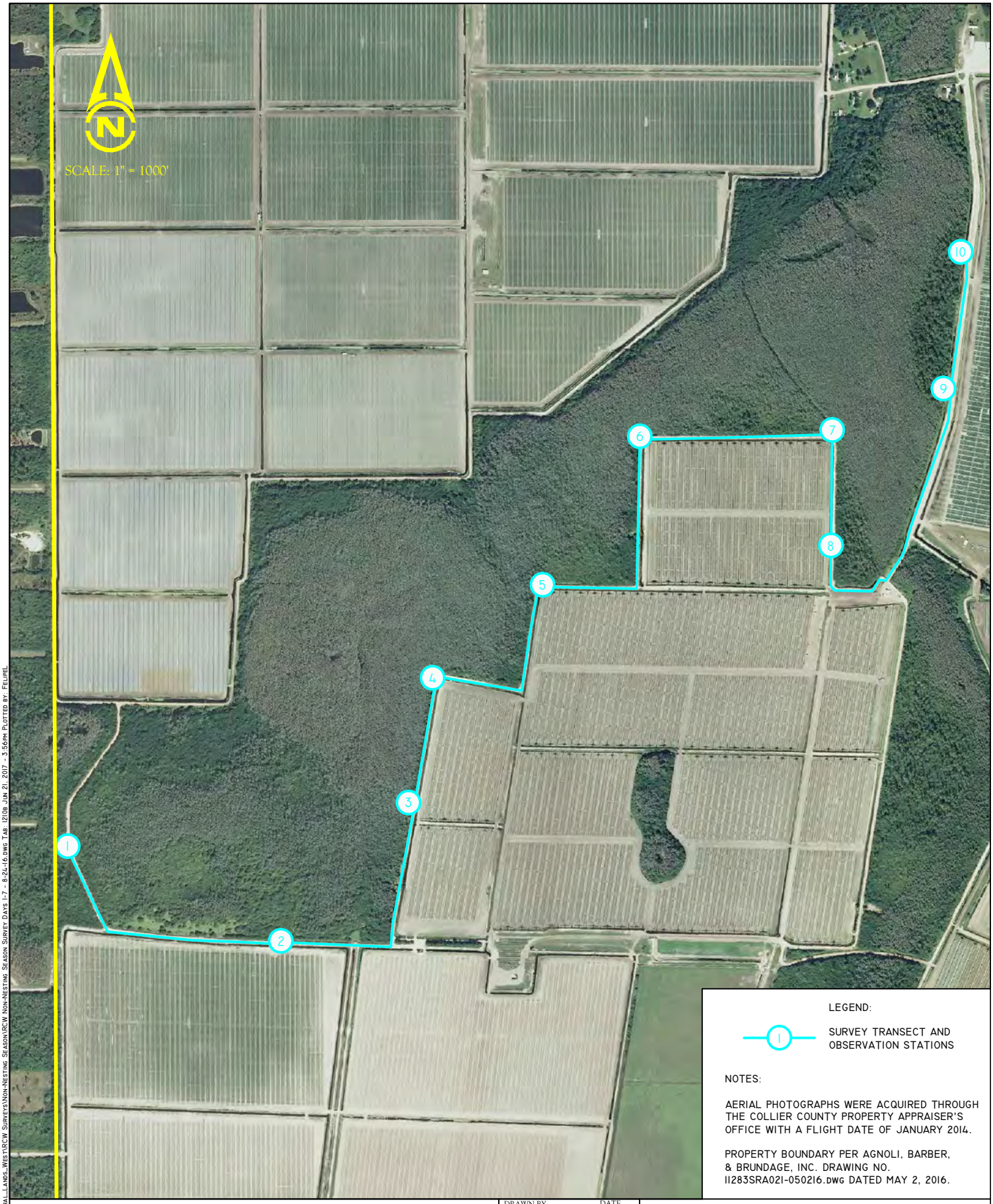
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 10, 2014

DRAWN BY	DATE
D.B.	1/5/14
REVIEWED BY	DATE
K.C.P.	1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 1-7 - 8-24-16.DWG TAB: 12IOA JUN 21, 2017 - 3:55PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

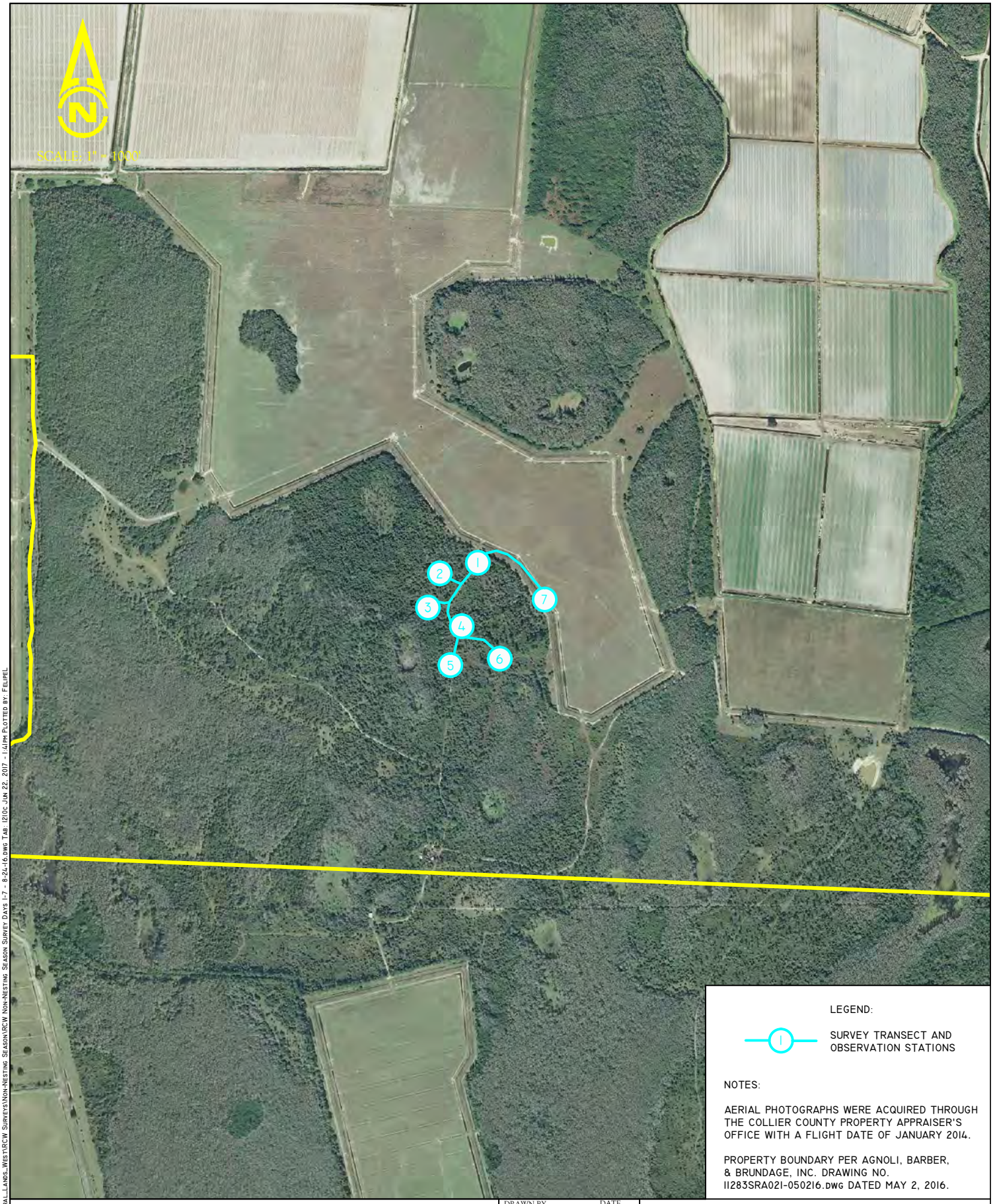
RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 10, 2014

DRAWN BY	DATE
D.B.	1/5/14
REVIEWED BY	DATE
K.C.P.	1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481\00_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 1-7 - 8-24-16.DWG TAB: 121108 JUN 21, 2017 - 3:56PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

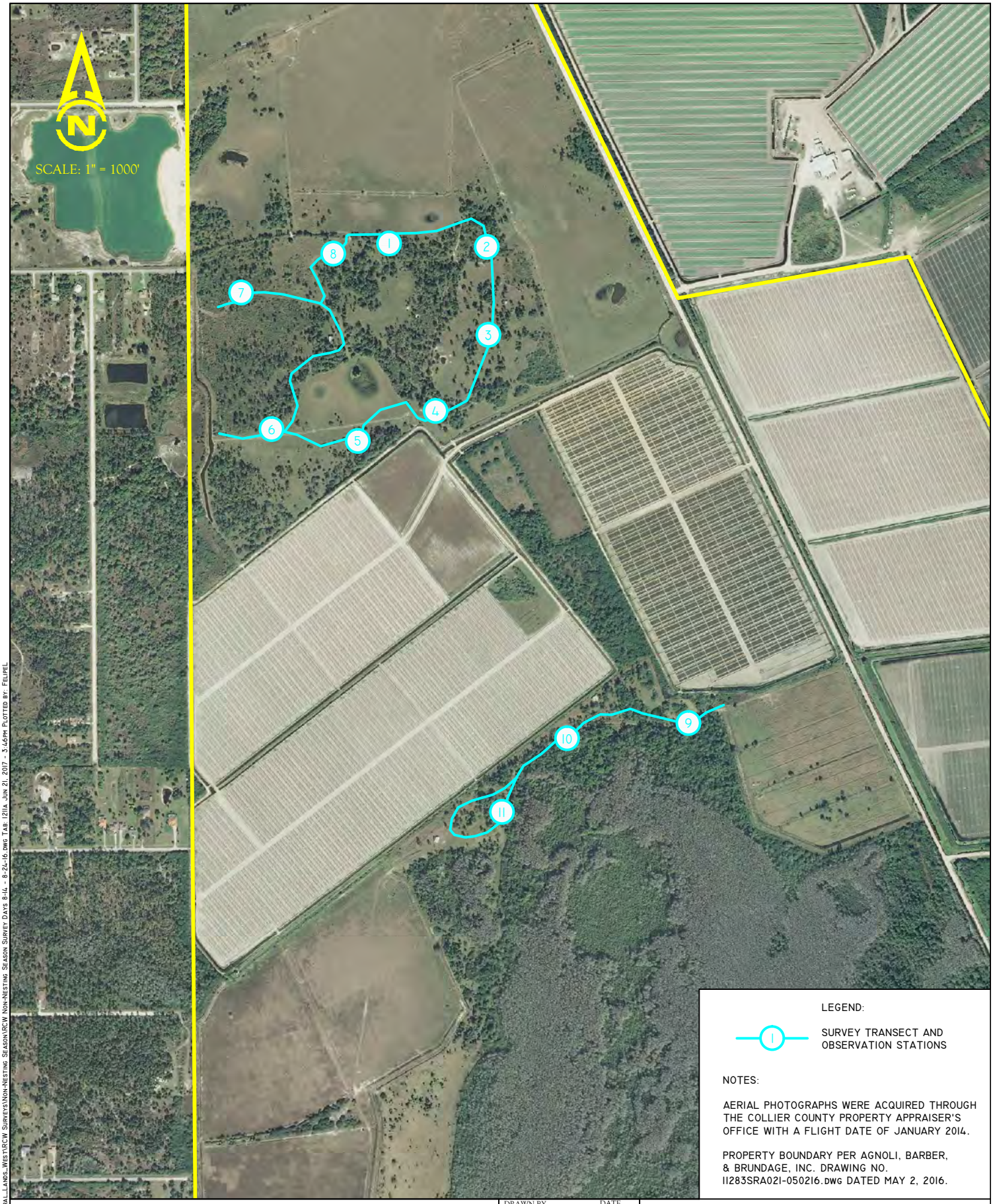
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 10, 2014

DRAWN BY	DATE
D.B.	1/5/14
REVIEWED BY	DATE
K.C.P.	1/5/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 1-7 - 8-24-16.dwg Tab: 12|0c Jun 22, 2017 - 1:41pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

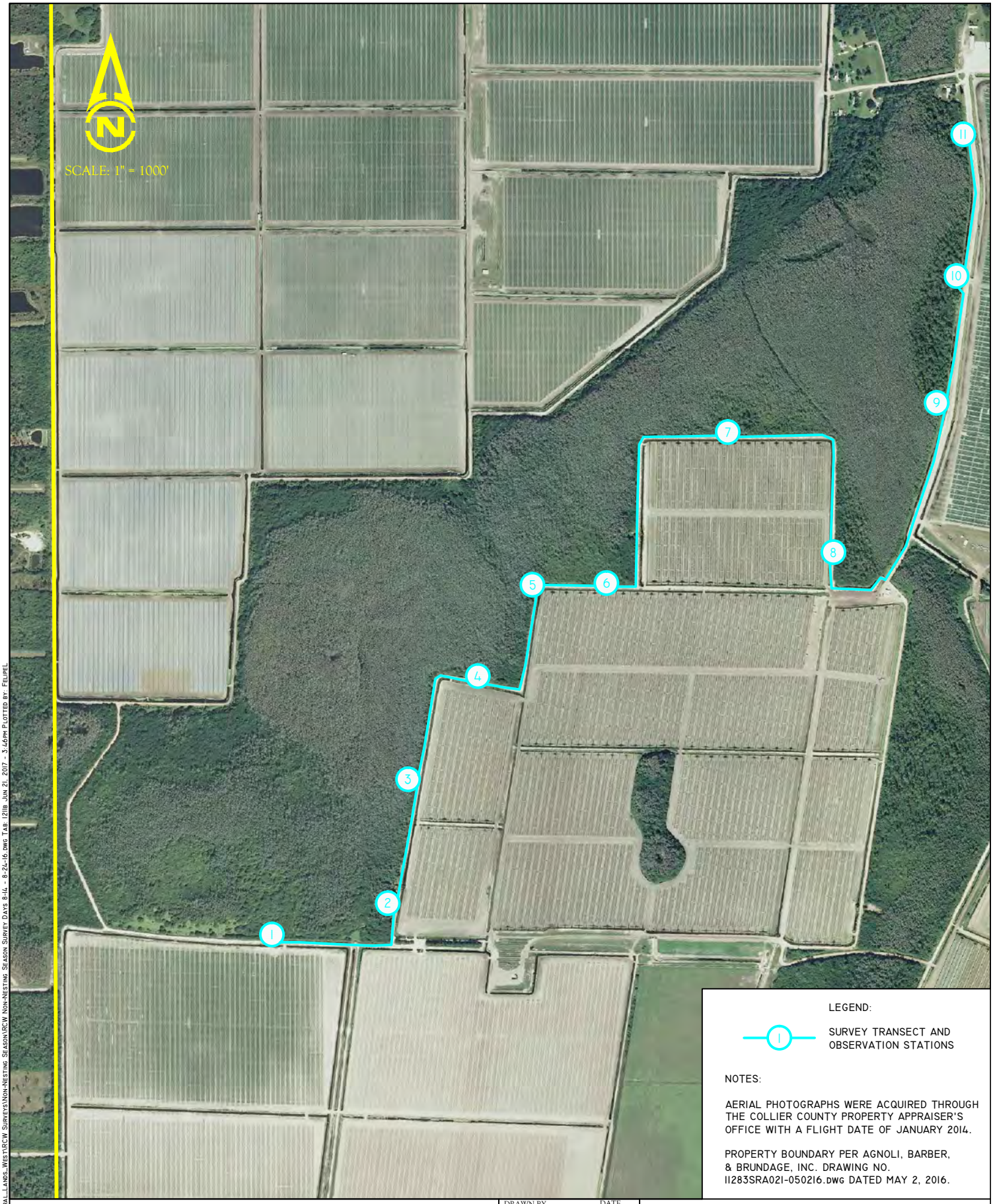
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 11, 2014

DRAWN BY	DATE
D.B.	1/2/14
REVIEWED BY	DATE
K.C.P.	1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: I2IA JUN 21, 2017 - 3:46PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

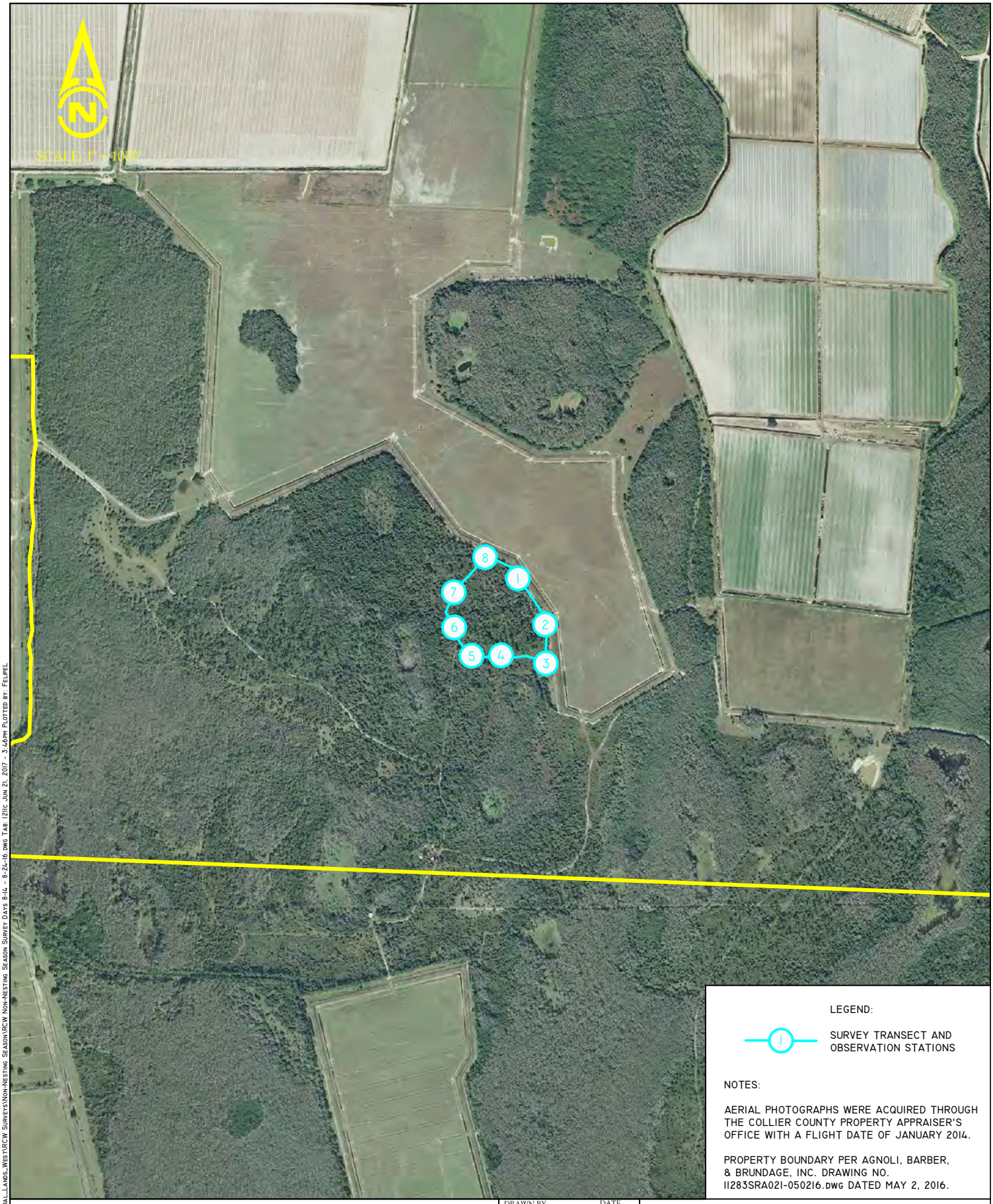
RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 11, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cem168\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: 12IB JUN 21, 2017 - 3:46PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

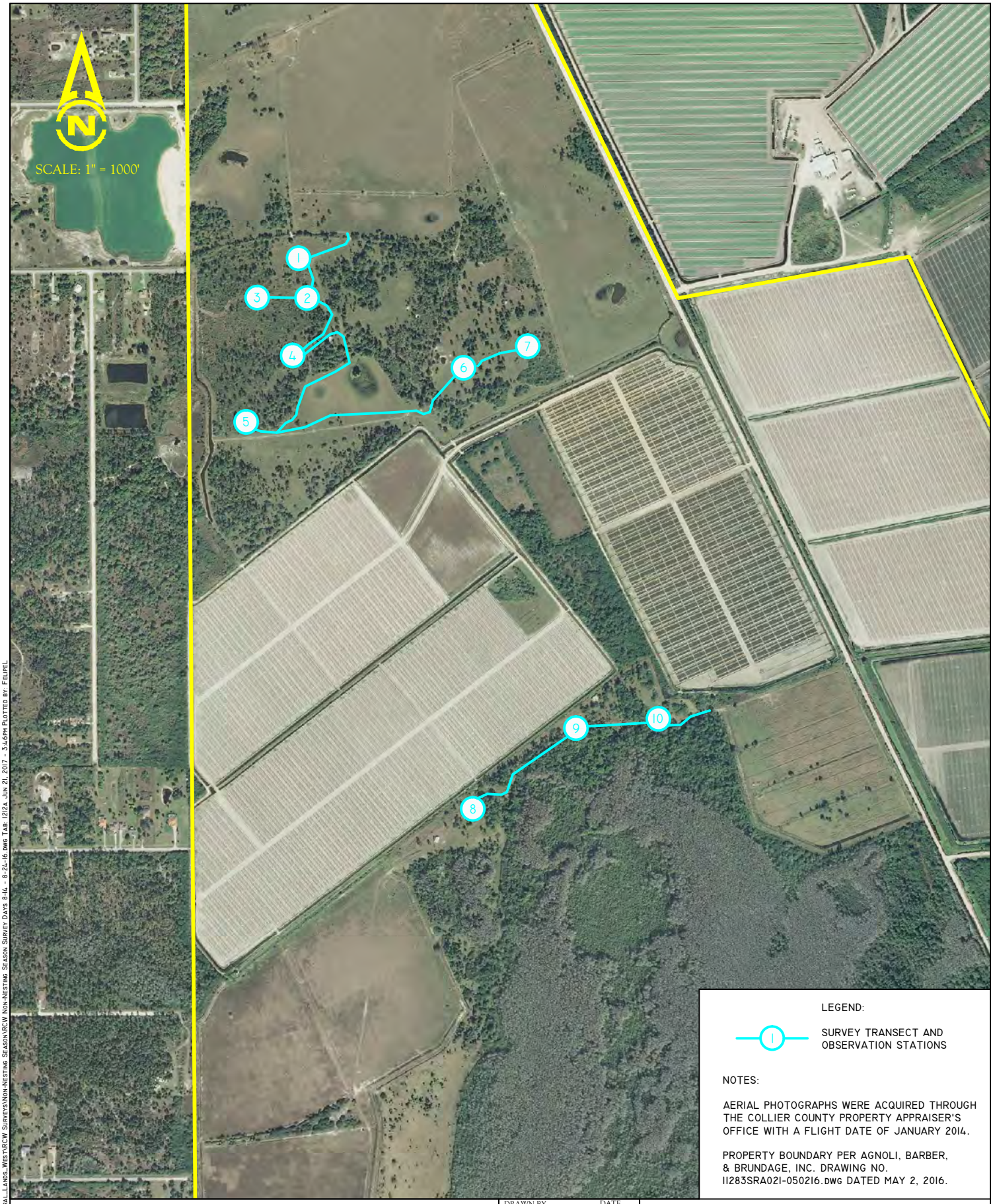
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 11, 2014

DRAWN BY	DATE
D.B.	1/2/14
REVIEWED BY	DATE
K.C.P.	1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 12ilc Jun 21, 2017 - 3:46pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

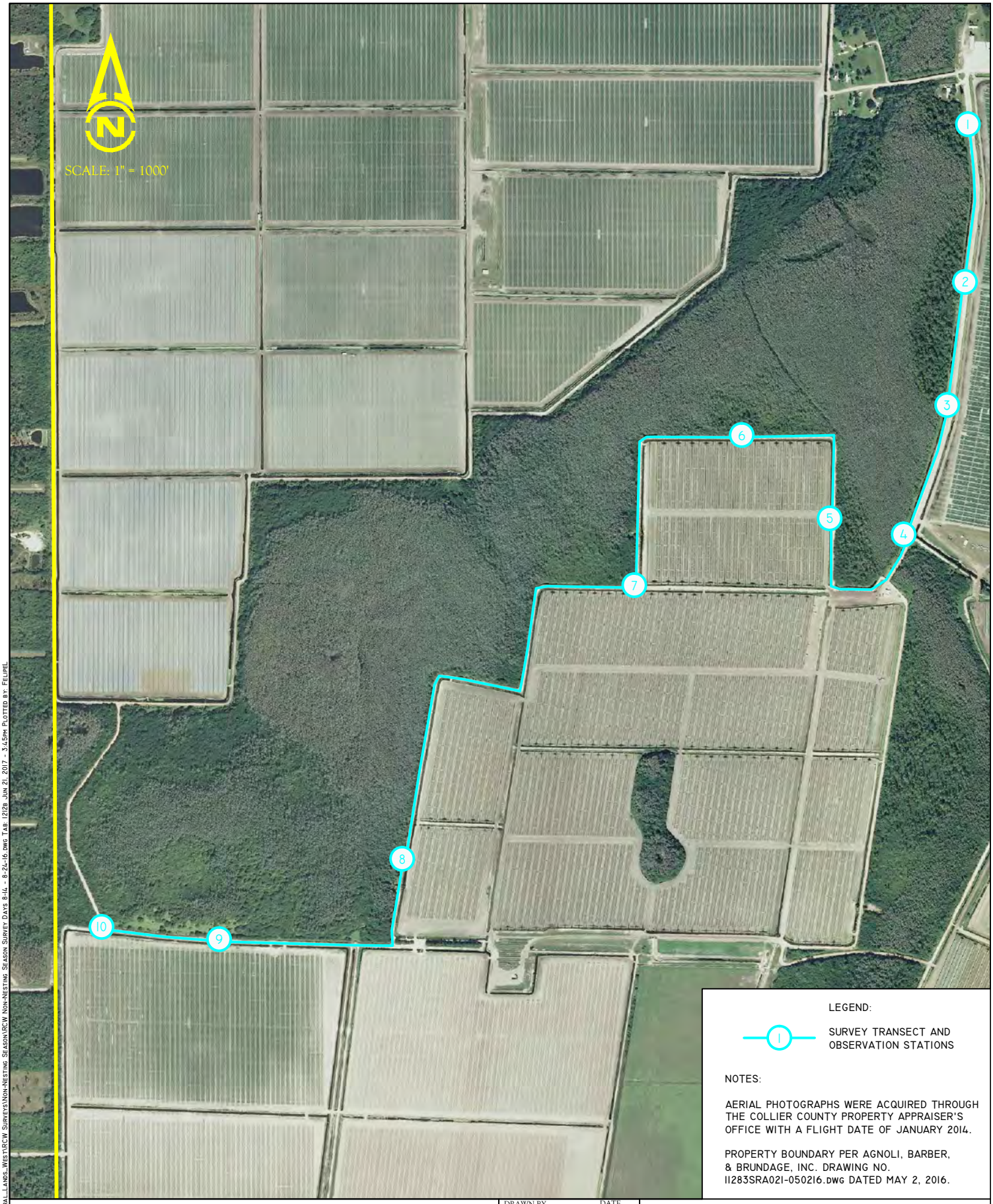
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 12, 2014

DRAWN BY	DATE
D.B.	1/2/14
REVIEWED BY	DATE
K.C.P.	1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: I2I2A JUN 21, 2017 - 3:46PM PLOTTED BY: FELIPEL



LEGEND:

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NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 12, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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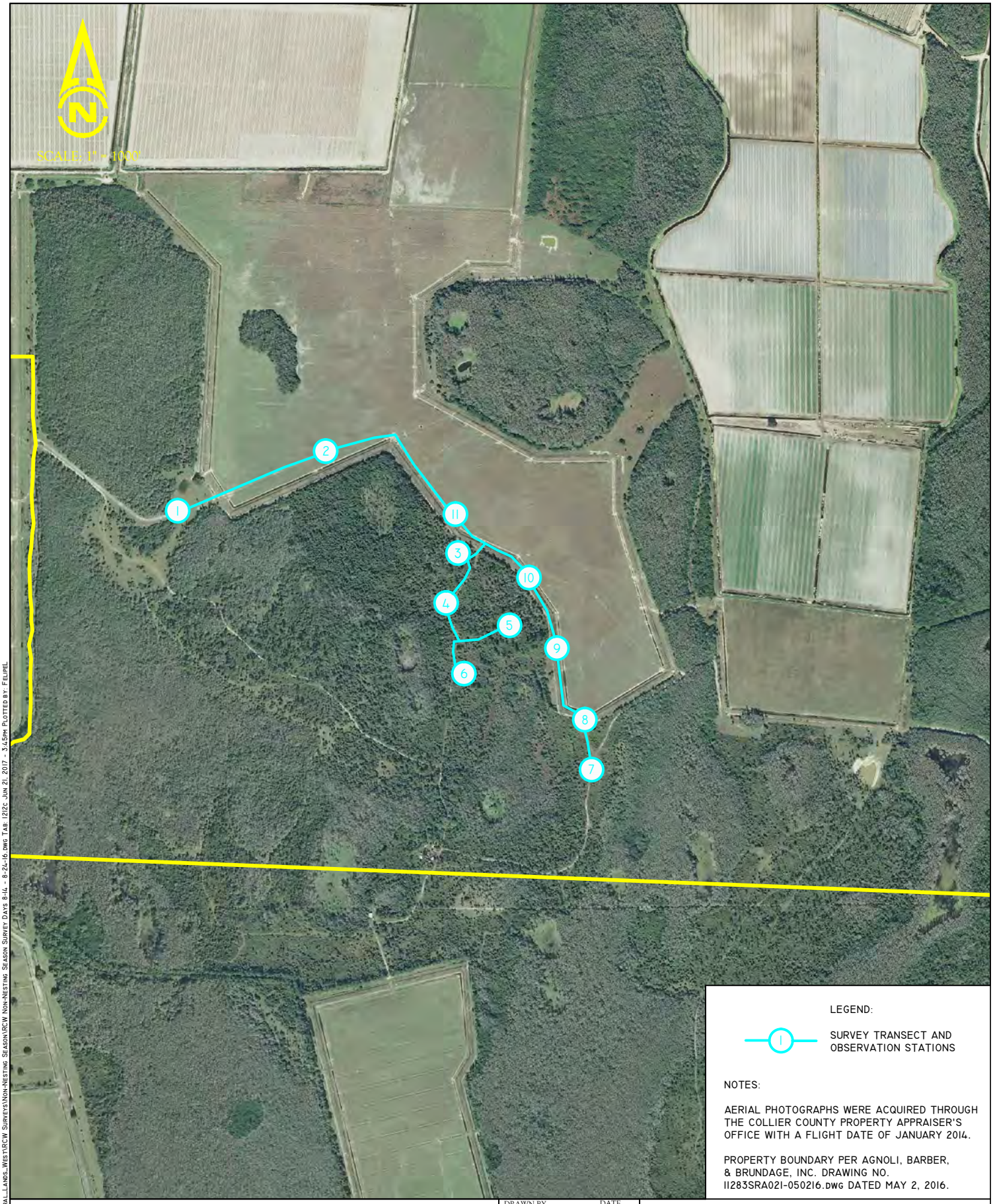

LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

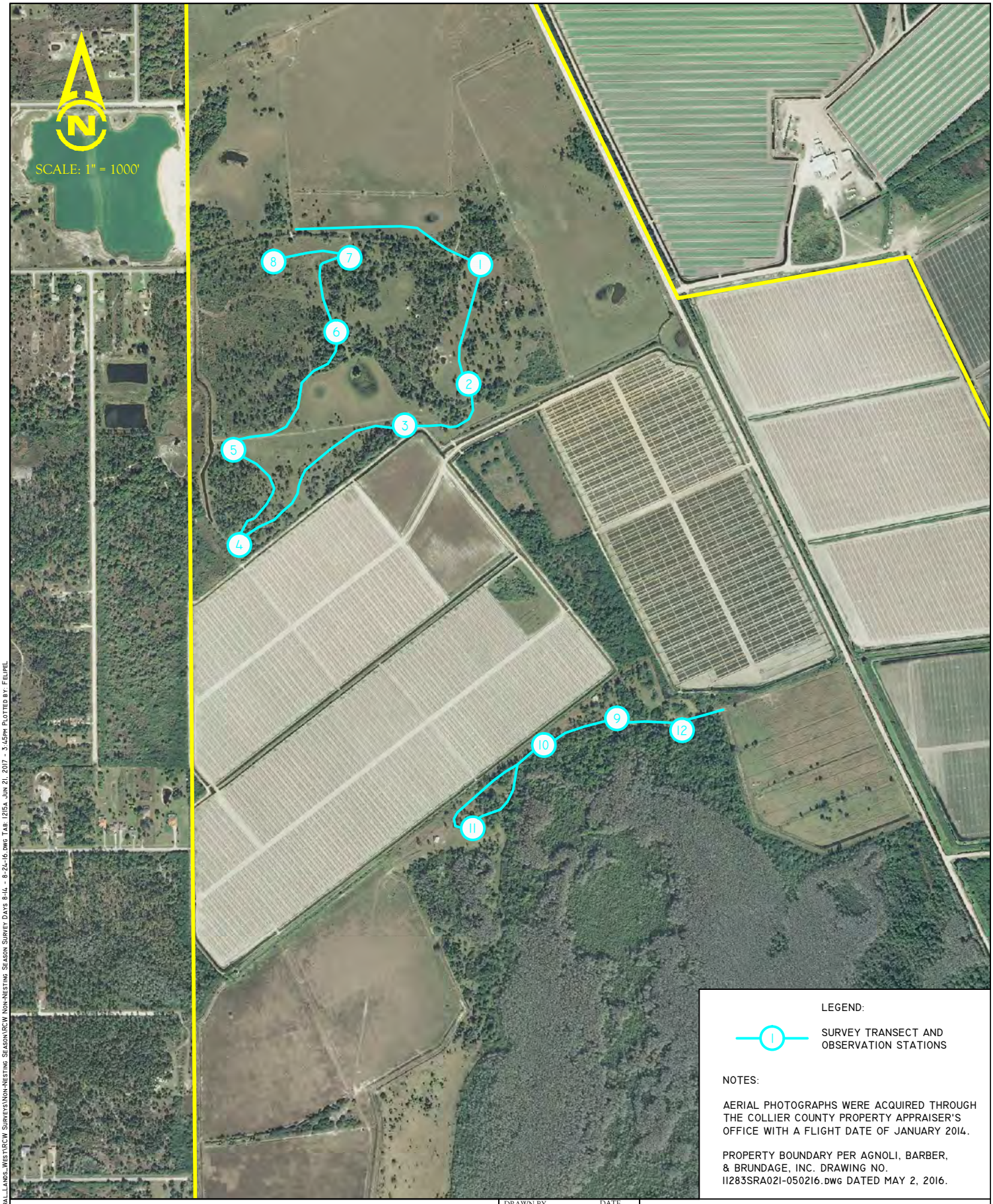
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 12, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 12126 - Jun 21, 2017 - 3:45pm Plotted by: Felipe



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

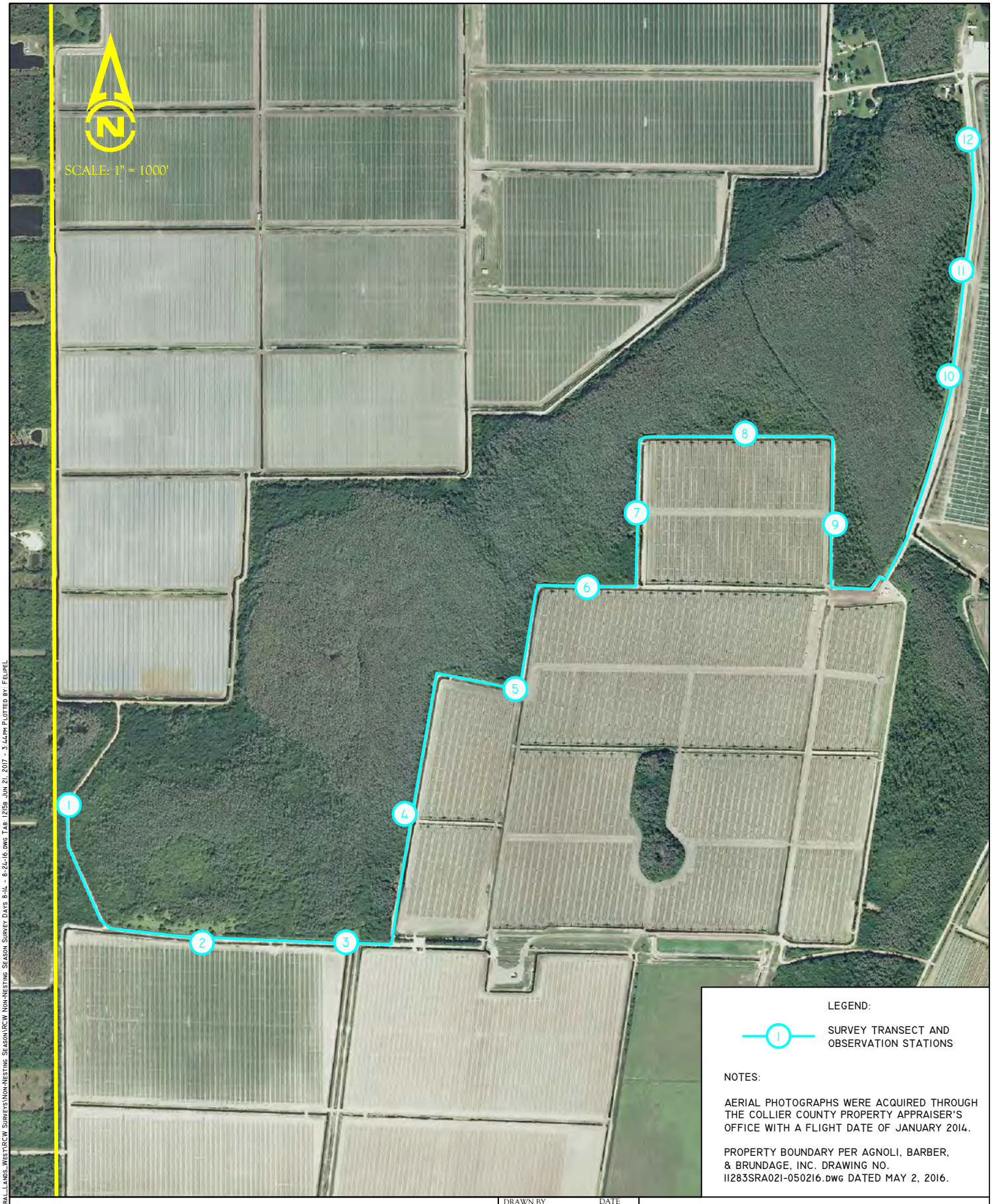
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 15, 2014

DRAWN BY	DATE
D.B.	1/2/14
REVIEWED BY	DATE
K.C.P.	1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: 12ISA JUN 21, 2017 - 3:45PM PLOTTED BY: FELIPEL



LEGEND:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

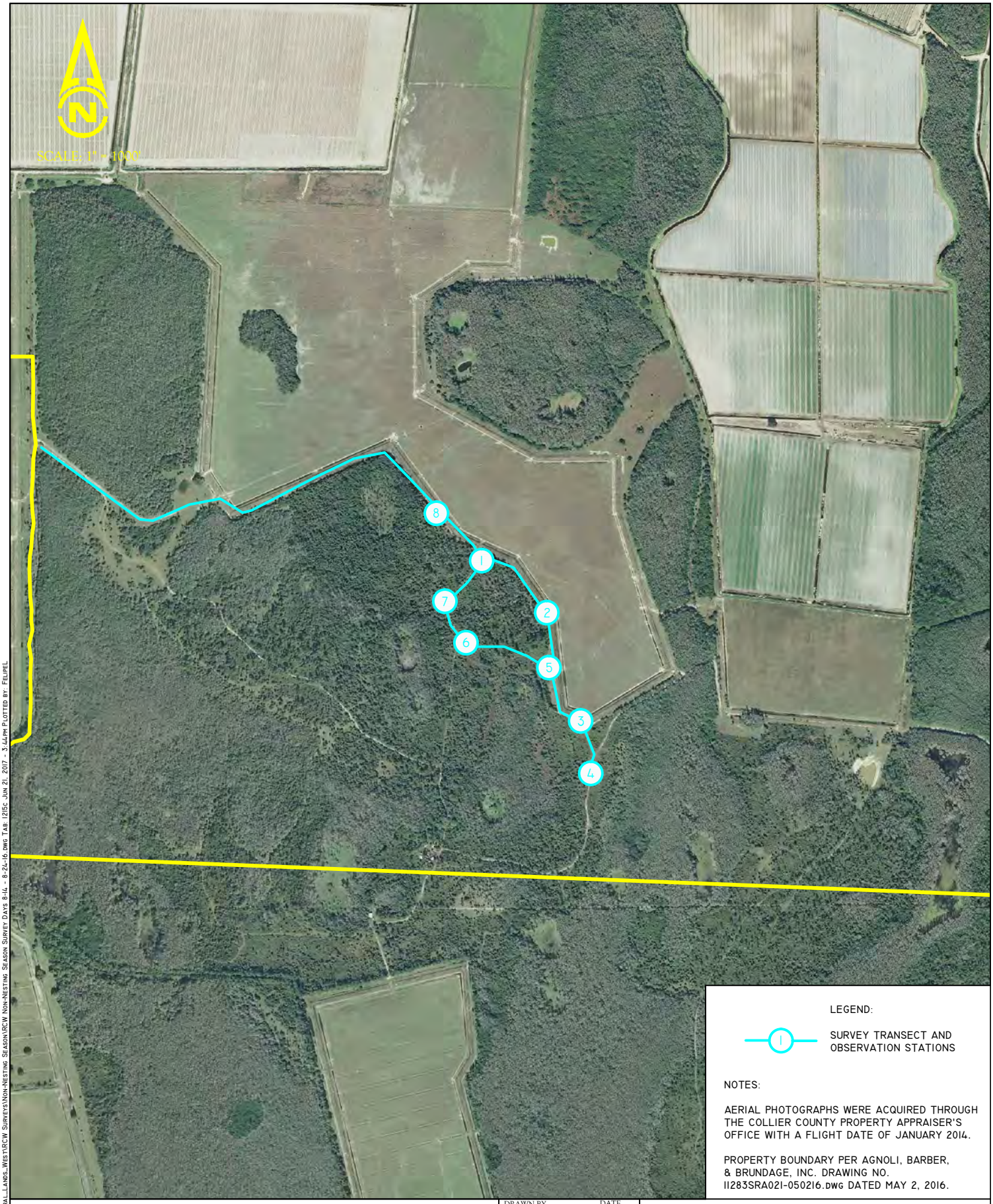
RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 15, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: 12158 JUN 21, 2017 - 3:44PM PLOTTED BY: FELIPEL



LEGEND:

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PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

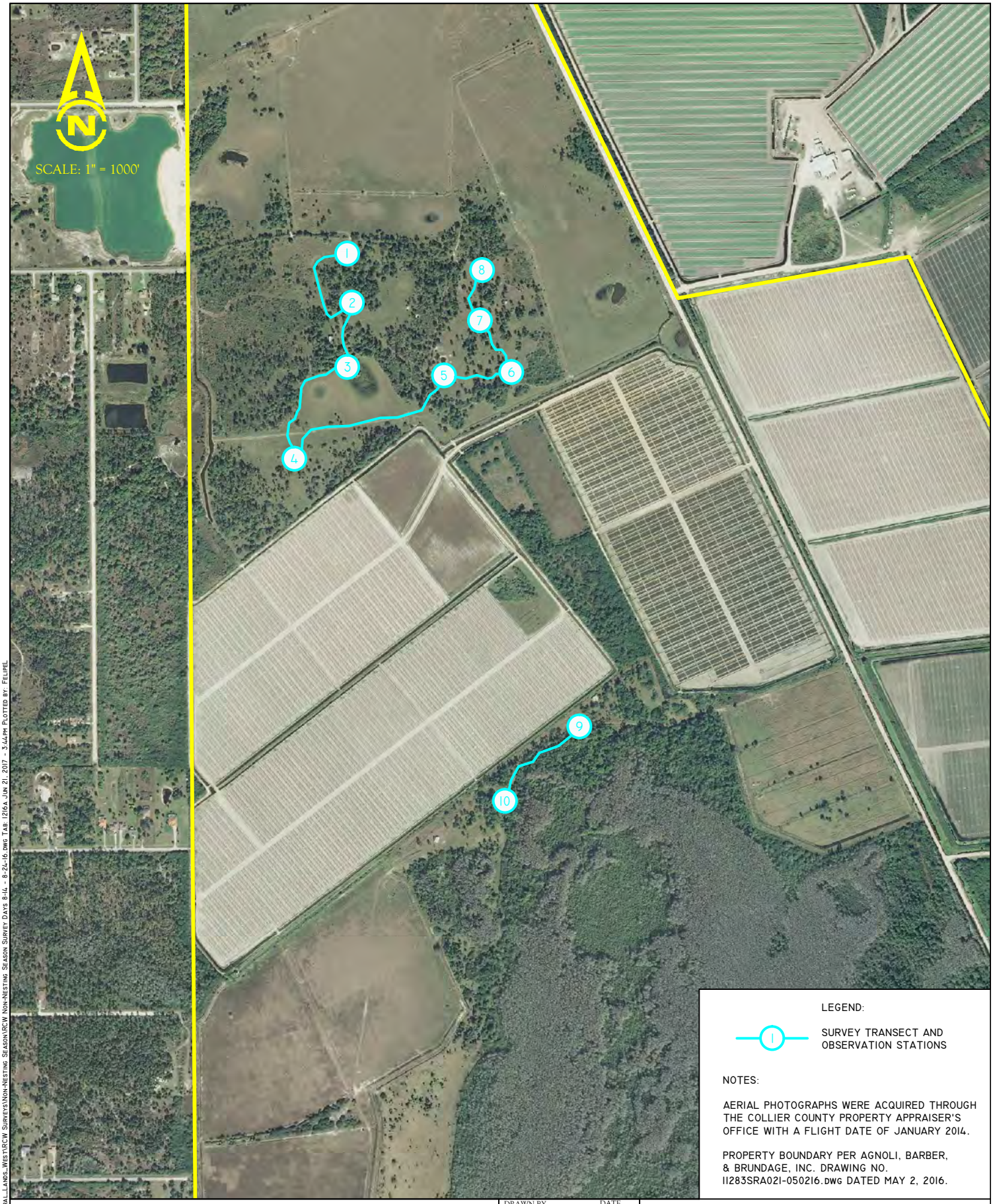
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 15, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 1215c Jun 21, 2017 - 3:44pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

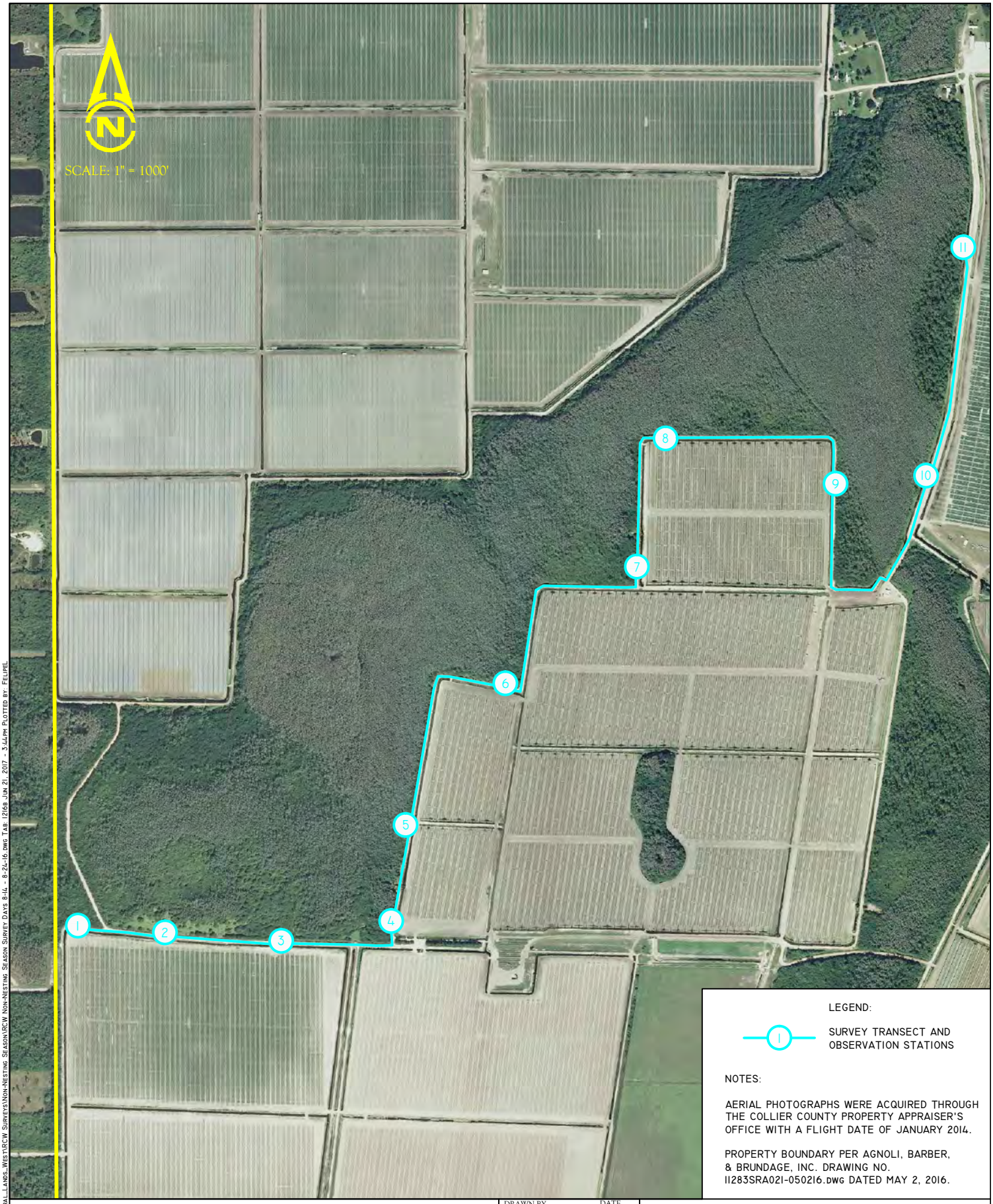
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 16, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: I216A JAN 21, 2017 - 3:44PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 16, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

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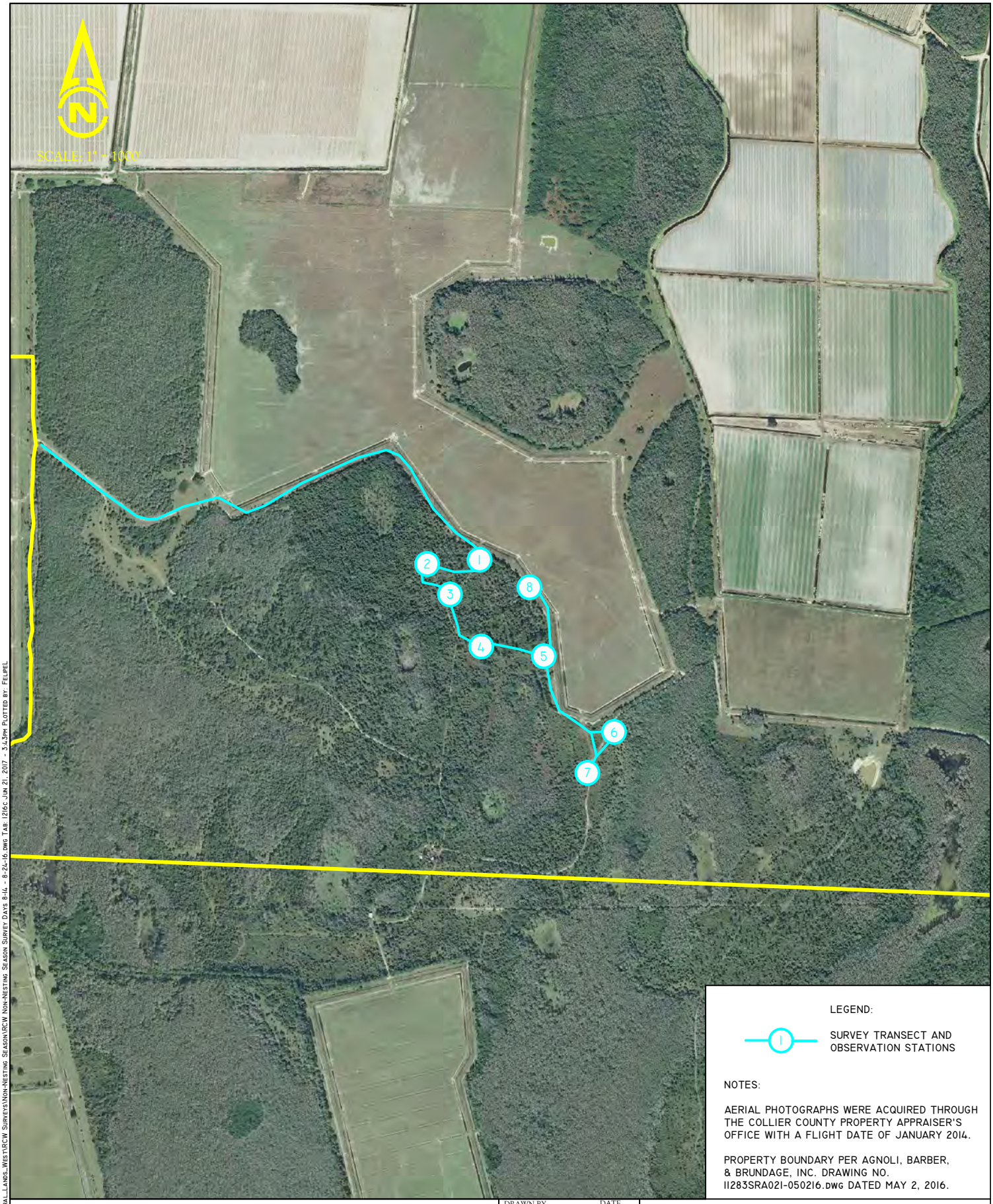


LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

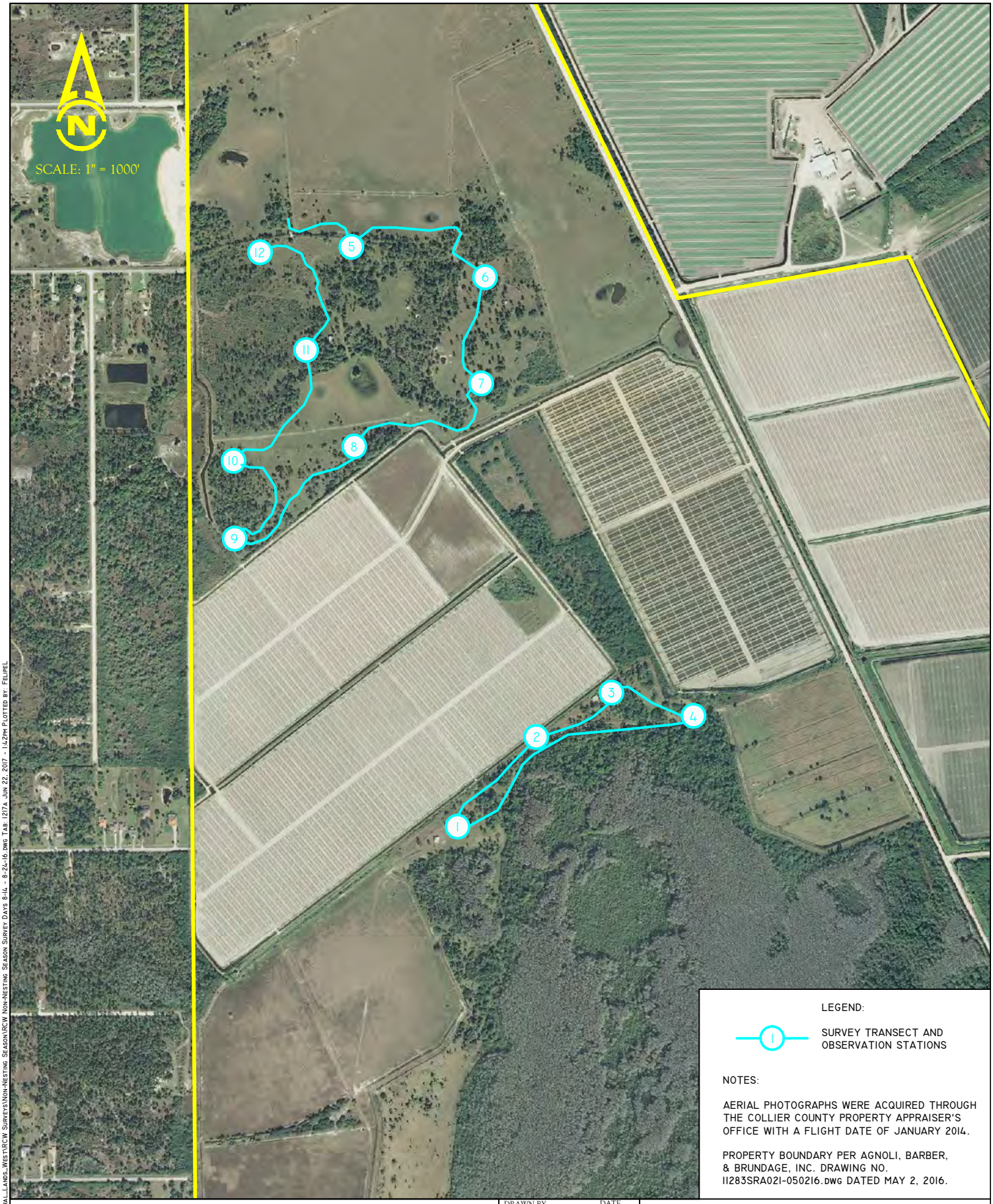
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 16, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 1216c Jan 21, 2017 - 3:43pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

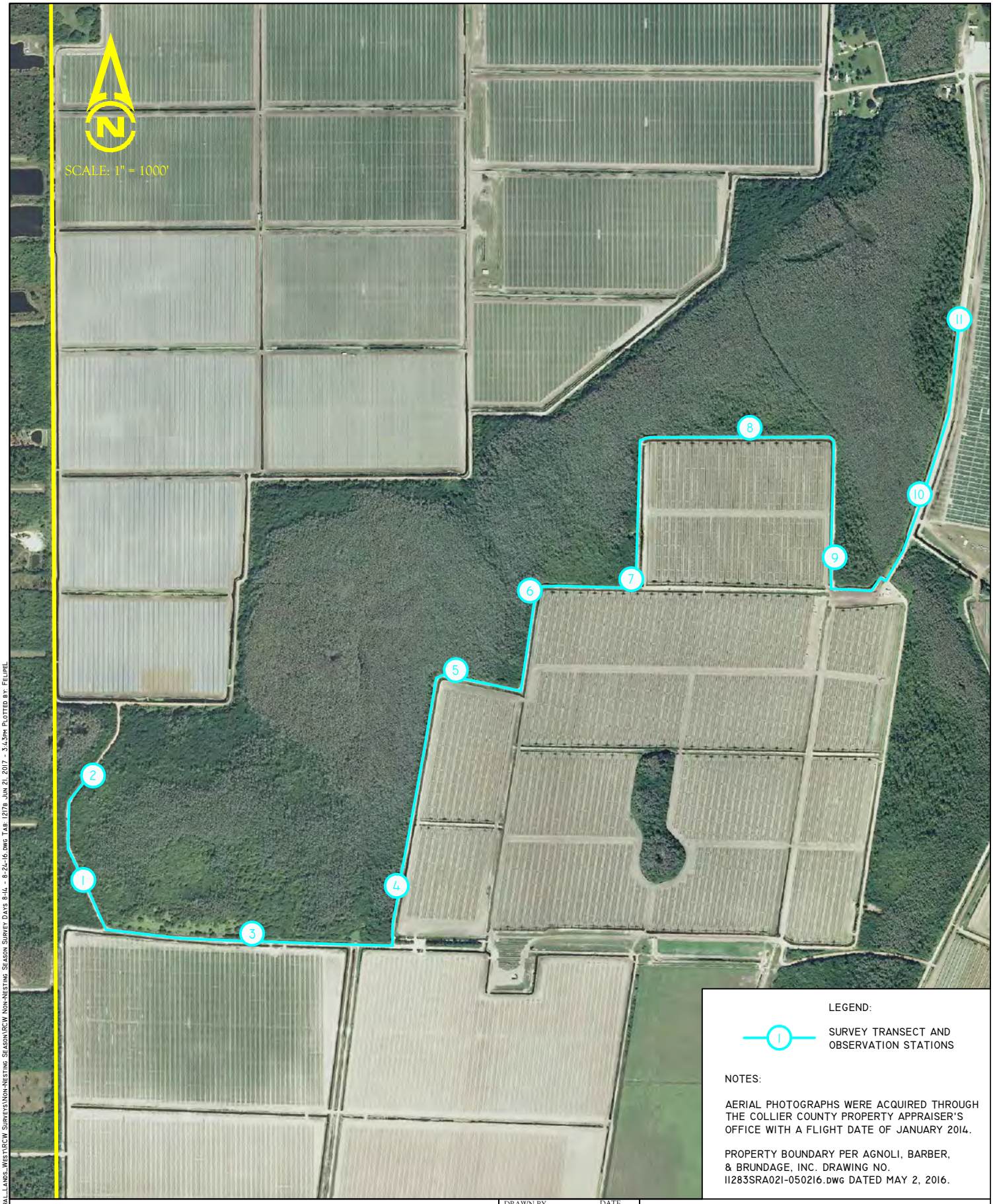
PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY
RURAL LANDS WEST - SURVEY AREA "A"
DATE: DECEMBER 17, 2014

DRAWN BY	DATE
D.B.	1/2/14
REVIEWED BY	DATE
K.C.P.	1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: I217A JUN 22, 2017 - 1:42PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

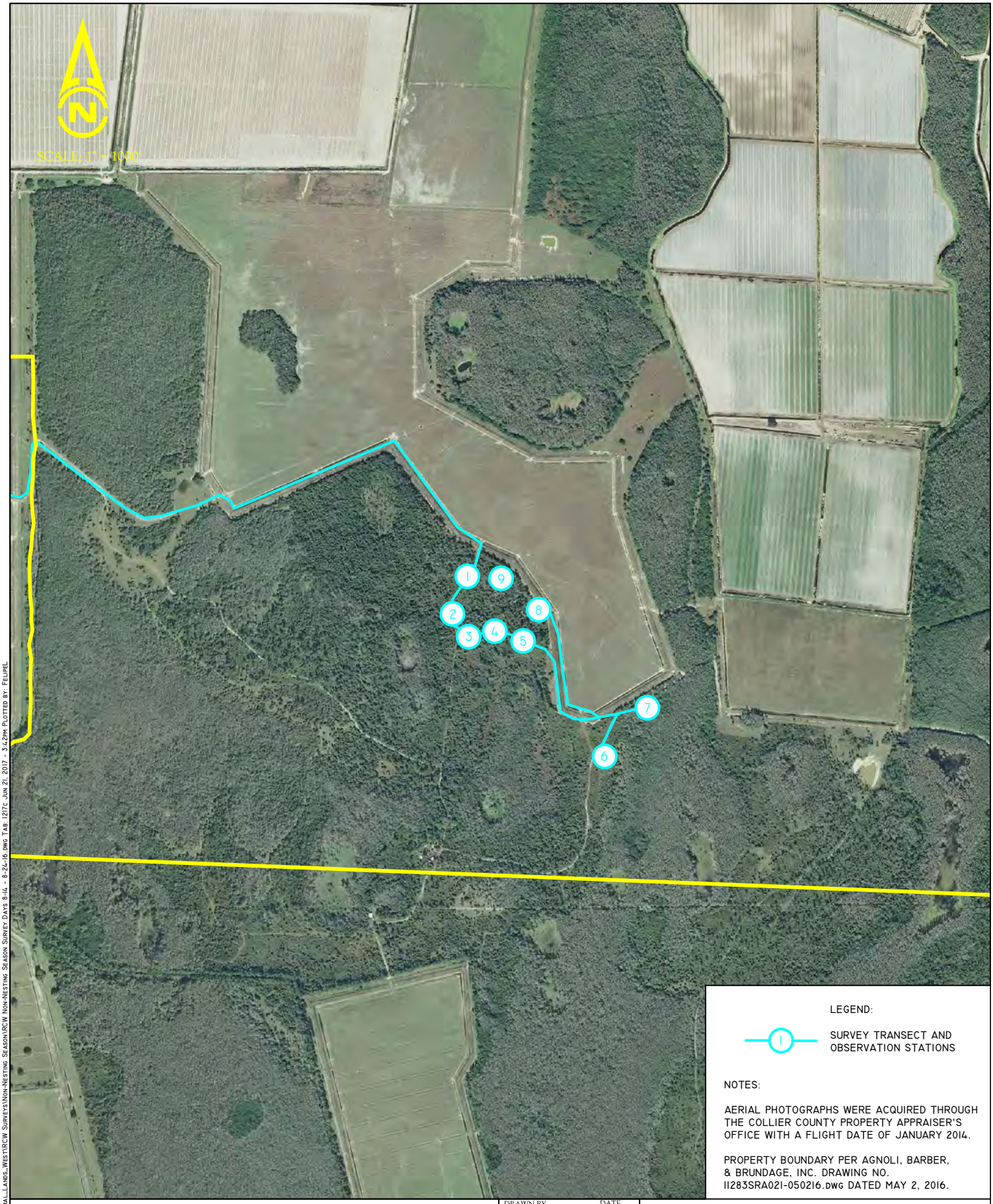
RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 17, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481\00_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: 12178 JUN 21, 2017 - 3:43PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

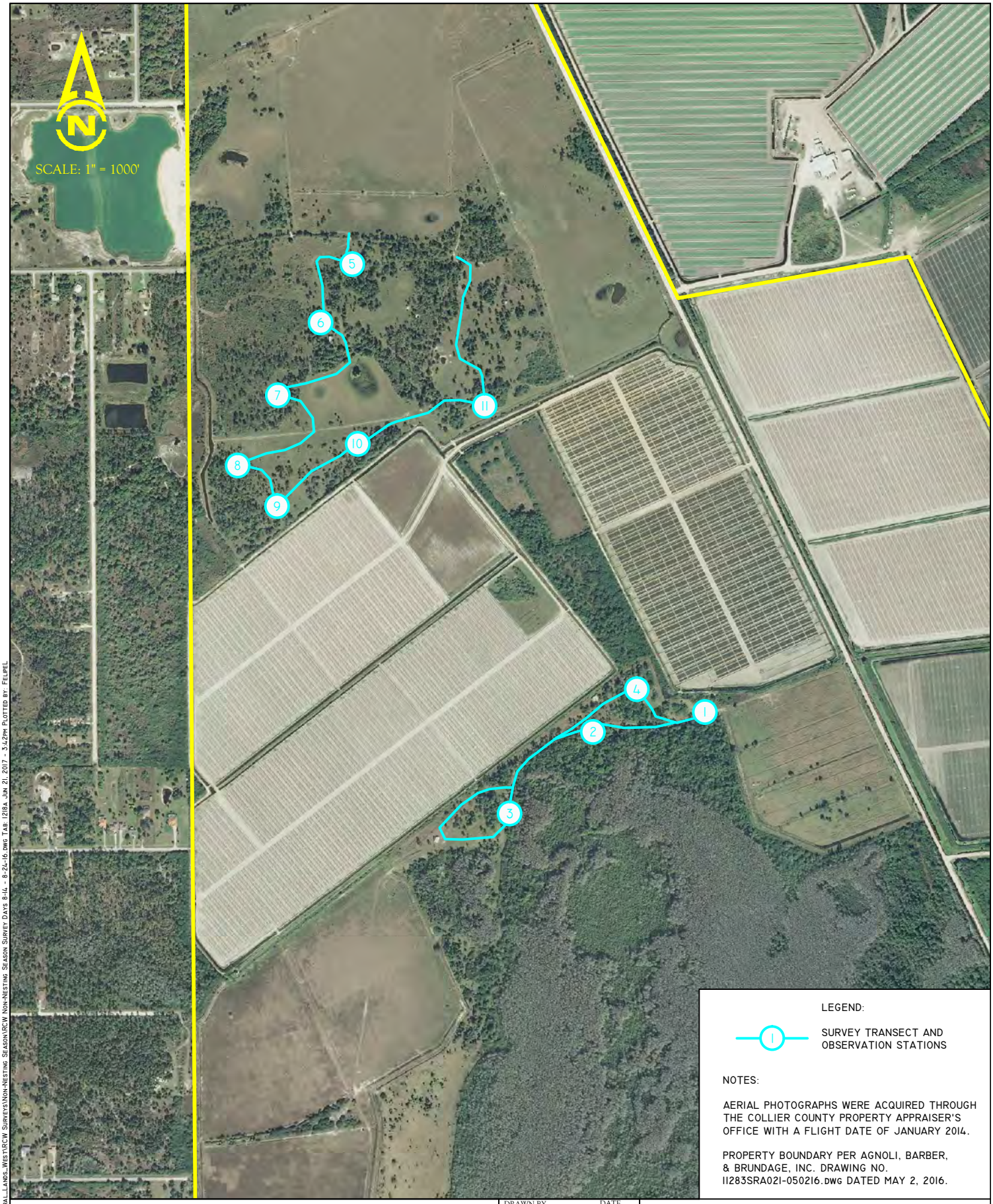
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 17, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 1217c Jun 21, 2017 - 3:42pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

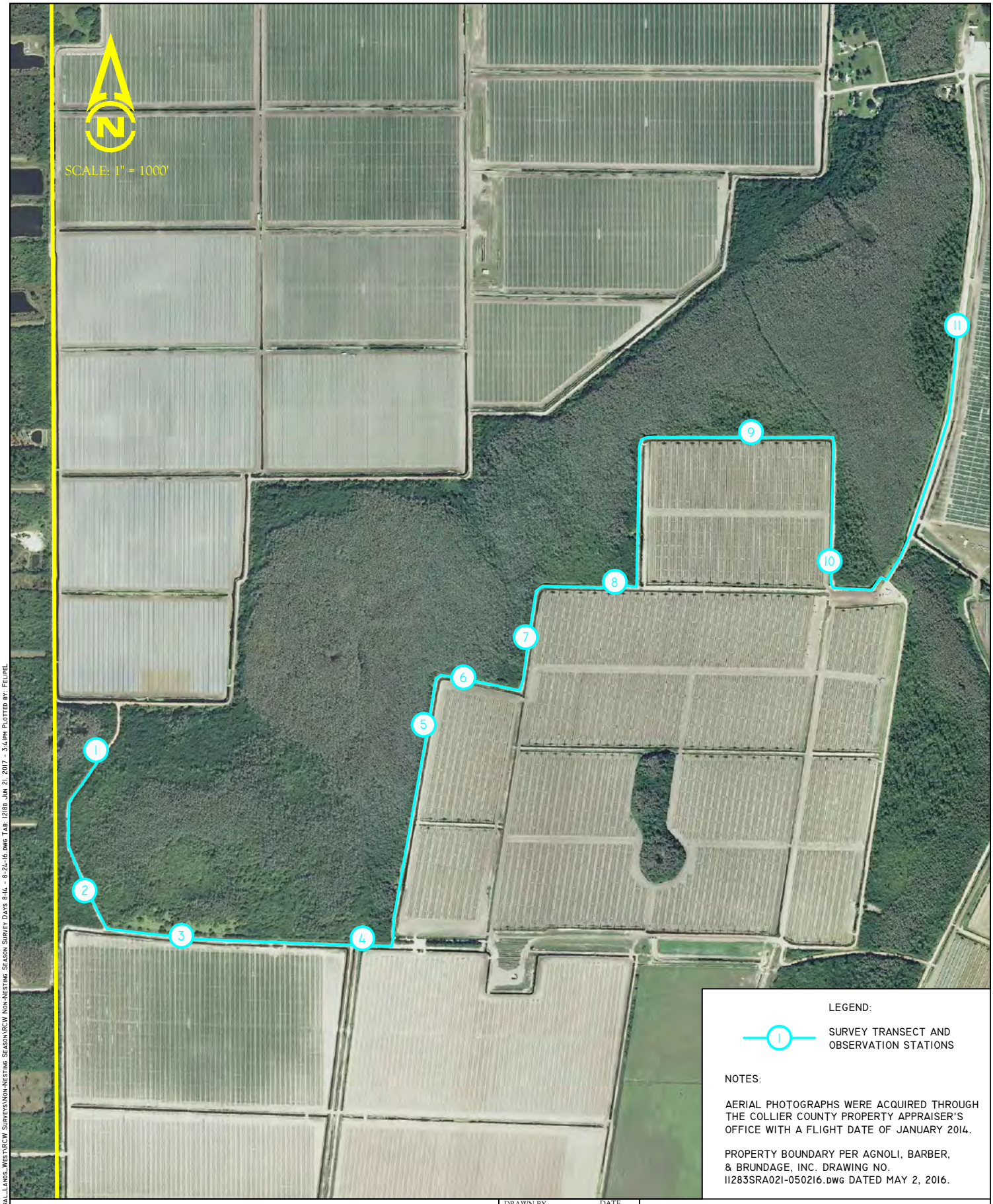
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 18, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: I2I8A JAN 2I, 2017 - 3:42PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

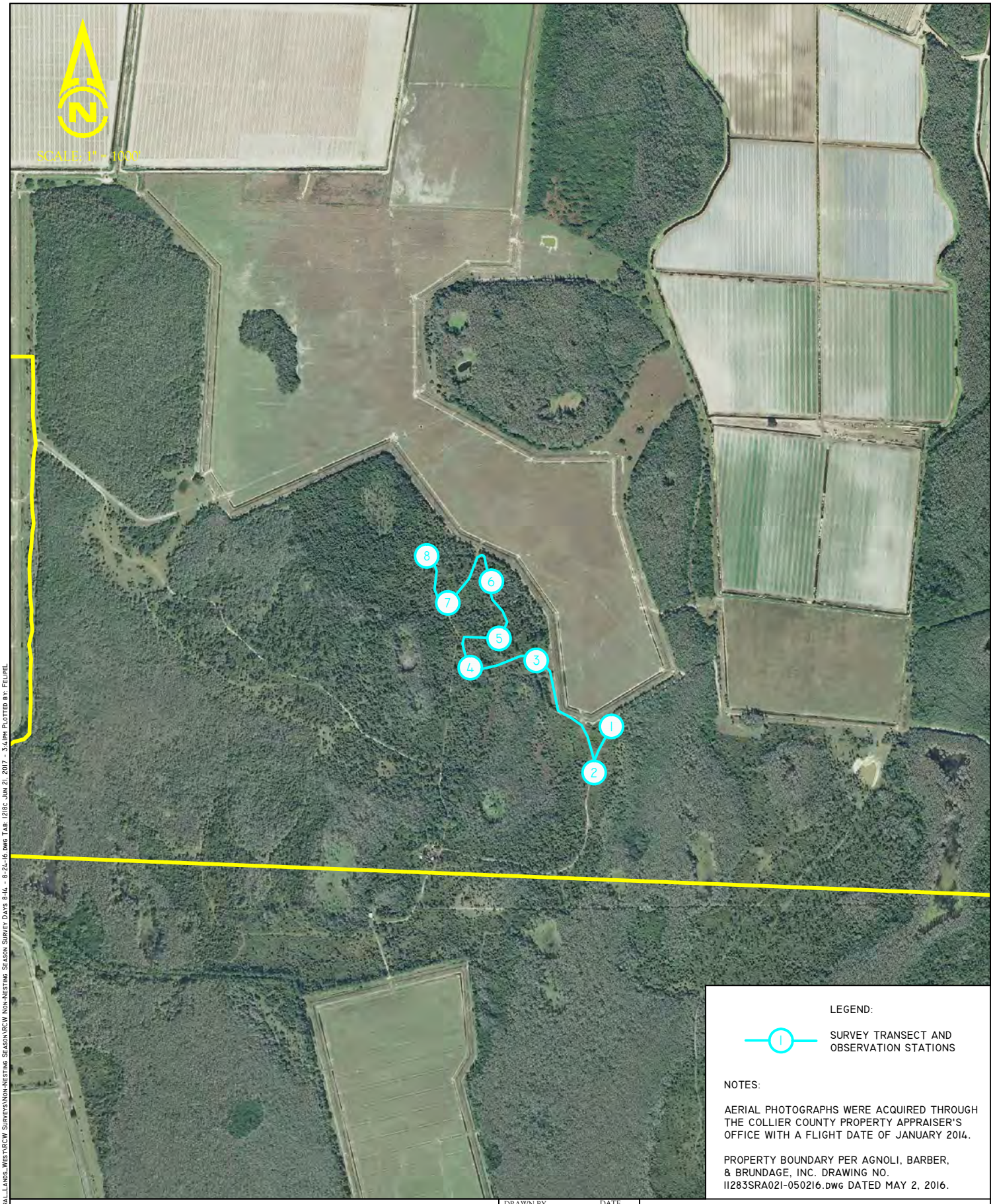
RURAL LANDS WEST - SURVEY AREA "B"

DATE: DECEMBER 18, 2014

DRAWN BY: D.B.	DATE: 1/2/14
REVIEWED BY: K.C.P.	DATE: 1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 12bb Jun 21, 2017 - 3:41pm Plotted by: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

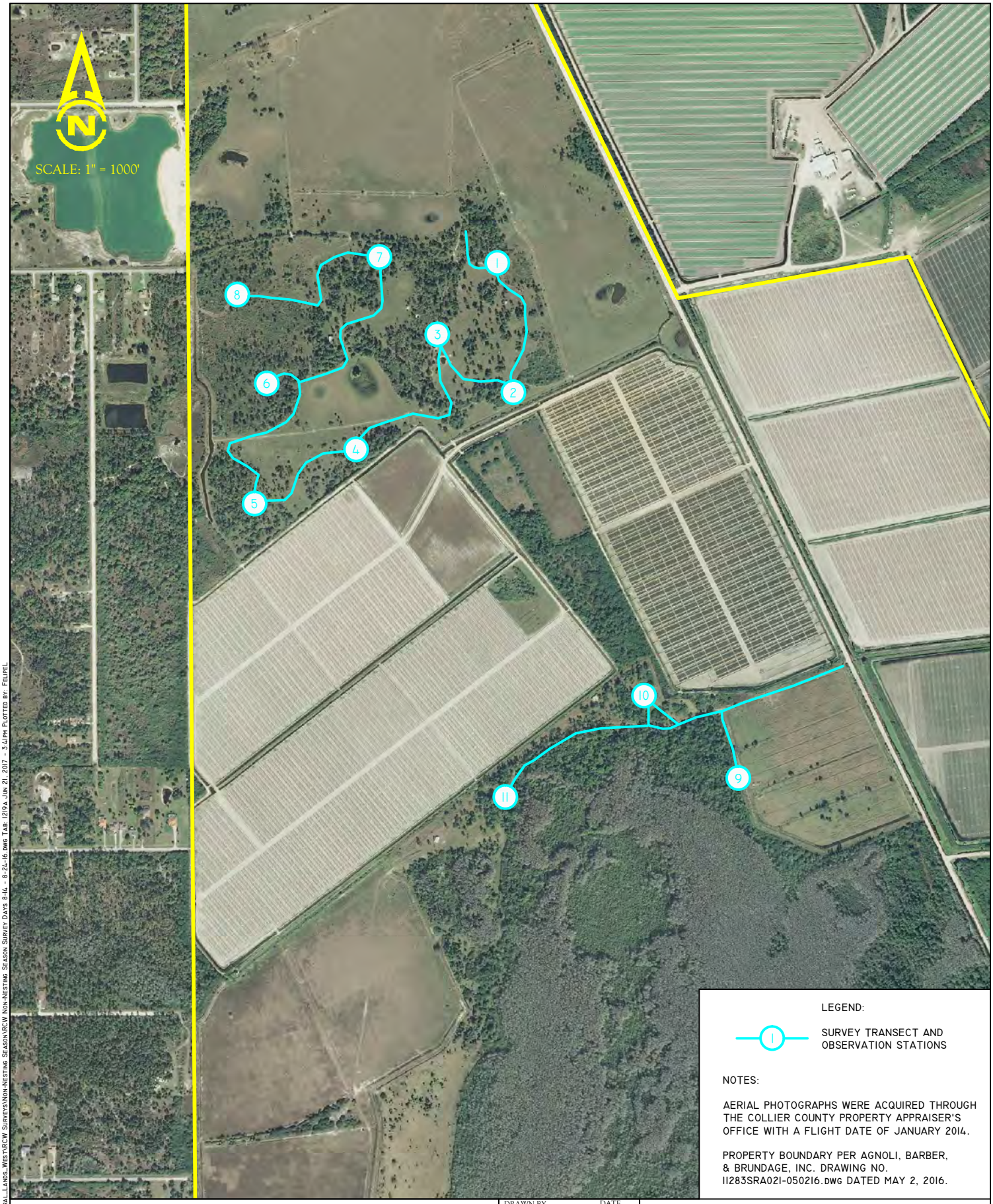
RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 18, 2014

DRAWN BY	DATE
D.B.	1/2/14
REVIEWED BY	DATE
K.C.P.	1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 1286 Jun 21, 2017 - 3:41pm Plotted By: Felipel



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA02I-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

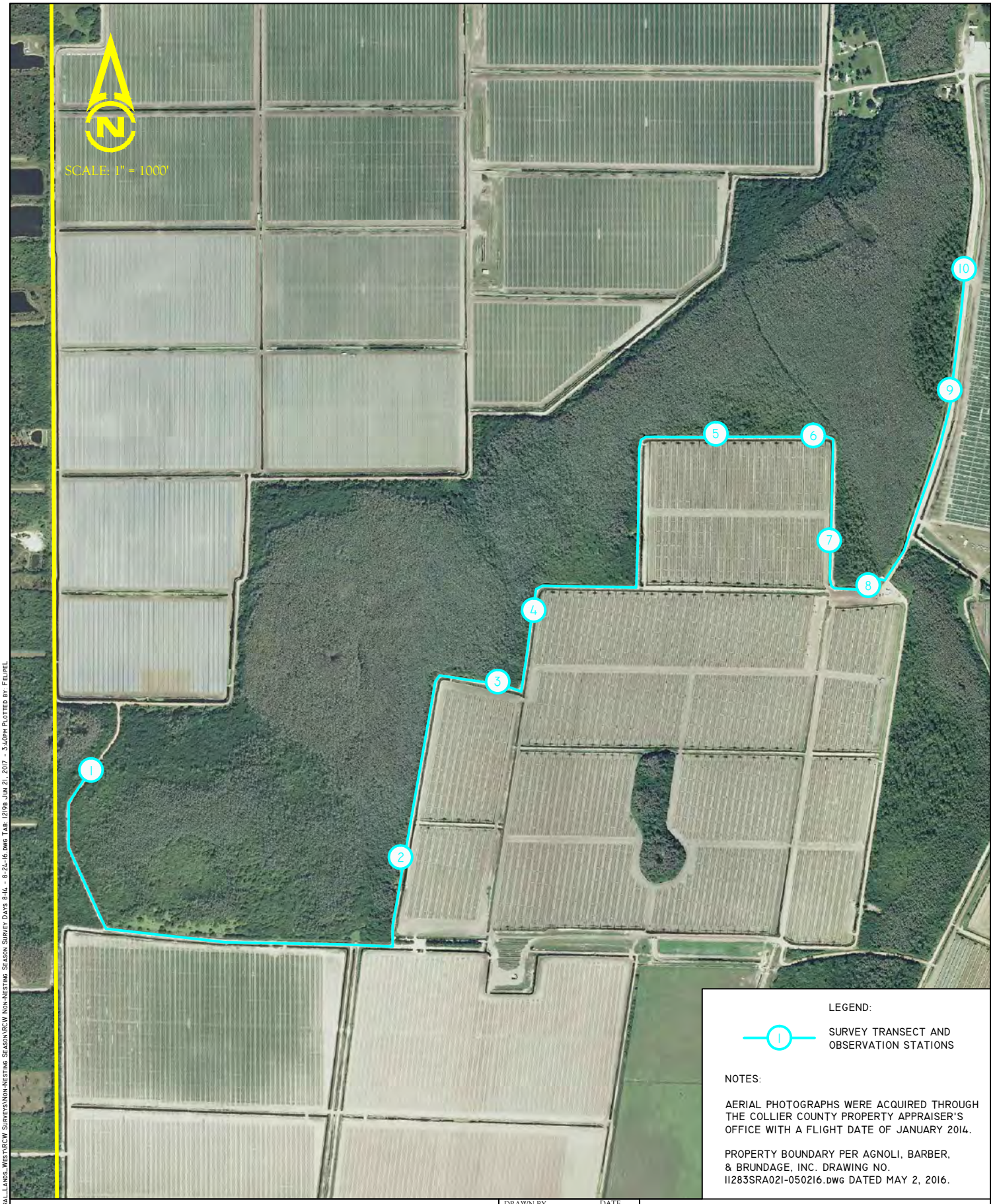
RURAL LANDS WEST - SURVEY AREA "A"

DATE: DECEMBER 19, 2014

DRAWN BY	DATE
D.B.	1/2/14
REVIEWED BY	DATE
K.C.P.	1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\48\100_RURAL_LANDS_WEST\RCW SURVEYS\NON-NESTING SEASON\RCW NON-NESTING SEASON SURVEY DAYS 8-14 - 8-24-16.DWG TAB: I219A JUN 21, 2017 - 3:41PM PLOTTED BY: FELIPEL



LEGEND:

1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

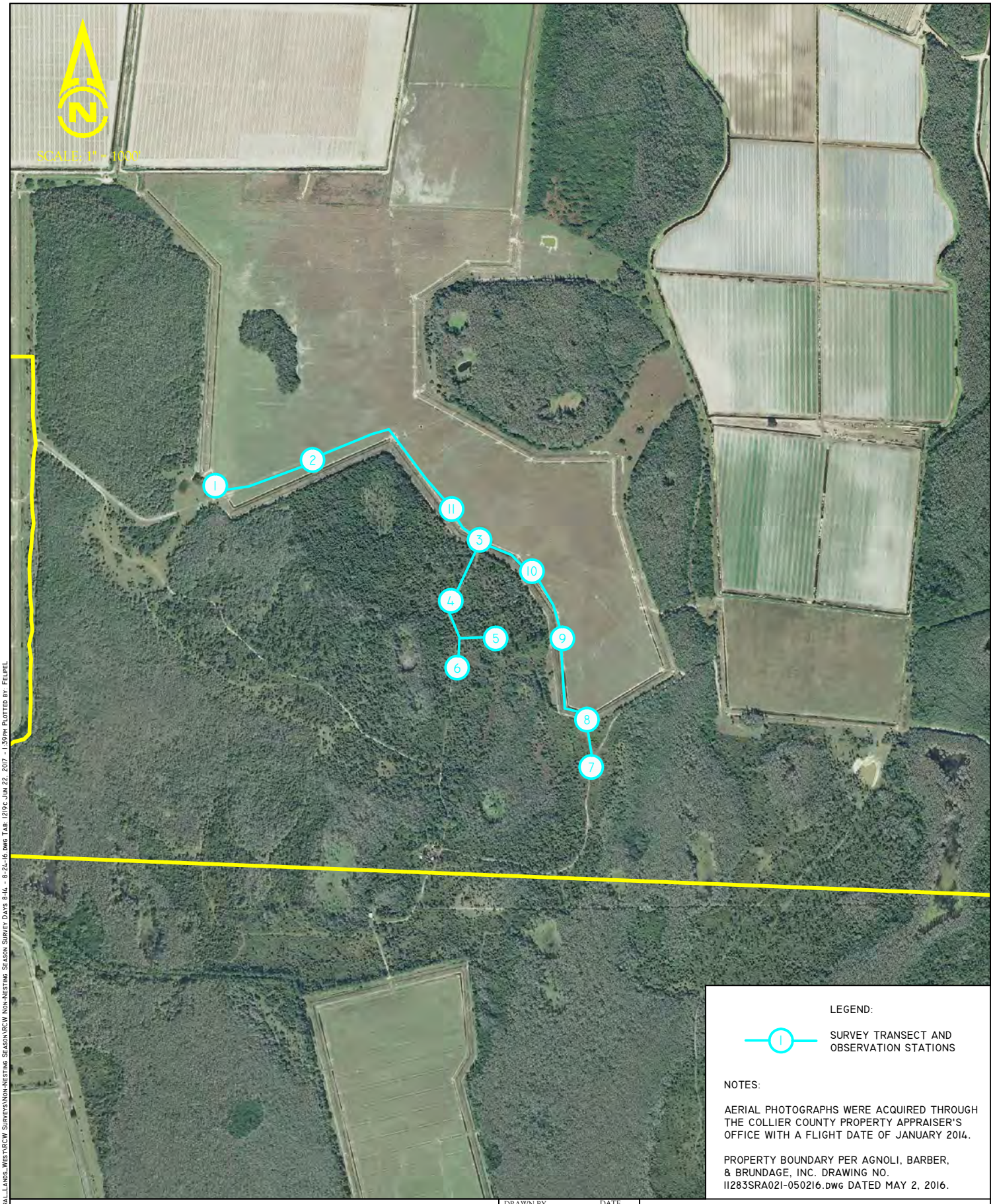
PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY
RURAL LANDS WEST - SURVEY AREA "B"
DATE: DECEMBER 19, 2014

DRAWN BY	DATE
D.B.	1/2/14
REVIEWED BY	DATE
K.C.P.	1/2/14
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 1209b Jan 21, 2017 - 3:40pm Plotted by: Felipe



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1 SURVEY TRANSECT AND OBSERVATION STATIONS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 11283SRA021-050216.DWG DATED MAY 2, 2016.

RED-COCKADED WOODPECKER NON-NESTING SEASON FORAGING SURVEY

RURAL LANDS WEST - SURVEY AREA "C"

DATE: DECEMBER 19, 2014

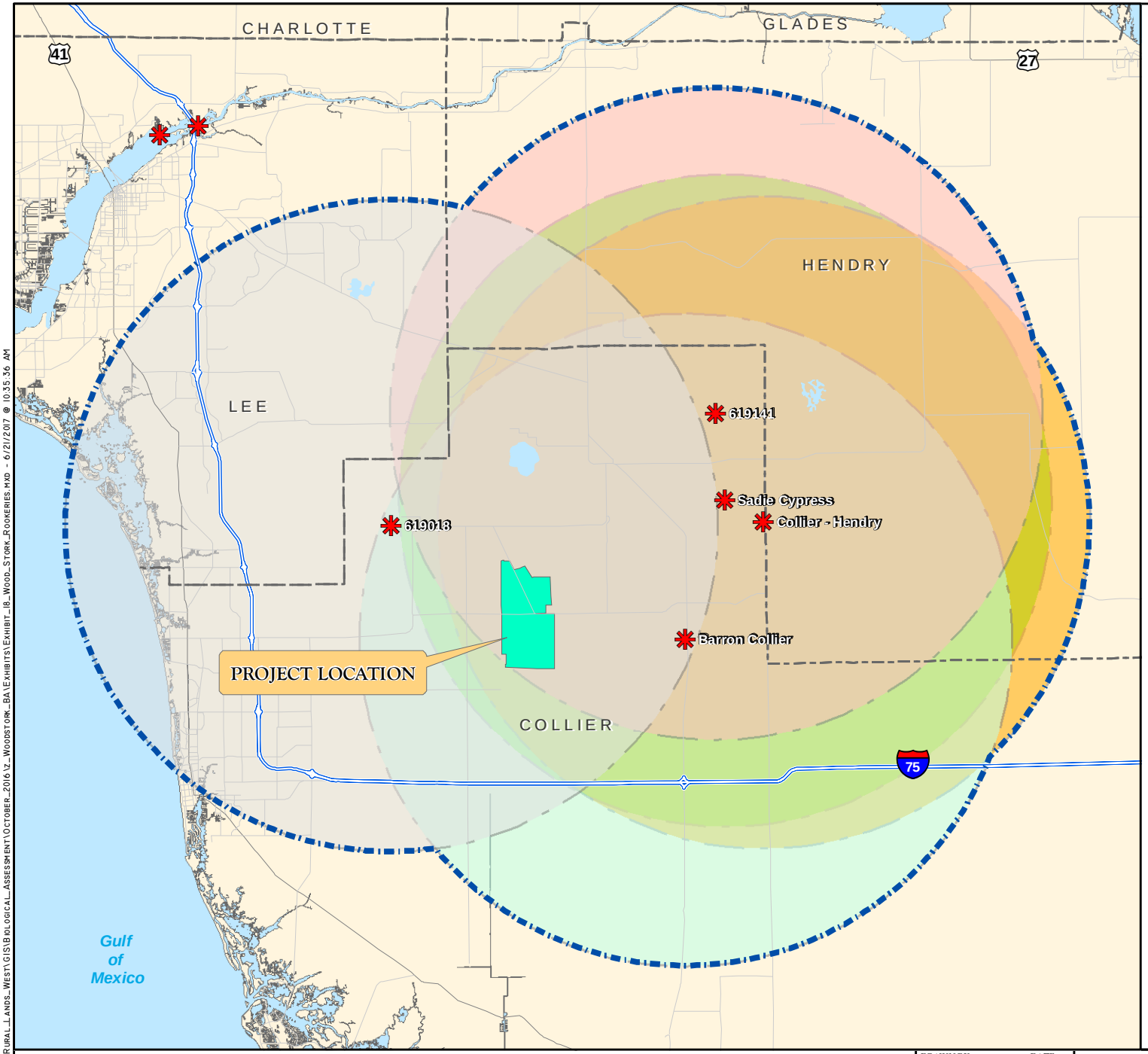
DRAWN BY	D.B.	DATE	1/2/14
REVIEWED BY	K.C.P.	DATE	1/2/14
REVISED		DATE	

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

J:\2005\05cpm\481100_Rural_Lands_West\RCW Surveys\Non-Nesting Season\RCW Non-Nesting Season Survey Days 8-14 - 8-24-16.dwg Tab: 1209c Jan 22, 2017 - 1:39pm Plotted by: Felipel

EXHIBIT 18

WOOD STORK NESTING COLONIES AND 18.6 MILE CORE FORAGING AREAS (WOOD STORK ACTION AREA)



LEGEND

- Rural Lands West
- Wood Stork Nesting Colonies
- Wood Stork Action Area

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

N
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Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

WOOD STORK NESTING COLONIES WERE ACQUIRED FROM THE FWCC JULY 2016 AND ARE CURRENT TO 2014.

J:\2005\05cen\481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016\Z_Woodstork_BA\Exhibits\Exhibit_18_Wood_Stork_Rookeries.mxd - 6/21/2017 @ 10:35:36 AM

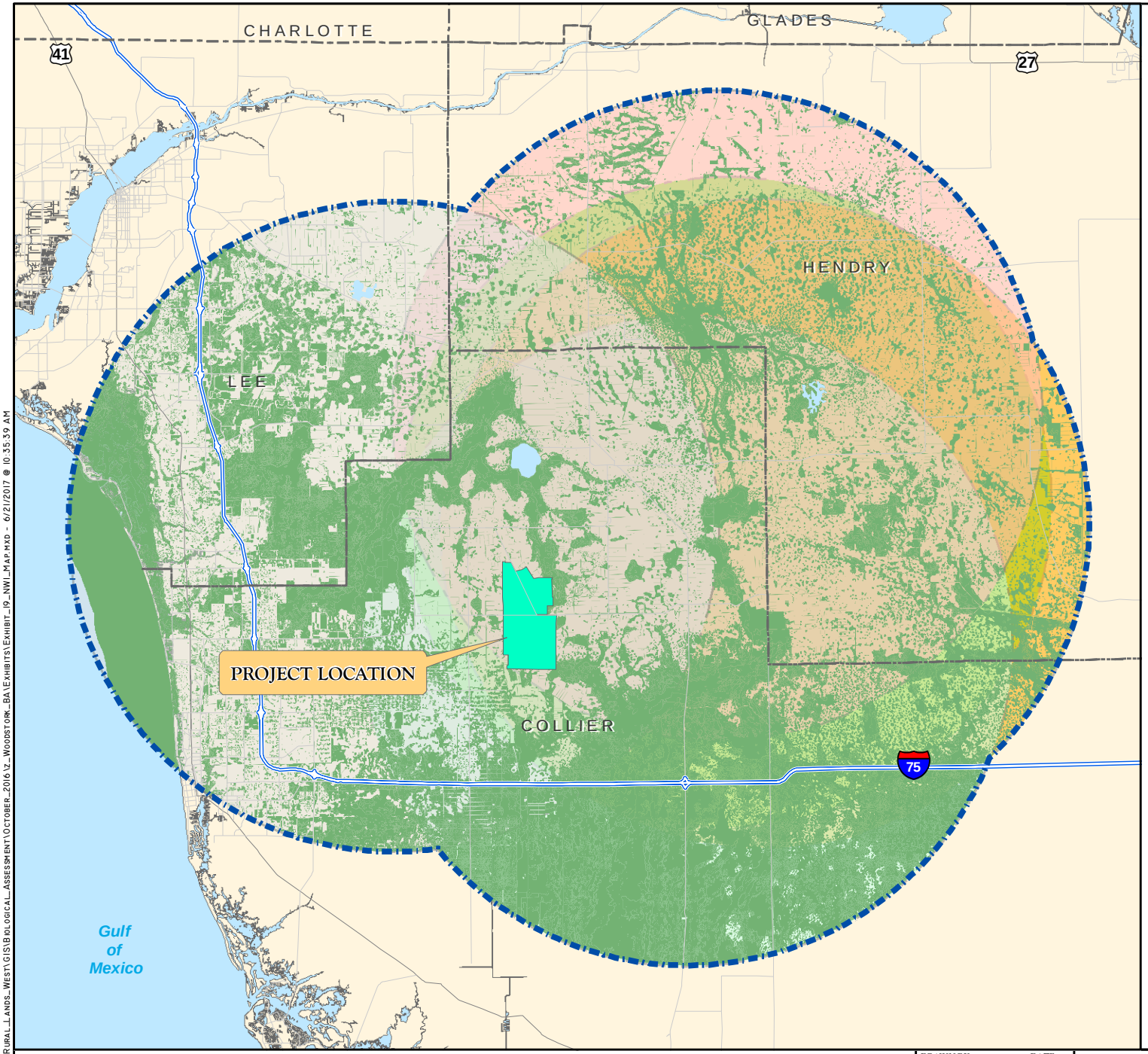
EXHIBIT 18. WOOD STORK NESTING COLONIES AND 18.6 MILE CORE FORAGING AREAS (WOOD STORK ACTION AREA) RURAL LANDS WEST

DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

EXHIBIT 19

NWI MAPPING WITHIN WOOD STORK ACTION AREA



LEGEND

- Rural Lands West
- Wood Stork Action Area
- National Wetlands Inventory

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

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Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

NATIONAL WETLANDS INVENTORY WAS ACQUIRED FROM THE USFWS WEBSITE HTTP://WWW.FWS.GOV/GIS/DATA/NATIONAL/INDEX.HTML JULY 2016.

J:\2005\05CEN\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016 VZ_WOODSTORK_BA\EXHIBITS\EXHIBIT_19_NWI_MAP.MXD - 6/21/2017 @ 10:35:39 AM

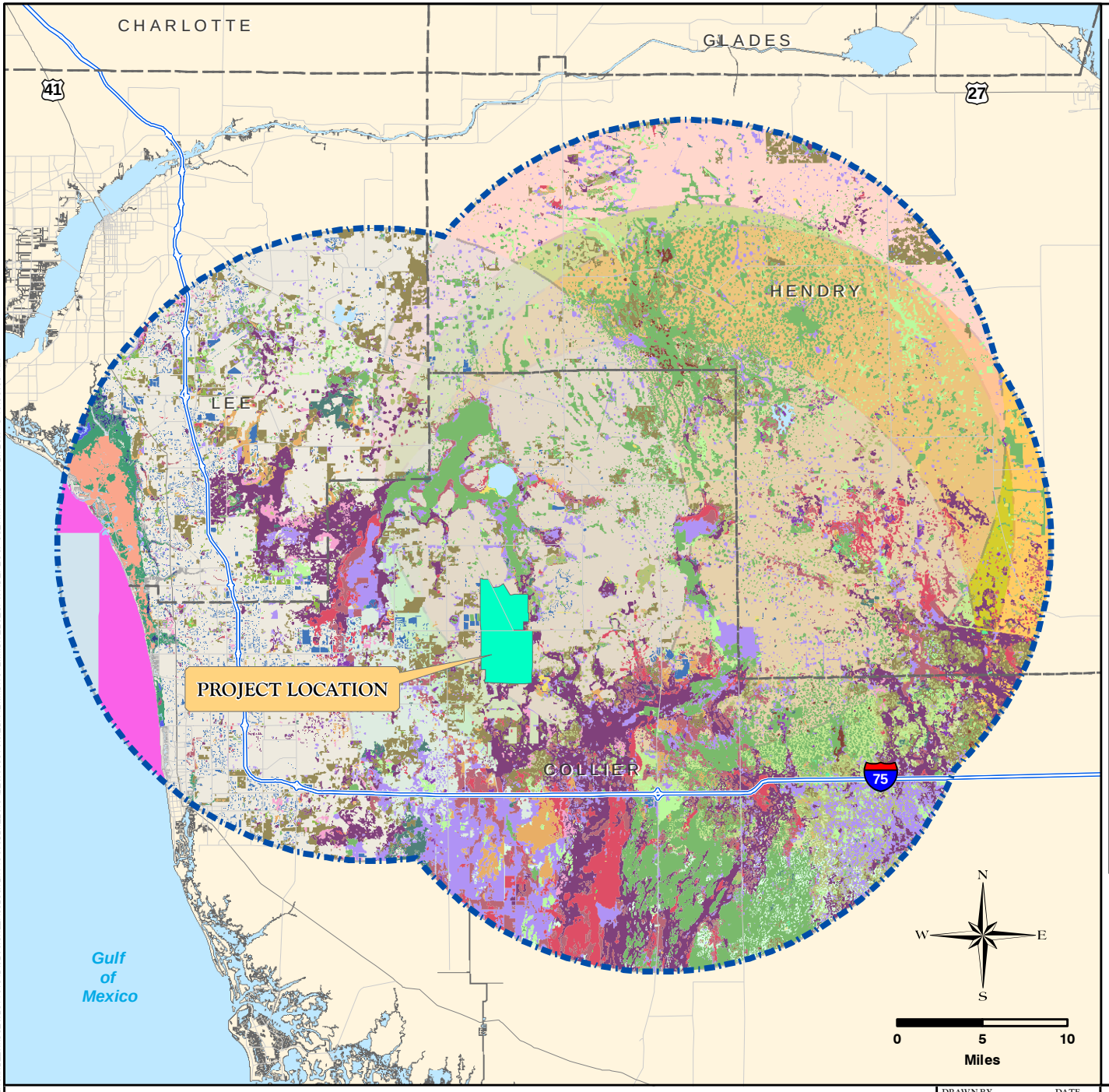
EXHIBIT 19. NWI MAPPING WITHIN WOOD STORK ACTION AREA
RURAL LANDS WEST

DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

EXHIBIT 20

SFWMD FLUCFCS WITHIN WOOD STORK ACTION AREA



LEGEND

- Rural Lands West
- Wood Stork Action Area

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

SFWMD FLUCFCS

- 411, Pine Flatwoods
- 520, Lakes
- 530, Reservoirs
- 541, Embayments Opening Directly to Gulf or Ocean
- 542, Embayments Not Opening
- 543, Saltwater Ponds
- 572, Gulf of Mexico
- 611, Bay Swamps
- 612, Mangrove Swamps
- 617, Mixed Wetland Hardwoods
- 618, Cabbage Palm Wetland
- 619, Wet Melaleuca
- 620, Wetland Coniferous Forest
- 621, Cypress
- 624, Cypress / Pine / Cabbage Palm
- 626, Pine Savannah
- 630, Wetland Forested Mixed
- 641, Freshwater Marshes / Graminoid Prairie-Marsh
- 642, Saltwater Marshes / Halophytic Herbaceous Prairie
- 643, Wet Prairies
- 644, Emergent Aquatic Vegetation
- 651, Tidal Flats
- 6111, Bayhead
- 6172, Mixed Shrubs
- 6215, Cypress / Domes / Heads
- 6216, Cypress / Mixed Hardwoods
- 6411, Freshwater Marshes / Sawgrass

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

SFWMD FLUCFCS (VERSION 1.1) WAS ACQUIRED FROM THE SFWMD WEBSITE (HTTP://MY.SFWMD.GOV/GISAPPS/SFWMDXWEBDC/DATAVIEW.ASP?QUERY=UNQ_ID=1813) SEPTEMBER 2013 AND IS CURRENT TO 2011.

EXHIBIT 20. SFWMD FLUCFCS WITHIN WOOD STORK ACTION AREA
RURAL LANDS WEST

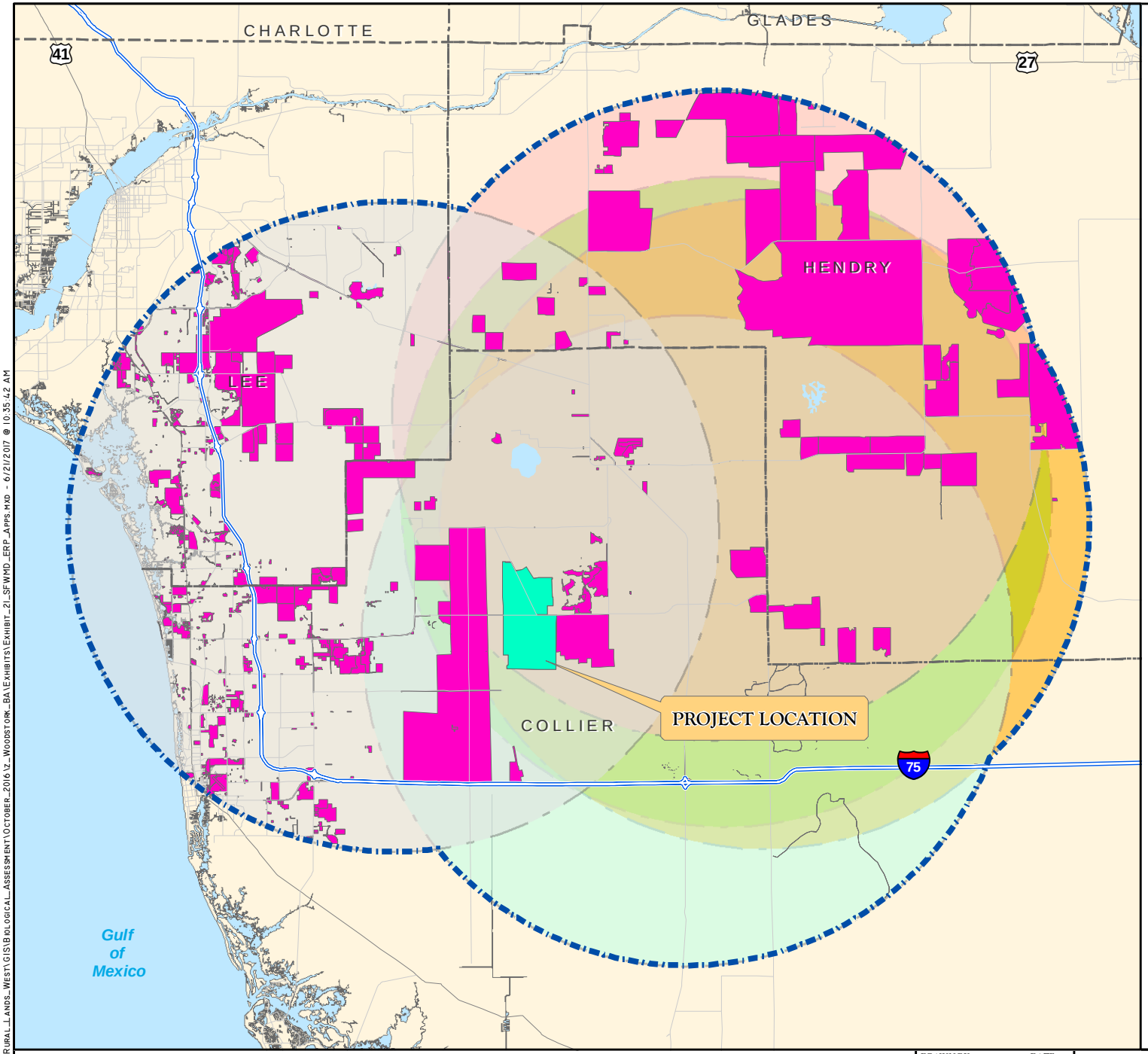
DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

J:\2005\05cen\481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016 Vz_Woodstork_BA\Exhibits\Exhibit_20_SFWMD_FLUCFCS_Map.mxd - 6/21/2017 @ 10:35:53 AM

EXHIBIT 21

PERMIT APPLICATIONS RECEIVED BY SFWMD FROM AUGUST 2013 THROUGH AUGUST 2016 WITHIN WOOD STORK ACTION AREA



LEGEND

- Rural Lands West
- Wood Stork Action Area
- SFWMD ERP Applications

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

N
W E
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Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

SFWMD ERP APPLICATIONS FROM 2013 THROUGH 2016 WERE ACQUIRED FROM THE SFWMD WEBSITE (HTTP://MY.SFWMD.GOV/GISAPPS/SFWMDXWEBDC/DATAVIEW.ASP?QUERY=UNQ_ID=1128) JULY 2016.

J:\2005\05CEN\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016 VZ_WOODSTORK_BA\EXHIBITS\EXHIBIT_21_SFWMD_ERP_APPS.MXD - 6/21/2017 @ 10:35:42 AM

EXHIBIT 21. PERMIT APPLICATIONS RECEIVED BY SFWMD FROM JULY 2013 THROUGH JULY 2016 WITHIN WOOD STORK ACTION AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

Exhibit 21A. Permit Applications Received by SFWMD from July 2013 through July 2016 within Wood Stork Action Area

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
140828-19	36-00379-S-12	10060 BAVARIA ROAD - LOTS 5 A AND 5 B BLOCK D	0.83	0.00	0.0%	COMPLETE	LEE	45	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BLACKWELL RENTAL PROPERTIES L L C	COMMERCIAL
150127-15		1075 CENTRAL AVENUE	2.59	0.00	0.0%	NO RESPONSE	COLLIER	50	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	R & B NAPLES HOLDINGS 3, L L C	RESIDENTIAL
150817-2	11-03743-P	1296 KERI ISLAND RD	4.92	3.62	73.6%	COMPLETE	COLLIER	48	27	32	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		AGRICULTURAL
150514-14		1600 INDUSTRIAL CENTER	3.02	0.00	0.0%	WITHDRAWN	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	GERMAIN REAL ESTATE COMPANY L L C	INDUSTRIAL
130723-8		17800 JAYNE COURT	5.67	2.07	36.5%	WITHDRAWN	LEE	45	26	13	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		AGRICULTURAL
150512-18	26-00003-S-05	2 X 6 SUGAR CANE	4715.07	434.72	9.2%	COMPLETE	HENDRY	44	31	1-3,10	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
160421-8		25401 TROPIC ACRES DRIVE	8.83	8.72	98.8%	NO RESPONSE	LEE	47	25	23	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	G S J H L L C	AGRICULTURAL
150805-22	11-01543-P-03	2575 NORTHBROOKE	1.23	0.00	0.0%	COMPLETE	COLLIER	48	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	2575 NORTHBROOKE L L C	COMMERCIAL
160711-10	11-03385-P	3480 PINE RIDGE ROAD	13.71	13.18	96.1%	INITIAL REVIEW	COLLIER	49	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	NAPLES ONE L L C	COMMERCIAL
140722-2	11-00212-S-136	3706 PROGRESS AVE	1.13	0.00	0.0%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	3706 PROGRESS, L L C	INDUSTRIAL
151130-5	11-01638-P	39 ACRE PARCEL - BASINS D A 2 & D A 3 MODIFICATION	12.13	8.28	68.3%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CREEKSIDE EAST INC	COMMERCIAL
160307-6	11-00212-S-123	4500 EXCHANGE BLVD	6.74	0.00	0.0%	COMPLETE	COLLIER	29	45	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WASTE MANAGEMENT INC OF FLORIDA	RESIDENTIAL
150304-6	11-00218-S-04	720 COMMONS BUILDING	2.52	0.00	0.0%	COMPLETE	COLLIER	49	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	720 COMMONS L L C	RESIDENTIAL
150407-5	36-00678-S-41	7-ELEVEN	1.39	0.00	0.0%	COMPLETE	LEE	45	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	7-ELEVEN INC	INSTITUTIONAL
141013-25	11-01543-P-16	7-ELEVEN 32794	1.51	0.00	0.0%	COMPLETE	COLLIER	49	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	7-ELEVEN INC	COMMERCIAL
140121-4	11-00364-S-06	7-ELEVEN NO. 34816	1.72	0.00	0.0%	COMPLETE	COLLIER	49	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	7-ELEVEN INC	COMMERCIAL
150309-10	36-03084-P-04	7-ELEVEN PELICAN LANDING	1.06	0.00	0.0%	COMPLETE	LEE	47	25	16	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	7-ELEVEN INC	INDUSTRIAL
140627-22	11-00371-S-27	7-ELEVEN STORE 34856	1.25	0.00	0.0%	COMPLETE	COLLIER	49	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	7-ELEVEN INC	RESIDENTIAL
140723-7	11-00259-S	800 F L P IMPROVEMENTS	3.69	0.00	0.0%	WITHDRAWN	LEE	49	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	F L P 800 L L C	COMMERCIAL
131206-10	36-08139-P	82 PLAZA	3.88	0.00	0.0%	COMPLETE	LEE	45	27	18	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	82 PLAZA L L C	COMMERCIAL
150817-13	11-00042-S	858 COLLIER NORTH	2027.25	139.79	6.9%	COMPLETE	COLLIER	48	30	1-2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	TAMIAMI CITRUS L L C	AGRICULTURAL
151203-5	11-00042-S	858 COLLIER NORTH	2027.25	139.79	6.9%	COMPLETE	COLLIER	47	30	35,36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	TAMIAMI CITRUS L L C	AGRICULTURAL
150817-17	11-00361-S	858 COLLIER SOUTH	613.43	155.87	25.4%	UNDER REVIEW	COLLIER	48	30	13,14	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TAMIAMI CITRUS L L C	AGRICULTURAL
131021-11	36-00142-S-43	8TH ST SW AT GUNNERY ROAD	1.73	0.00	0.0%	COMPLETE	LEE	44	26	33	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150318-3	36-00839-S-17	A C I - LOT 35	135.69	4.33	3.2%	COMPLETE	LEE	45	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	R E A C T PROPERTIES L L C	COMMERCIAL
150316-12	26-00503-S-03	A G BASIN 20	1331.53	175.60	13.2%	COMPLETE	HENDRY	43	31	19,20,29,32	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
150316-7	26-00617-S	A G BASINS 12 AND 14-18	6526.72	591.41	9.1%	COMPLETE	HENDRY	43	30	21-29,35,36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
141205-13	11-02336-P	A M MODIFICATION TO BASINS UN 1, UN 4, UN 6, AND IR 5	167.03	27.18	16.3%	COMPLETE	COLLIER	48	29	5-6	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	AVE MARIA DEVELOPMENT, L L L P	RESIDENTIAL
160419-10		ADDIES CORNER	18.56	18.56	100.0%	NO RESPONSE	COLLIER	48	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND NEW	NEW	CREEKSIDE WEST INC	RESIDENTIAL
160628-24		ADDIES CORNER - SOIL BORINGS	23.14	23.14	100.0%	INITIAL REVIEW	COLLIER	48	26	22	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	CREEKSIDE WEST INC	OTHER
160215-22	36-00290-S-03	AFFORDABLE TIRE AT GREYHOUND SQUARE (A K A LEXTECH)	0.84	0.76	91.3%	COMPLETE	LEE	48	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	L X T K L L C	COMMERCIAL
140707-3	11-00360-S-87	AGGREGATE SPECIALTIES	3.74	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	AGGREGATE SPECIALTIES INC	INDUSTRIAL
150414-5	26-01211-P	AGRICULTURAL ROAD	3.74	0.27	7.2%	COMPLETE	HENDRY	47	32	22, 23, 15, 14, 10,11,3 AND 2	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LITTLE RANCH I I L L C	AGRICULTURAL
150724-10	36-00379-S-17	AIRBORNE EXPRESS - LOT 2 BLOCK A	1.89	0.00	0.0%	COMPLETE	LEE	45	25	14,15	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SARAFIS L L C	INDUSTRIAL
160415-18	36-08108-P	AIRPORT HAUL ROAD REALIGNMENT	14.24	13.61	95.6%	NO RESPONSE	LEE	46	26	6 and 7	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
131031-18	36-05427-P-02	AIRPORT HAUL ROAD SUBSTATION SITE	231.39	68.71	29.7%	COMPLETE	LEE	46	25	1,6	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	FLORIDA POWER AND LIGHT COMPANY INC	AIRPORT RELATED FACILITIES
160226-13	11-00115-S	AIRPORT-PULLING ROAD NORTH IMPROVEMENTS	23.45	0.45	1.9%	UNDER REVIEW	COLLIER	48	25	35, 36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY GOVERNMENT	HIGHWAY
160519-1	36-00605-S-02	AJAX PAVING - RICKENBACKER (LOT 11)	4.21	0.46	11.0%	COMPLETE	LEE	45	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AJAX PAVING INDUSTRIES OF FLORIDA L L C	INDUSTRIAL
140310-6	36-00605-S-02	AJAX PAVING INDUSTRIES OF FLORIDA	4.16	0.36	8.6%	COMPLETE	LEE	45	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	AJAX PAVING INDUSTRIES OF FLORIDA L L C	INDUSTRIAL
151119-15	36-03946-P	ALBERTSONS IMPERIAL BONITA PLAZA ENTRANCE MODIFICATION	2.11	0.00	0.0%	COMPLETE	LEE	48	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	2014 BONITA SPRINGS LLLP	COMMERCIAL
151015-7	36-08586-P	ALICO 254 PARCEL R	11.85	0.00	0.0%	COMPLETE	LEE	46	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	16100 LEE ROAD L L C	COMMERCIAL
160303-11	36-03908-P-03	ALICO COMMERCIAL PARK LOT 27	2.62	0.15	5.8%	COMPLETE	LEE	46	25	8	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	RUFFINO HOLDINGS L L C	COMMERCIAL
160509-6	36-03908-P-03	ALICO COMMERCIAL PARK LOT 27 (REF: A# 160303-11)	2.62	0.15	5.8%	VOID	LEE	46	25	8	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	RUFFINO HOLDINGS L L C	COMMERCIAL
140416-13	36-02236-S-02	ALICO CROSSINGS (BEEF OBRADYS)	0.54	0.00	0.0%	COMPLETE	LEE	46	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	P M A T ALICO L L C	COMMERCIAL
130906-19	36-06488-P	ALICO FAMILY GOLF CENTER L L C	30.18	0.00	0.0%	COMPLETE	LEE	46	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ALICO FAMILY GOLF CENTER L L C	RECREATIONAL
140918-11	36-00909-S-06	ALICO INDUSTRIAL CENTER LOT 3 (ALICO CENTER AUTO & TIRE)	1.00	0.00	0.0%	COMPLETE	LEE	46	25	08	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	C K A GROUP L L C	INDUSTRIAL
150219-26	26-00315-S	ALICO JOG	4548.38	1387.77	30.5%	COMPLETE	HENDRY	44	30	13,24,25,36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
141112-3	36-06694-P	ALICO LAKE VILLAGES	58.60	51.39	87.7%	COMPLETE	LEE	44	26	07	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	K M C DEVELOPMENT OF S W F L	COMMERCIAL
130821-6	36-05518-P-04	ALICO LAKES VILLAGE PARCELS C, D, F, AND I	9.28	2.98	32.2%	COMPLETE	LEE	46	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SLF IV FL BONITA ALICO L L C	COMMERCIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
140929-15	36-03764-P	ALICO LAKESIDE	232.07	137.05	59.1%	COMPLETE	LEE	46	25	05	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	ALICO LAKESIDE L L C	INDUSTRIAL
141229-9	36-03764-P	ALICO LAKESIDE	331.16	196.67	59.4%	COMPLETE	LEE	46	25	5	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ALICO LAKESIDE L L C	INDUSTRIAL
150604-4	26-01213-P	ALICO N E - P E S PROJECT	35177.60	11827.43	33.6%	WAIVER	HENDRY	45	30	11-14,23-26,35-36	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ALICO INC	AGRICULTURAL
140225-24	26-00617-S	ALICO PORT LA BELLE BASIN 15-18	6526.72	591.41	9.1%	COMPLETE	HENDRY	43	30	21-29,35,36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ALICO INC	AGRICULTURAL
131115-8	26-00503-S-03	ALICO PORT LABELLE BASIN 20 MINE	368.31	95.83	26.0%	COMPLETE	HENDRY	43	31	29, 32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ALICO INC	AGRICULTURAL
141028-3	36-06537-P	ALICO ROAD BUSINESS PARK TRACTS A AND B	23.38	0.00	0.0%	COMPLETE	LEE	46	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	H M T W LAND FUND I L L C	INDUSTRIAL
140325-11	85-00140-S	ALICO ROAD IMPROVEMENTS FOR FGCU INNOVATION HUB	3.70	3.70	100.0%	COMPLETE	LEE	46	26	6	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
150603-1	36-03252-P	ALICO ROAD WIDENING	25.82	21.99	85.2%	NO RESPONSE	LEE	46	25	1, 2, 11 and 12	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	LEE COUNTY	HIGHWAY
160310-16	36-05136-P-07	ALL AMERICAN PET RESORT EXPANSION	2.56	0.00	0.0%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MANAGER OF T T R K L L C	INDUSTRIAL
130812-8	11-02912-P	ALL SEASONS IN NAPLES	9.47	0.00	0.0%	COMPLETE	COLLIER	48	25	09	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	ALL SEASONS IN NAPLES L LC	RESIDENTIAL
140313-8	11-02912-P	ALL SEASONS OF NAPLES	9.47	0.00	0.0%	COMPLETE	COLLIER	48	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ALL SEASONS IN NAPLES L L C	RESIDENTIAL
150414-6	11-02912-P	ALL SEASONS OF NAPLES	9.47	0.00	0.0%	COMPLETE	COLLIER	48	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ALL SEASONS IN NAPLES L L C	RESIDENTIAL
150915-2	11-01743-P	ALLEN HANGAR AND TAXILANE F AT NAPLES MUNICIPAL AIRPORT	3.69	0.00	0.0%	COMPLETE	COLLIER	49	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CITY OF NAPLES AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES
140916-24	11-00360-S-93	ALOHA - 1892 TRADE CENTER WAY	0.66	0.00	0.0%	COMPLETE	COLLIER	49	25	2,11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		INDUSTRIAL
131018-4	36-00678-S-38	ALTA RESOURCES PARKING LOT EXPANSION	10.12	0.11	1.1%	COMPLETE	LEE	45	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEXINGTON FORT MYERS, LP	COMMERCIAL
150513-5	36-01620-S-08	ALTAIRA AT THE COLONY	4.90	0.24	4.9%	COMPLETE	LEE	47	25	8 &17	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	W C I COMMUNITIES L L C	OTHER
160121-15	36-01620-S-08	ALTAIRA AT THE COLONY	4.90	0.24	4.9%	COMPLETE	LEE	47	17	8	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
140408-10	11-00360-S-85	AMERICAN AUTO REPAIR (FKA ACCURATE AUTO)	0.31	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	N - A PROPERTIES I N C	INDUSTRIAL
140408-2	11-00904-S	AMERICAN FARMS 5 A C	52.44	11.68	22.3%	COMPLETE	COLLIER	49	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	AMERICAN FARMS L L C	AGRICULTURAL
150605-2	11-00904-S	AMERICAN FARMS 5 A C 2015	5.49	4.85	88.3%	COMPLETE	COLLIER	49	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	AMERICAN FARMS L L C	AGRICULTURAL
130919-13	36-07808-P	AMERICAN HOUSE - BONITA SPRINGS	25.05	0.09	0.4%	COMPLETE	LEE	47	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	PEACOCK FARMS L L C	INSTITUTIONAL
140128-7	36-00288-S-15	AMERICAN HOUSE - ESTERO/COCONUT POINT	14.24	3.88	27.3%	COMPLETE	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COCONUT LIVING L L C	RESIDENTIAL
140926-1	36-07808-P-02	AMERICAN HOUSE BONITA SPRINGS PH I I I	4.48	0.00	0.0%	COMPLETE	LEE	47	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PEACOCK FARMS L L C	RESIDENTIAL
151001-19	36-07808-P-02	AMERICAN HOUSE- BONITA SPRINGS PH I I I	4.48	0.00	0.0%	COMPLETE	LEE	47	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	A H BONITA SPRINGS I I I L L C	RESIDENTIAL
141007-4	11-02748-P	AMERIMED CENTER	18.82	0.57	3.0%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND NEW	NEW	AMERISITE L L C	ROADWAY
160331-6	36-07247-P	ANGLERS PARADISE	28.16	12.17	43.2%	NO RESPONSE	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ANGLERS PARADISE OF BONITA SPRINGS	RESIDENTIAL
151005-17	11-02336-P-09	ANTHEM PARKWAY & MAPLE RIDGE PHASES 4 & 5 (BASIN PS1-SOUTH)	327.49	29.80	9.1%	COMPLETE	COLLIER	48	29	4, 5, 8 & 9	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	C C AVE MARIA, L L C	RESIDENTIAL
131113-13	11-00360-S-58	AQUATERRA	2.23	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	AQUA TERRA LLC	OTHER
151102-19	11-00658-S	ARBOR TRACE	41.73	20.13	48.2%	COMPLETE	COLLIER	48	26	8	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TOWER POINTE AT ARBOR TRACE CONDOMINIUM ASSOCIATION INC	RESIDENTIAL
160205-5	36-04853-P-06	ARBORWOOD AMENITY CENTER	9.03	0.00	0.0%	COMPLETE	LEE	45	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	W C I COMMUNITIES L L C	RECREATIONAL
141215-18	36-04853-P-06	ARBORWOOD PRESERVE- BASIN B3	256.76	20.72	8.1%	COMPLETE	LEE	45	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	ARBORWOOD C D D	RESIDENTIAL
140515-2	36-05198-P-03	ARBYS ALICO	1.25	0.00	0.0%	COMPLETE	LEE	46	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	CARISCH BROTHERS LP	COMMERCIAL
150804-17	36-01767-S	ARGUMOSA	0.34	0.00	0.0%	COMPLETE	LEE	46	24	13	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		RECREATIONAL
160205-18	36-04292-P	ARMSTRONG RIP RAP ON IMPERIAL	0.82	0.00	0.0%	COMPLETE	LEE	47	25	34	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		RESIDENTIAL
141103-16	36-07283-P	ARROYAL PLACE	1.04	0.58	56.4%	COMPLETE	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD		RESIDENTIAL
131120-4	11-02336-P-06	ARTHREX AT AVE MARIA FINISHING FACILITY	14.86	0.00	0.0%	COMPLETE	COLLIER	48	29	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVE MARIA DEVELOPMENT, L L L P	COMMERCIAL
150930-4	11-02336-P-06	ARTHREX BUILDING EXPANSION	50.91	0.00	0.0%	COMPLETE	COLLIER	48	29	17	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	R E S COLLIER HOLDINGS L L C	COMMERCIAL
160204-14	11-01553-P-02	ARTHREX POLARIS CENTER	5.17	0.32	6.3%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	R E S FLORIDA 1265 HOLDINGS L L C	COMMERCIAL
150514-1	36-00317-S-02	ASKAR RETAIL CENTER	0.98	0.00	0.0%	COMPLETE	LEE	48	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	28245 TAMIAMI L L C	COMMERCIAL
150909-1	36-00317-S-02	ASKAR RETAIL CENTER	0.98	0.00	0.0%	COMPLETE	LEE	48	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	28245 TAMIAMI , L L C	COMMERCIAL
130716-17	11-00427-S	AUDUBON COUNTRY CLUB	271.38	55.09	20.3%	COMPLETE	COLLIER	48	25	9	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	AUDUBON COUNTRY CLUB ASSOCIATION INC	RECREATIONAL
131014-7	11-00427-S	AUDUBON COUNTRY CLUB - GUARD HOUSE	1.07	0.07	6.3%	COMPLETE	COLLIER	48	25	8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AUDUBON COUNTRY CLUB FOUNDATION INC	RECREATIONAL
160428-18	11-00427-S-02	AUDUBON COUNTRY CLUB UNIT THREE	6.42	3.08	48.0%	COMPLETE	COLLIER	48	25	8	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	AUDUBON ENTERPRISES L L C	GOLF COURSE DEVELOPMENT
150909-8	11-02268-P-09	AUTOZONE AT MISSION HILLS SHOPPING CENTER (PARCEL 8)	1.49	0.00	0.0%	COMPLETE	COLLIER	48	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	AUTOZONE STORES, L L C	COMMERCIAL
131010-11	36-00145-S	AUTOZONE STORE 6311	0.53	0.00	0.0%	COMPLETE	LEE	46	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SAN CARLOS PLAZA, LTD	COMMERCIAL
140813-15	36-05142-P-06	AUTUMN LEAVES OF ESTERO	3.22	0.00	0.0%	COMPLETE	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	TULIP ASSOCIATES L L C	COMMERCIAL
141113-7	36-05142-P-06	AUTUMN LEAVES OF ESTERO	3.22	0.00	0.0%	COMPLETE	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	TULIP ASSOCIATES L L C	COMMERCIAL
150129-15	36-05142-P-06	AUTUMN LEAVES OF ESTERO	6.14	0.00	0.0%	COMPLETE	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	TULIP ASSOCIATES L L C	COMMERCIAL
150727-27	36-05142-P-06	AUTUMN LEAVES OF ESTERO	6.14	0.00	0.0%	COMPLETE	LEE	47	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	TULIP ASSOCIATES L L C	COMMERCIAL
160713-6	36-05142-P-06	AUTUMN LEAVES OF ESTERO	3.48	0.00	0.0%	INITIAL REVIEW	LEE	47	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ESTERO MEMORY CARE L L C	COMMERCIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150713-2	11-01474-P	AUTUMN WOODS	242.50	50.50	20.8%	COMPLETE	COLLIER	49	25	3,10	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AUTUMN WOODS COMMUNITY ASSOCIATION. INC.	RESIDENTIAL
141023-17	11-03694-P	AVALON OF NAPLES	23.42	22.28	95.1%	COMPLETE	COLLIER	50	26	8	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	COLLIER DAVIS, L L C	RESIDENTIAL
151020-4	11-02336-P-03	AVE MARIA - DEL WEBB ROAD CROSSING	1.13	0.00	0.0%	NO RESPONSE	COLLIER	48	29	8	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BARRON COLLIER PARTNERSHIP L T D AND AMULT L L C	RESIDENTIAL
150714-3	11-02336-P-08	AVE MARIA LAKE NUMBER 5C	1.74	0.00	0.0%	COMPLETE	COLLIER	48	29	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MAPLE RIDGE AT AVE MARIA HOA INC	OTHER
150702-17	11-02336-P	AVE MARIA RECLAIMED WATER SYSTEM (RWS) WETLAND	161.20	146.46	90.9%	COMPLETE	COLLIER	47	29	29	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	BARRON COLLIER PARTNERSHIPS L L L P	ENVIRONMENTAL RESTORATION
151030-10	11-02336-P	AVE MARIA UNIVERSITY - PEDESTRIAN BRIDGE AND PRAYER GARDEN	1.67	0.22	12.9%	COMPLETE	COLLIER	48	29	5	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVE MARIA UNIVERSITY INC	INSTITUTIONAL
130729-8	11-02336-P	AVE MARIA UNIVERSITY PRESS BOX	1.45	0.00	0.0%	COMPLETE	COLLIER	47	29	32	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	AVE MARIA UNIVERSITY INC	RECREATIONAL
141008-4	11-01861-P	AVENTINE AT NAPLES	40.07	21.69	54.1%	COMPLETE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	AVENTINE AT NAPLES, L L C	RESIDENTIAL
150520-7	11-01861-P	AVENTINE AT NAPLES (F K A SAN MARINO CLUB)	39.79	21.68	54.5%	COMPLETE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVENTINE AT NAPLES L L C	RESIDENTIAL
160330-2	11-01861-P	AVENTINE AT NAPLES (F K A SAN MARINO CLUB)	39.79	21.68	54.5%	WITHDRAWN	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVENTINE AT NAPLES L L C	RESIDENTIAL
140127-10	36-06211-P-03	B JS RESTAURANT - UNIVERSITY PLAZA	2.22	2.22	100.0%	COMPLETE	LEE	46	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	VAN UNIVERSITY PLAZA L L C	COMMERCIAL
160718-3	11-01521-P	B L C NAPLES / MILANO LAKES APTS	24.31	2.72	11.2%	INITIAL REVIEW	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	M L LAND L L C	PUBLIC AND INSTITUTIONAL
160405-15	36-00826-S	B S U WEST WATER RECLAMATION FACILITY - REJECT PONDS	5.70	0.00	0.0%	COMPLETE	LEE	47	25	21,22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA SPRINGS UTILITIES INC	INDUSTRIAL
140714-20	11-00339-S	BARRON COLLIER HIGH SCHOOL MAINTENANCE BUILDING	188.75	56.89	30.1%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE DISTRICT SCHOOL BOARD OF COLLIER COUNTY	PUBLIC AND INSTITUTIONAL
131104-11	11-00339-S	BARRON COLLIER HIGH SCHOOL MAINTENANCE BUILDING	186.65	57.25	30.7%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE DISTRICT SCHOOL BOARD OF COLLIER COUNTY	PUBLIC AND INSTITUTIONAL
140416-6	11-02336-P-09	BASIN PS1-SOUTH ERP MODIFICATION	246.30	20.81	8.4%	COMPLETE	COLLIER	48	29	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	C C AVE MARIA, L L C	RESIDENTIAL
140711-11	36-00611-S-02	BAY BEACH - RESIDENTIAL	71.79	5.83	8.1%	COMPLETE	LEE	47	24	3	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	ESTERO BAY IMPROVEMENT ASSOCIATION INC	RESIDENTIAL
140508-5	11-01121-S-03	BAY COLONY GOLF COURSE	3.24	3.08	95.2%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BAY COLONY GOLF CLUB	GOLF COURSE DEVELOPMENT
160614-21	11-01121-S-03	BAY COLONY GOLF COURSE	0.04	0.02	44.2%	UNDER REVIEW	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BAY COLONY GOLF CLUB INC	GOLF COURSE DEVELOPMENT
150929-2	11-00206-S	BAY FOREST	5.45	0.04	0.8%	COMPLETE	COLLIER	48	25	8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BAY FOREST HOMEOWNERS ASSOCIATION INC	RECREATIONAL
150205-1	36-03034-P-08	BAY LANDING MEMORY CARE (BAY LANDING-TRACT C)	5.57	0.54	9.7%	COMPLETE	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	PENINSULA IMPROVEMENT CORP	COMMERCIAL
131118-9	36-03034-P-05	BAY LANDINGS (TIDE - STARBUCKS BUILDING)	1.19	0.00	0.0%	COMPLETE	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	27250 BAY LANDING DRIVE L L C	COMMERCIAL
141110-3	36-01620-S	BAYSIDE IMPROVEMENT/BAY CREEK COMMUNITY DEVELOPMENT DISTRICT	780.45	260.65	33.4%	COMPLETE	LEE	47	25	7,8,9,16,17,18,21,22	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	BAYSIDE IMPROVEMENT COMMUNITY DEVELOPMENT DISTRICT	RESIDENTIAL
160208-17	36-01620-S	BAYSIDE IMPROVEMENTS	780.45	260.65	33.4%	COMPLETE	LEE	47	25	7,8,9,16,17,18,21,22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BAYSIDE IMPROVEMENT COMMUNITY DEVELOPMENT DISTRICT	RESIDENTIAL
140124-7	36-02043-S	BAYWINDS - KAYAK LAUNCH AREA AT THE COLONY	0.53	0.00	0.0%	COMPLETE	LEE	47	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150203-3	11-03522-P	BEACH HOUSE ASSISTED LIVING and MEMORY CARE OF NAPLES	11.31	10.24	90.5%	COMPLETE	COLLIER	50	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	P S L BEACH HOUSE-NAPLES L P	COMMERCIAL
140520-10	36-06665-P	BEACH STORAGE	3.50	1.10	31.5%	COMPLETE	LEE	48	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BEACH STORAGE L L C	COMMERCIAL
160610-4	11-00323-S	BEAR HAMMOCK GROVE	255.37	49.38	19.3%	COMPLETE	COLLIER	47	27	13,14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BEAR HAMMOCK GROVE L L C	AGRICULTURAL
150727-19	11-00130-S	BEARS PAW COUNTRY CLUB	230.31	31.79	13.8%	COMPLETE	COLLIER	49	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BEARS PAW COUNTRY CLUB INC	GOLF COURSE DEVELOPMENT
141103-15	36-05370-P	BELLA LUGO	4.28	3.57	83.5%	COMPLETE	LEE	48	26	4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	BAREFOOT EXPRESS, L L C	RESIDENTIAL
130801-4	11-02081-P	BENT CREEK PRESERVE	136.59	114.03	83.5%	COMPLETE	COLLIER	48	26	26	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	STANDARD PACIFIC OF SOUTH FLORIDA G P INC	RESIDENTIAL
151007-3	11-02081-P	BENT CREEK PRESERVE	146.10	123.51	84.5%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	STANDARD PACIFIC OF SOUTH FLORIDA G P INC	RESIDENTIAL
140620-19	11-00182-S	BENTLEY VILLAGE - WEST AND EAST CLUB HOUSES	26.07	1.56	6.0%	COMPLETE	COLLIER	48	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	THE RETREAT HOMEOWNERS ASSOCIATION INC	RECREATIONAL
130917-24	11-00182-S	BENTLEY VILLAGE SALES CENTER	1.17	0.04	3.6%	COMPLETE	COLLIER	48	25	29	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	THE RETREAT HOMEOWNERS ASSOCIATION, INC	RESIDENTIAL
140701-18	11-00364-S-10	BERKSHIRE COMMONS PARCEL C	1.01	0.00	0.0%	COMPLETE	COLLIER	49	26	9	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	DIXIE A WHATLEY LIVING TRUST	COMMERCIAL
140806-14	11-00364-S-11	BERKSHIRE PLACE	2.58	0.00	0.0%	COMPLETE	COLLIER	49	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BERKSHIRE EQUITY L L C	COMMERCIAL
151204-10	11-00364-S-11	BERKSHIRE PLACE	2.58	0.00	0.0%	COMPLETE	COLLIER	49	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BERKSHIRE EQUITY L L C	COMMERCIAL
160404-11	11-00364-S-11	BERKSHIRE PLACE	2.58	0.00	0.0%	NO RESPONSE	COLLIER	49	28	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BERKSHIRE EQUITY L L C	COMMERCIAL
140619-7	11-00364-S-14	BERKSHIRE RESERVES TOWNHOMES	11.42	0.00	0.0%	COMPLETE	COLLIER	49	26	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	NAPLES MULTIFAMILY D S T	RESIDENTIAL
140625-4	36-02904-S-25	BERNWOOD MARKET PLACE PHASES 1 2 AND 3	13.92	1.51	10.9%	COMPLETE	LEE	47	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BERNWOOD L L C	COMMERCIAL
140725-3	36-02904-S-25	BERNWOOD MARKET PLACE PHASES 1, 2 AND 3	12.00	1.45	12.1%	COMPLETE	LEE	47	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	BERNWOOD L L C	COMMERCIAL
130813-10	36-02706-S-04	BERNWOOD PARK OF COMMERCE - WALDROP CENTER	2.50	0.00	0.0%	COMPLETE	LEE	48	26	06	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	AUSTIN DEVELOPERS L L C	COMMERCIAL
160330-6	26-00270-S	BETHEA GROVE INTERNAL LATERAL DITCHES	164.14	12.74	7.8%	COMPLETE	HENDRY	48	31	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ALICO INC	AGRICULTURAL
160622-13	26-00002-M	BIG CYPRESS MITIGATION BANK	2167.39	434.56	20.0%	INITIAL REVIEW	HENDRY	48	31	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	EARTHMARK SOUTHWEST FLORIDA MITIGATION L L C	MITIGATION
151102-3	11-03745-P	BIZ PARK	3.80	0.00	0.0%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	S W F DEVELOPMENT L L C	INDUSTRIAL
141112-1	36-00161-S	BOBCAT GOLF COURSE RENOVATIONS	118.74	27.54	23.2%	COMPLETE	LEE	46	24	01	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE FOREST COUNTRY CLUB INC	GOLF COURSE DEVELOPMENT
130816-21	36-03145-S	BOCCI BALL COURT ADDITION	9.21	0.00	0.0%	COMPLETE	LEE	45	25	28	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	LEGENDS GOLF AND COUNTRY CLUB	OTHER
160121-3	36-07489-P	BONITA 75 C P D	20.00	0.03	0.2%	COMPLETE	LEE	47	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	BONITA 75 PARTNERS L L C	COMMERCIAL
140116-3	36-00289-S	BONITA BAY	134.26	8.17	6.1%	NO RESPONSE	LEE	47	25	19-21,28-33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA BAY COMMUNITY ASSOCIATION INC	OTHER
140530-13	36-00289-S	BONITA BAY CLUB LAKES BULKHEAD	11.65	9.64	82.8%	COMPLETE	LEE	47	25	20, 21, 28 and 29	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA BAY CLUB INC	COMMERCIAL

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150505-10	36-00289-S	BONITA BAY COMMERCIAL GATE ENTRANCE	2.95	2.25	76.3%	NO RESPONSE	LEE	47	25	28	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BONITA BAY COMMUNITY ASSOCIATION	COMMERCIAL
150416-11	36-00289-S	BONITA BAY CREEKSIDE HOLE 8	208.45	55.82	26.8%	COMPLETE	LEE	47	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA BAY CLUB INC	GOLF COURSE DEVELOPMENT
160404-7	36-00289-S	BONITA BAY LAKES PHASE 2	10.15	6.60	65.0%	COMPLETE	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA BAY COMMUNITY ASSOCIATION, INC	RESIDENTIAL
150721-19	36-02687-S	BONITA BEACH ROAD - BUS STOP B S 11	0.23	0.00	0.0%	COMPLETE	LEE	48	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY DEPARTMENT OF TRANSPORTATION	ROADWAY
160706-14	36-04234-P-04	BONITA BEACH ROAD ESTATES	325.17	19.26	5.9%	INITIAL REVIEW	LEE	48	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BONITA SPRINGS ASSOCIATES I L L L P.	RESIDENTIAL
131003-8	36-04234-P-05	BONITA BEACH ROAD GOLF CLUB R P D	502.28	38.13	7.6%	COMPLETE	LEE	48	26	01	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LENNAR HOMES L L C	RESIDENTIAL
140818-1	36-00854-S-13	BONITA DINER	1.25	0.00	0.0%	COMPLETE	LEE	48	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BONITA DINER L L C	COMMERCIAL
150805-12	36-00531-S-03	BONITA EXCHANGE	23.66	14.82	62.6%	COMPLETE	LEE	48	26	6	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	S L F I V-F L BONITA ALICO L L C	COMMERCIAL
160215-4	36-00531-S-03	BONITA EXCHANGE	25.67	15.10	58.8%	UNDER REVIEW	LEE	48	26	06	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BONITA EXCHANGE L L C	OTHER
160418-12	36-02687-P	BONITA EXCHANGE - TURN LANE	2.21	0.82	36.9%	NO RESPONSE	LEE	48	26	06	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA EXCHANGE L L C	ROADWAY
160314-21	36-06567-P	BONITA GRANDE COMMERCIAL OUTPARCELS #2 AND #3	2.46	0.00	0.0%	NO RESPONSE	LEE	47	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ISTAR FINANCIAL INC.	COMMERCIAL
160531-1	36-07686-P	BONITA ISLES	84.91	59.58	70.2%	NO RESPONSE	LEE	47	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MINTO COMMUNITIES	RESIDENTIAL
150303-3	36-04234-P-05	BONITA LANDING	104.57	43.61	41.7%	COMPLETE	LEE	48	26	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LENNAR HOMES L L C	RESIDENTIAL
150914-16	36-04234-P-05	BONITA NATIONAL	500.26	38.03	7.6%	COMPLETE	LEE	48	26	01	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LENNAR HOMES L L C	RESIDENTIAL
140214-24	36-04234-P-05	BONITA NATIONAL - FKA BONITA BEACH ROAD GOLF CLUB RPD	499.93	38.13	7.6%	COMPLETE	LEE	48	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LENNAR HOMES L L C	RESIDENTIAL
150323-6	36-04234-P-05	BONITA NATIONAL (FKA BONITA BEACH ROAD GOLF CLUB RPD)	499.93	38.13	7.6%	COMPLETE	LEE	48	26	01	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LENNAR HOMES L L C	RESIDENTIAL
140530-12	36-08369-P	BONITA SPRINGS CAR WASH	1.07	0.93	87.0%	COMPLETE	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	CARDOME L L C	COMMERCIAL
140122-6	36-04328-P	BONITA SPRINGS FIRE STATION NUMBER 4	14.41	4.13	28.7%	COMPLETE	LEE	47	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA SPRINGS FIRE CONTROL AND RESCUE DISTRICT	GOVERNMENT
150715-4	86-00026-S	BONITA SPRINGS UTILITIES ADMINISTRATION FACILITY EXPANSION	18.47	0.00	0.0%	COMPLETE	LEE	47	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA SPRINGS UTILITIES INC	INDUSTRIAL/UTILITIES
150806-12	11-00360-S-97	BONNESS INC	7.86	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	5590 SHIRLEY STREET LAND TRUST	INDUSTRIAL
141010-11	36-04853-P-05	BOTANICA SOUTH	237.67	6.26	2.6%	COMPLETE	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
150723-10	36-04853-P-05	BOTANICA SOUTH	116.39	4.88	4.2%	COMPLETE	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY HOME ASSOCIATES I I I L L P	RESIDENTIAL
151207-20	36-04853-P-05	BOTANICA SOUTH	237.67	6.26	2.6%	WITHDRAWN	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEE COUNTY HOME ASSOCIATES I I I L L P	RESIDENTIAL
140121-1	11-03477-P	BRANDON	50.82	50.63	99.6%	COMPLETE	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FULLERTON BONITA L L C	RESIDENTIAL
140514-12	11-03477-P	BRANDON	50.82	50.63	99.6%	COMPLETE	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D R HORTON INC	RESIDENTIAL
160526-13	36-02809-S	BRENDAN COVE DREDGE - MSOH INC	0.25	0.00	1.2%	NO RESPONSE	LEE	47	25	34	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	M S O H INC	RECREATIONAL
160526-12	36-02809-S	BRENDAN COVE DREDGE - PAPPAS	0.23	0.03	11.4%	NO RESPONSE	LEE	47	25	34	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		RECREATIONAL
160526-11	36-02809-S	BRENDAN COVE DREDGE - RANKIN	0.25	0.00	0.6%	NO RESPONSE	LEE	47	25	34	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		RECREATIONAL
160526-9	36-02809-S	BRENDAN COVE DREDGE - REINERT	0.26	0.00	0.0%	NO RESPONSE	LEE	47	25	34	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		RECREATIONAL
160526-10	36-02809-S	BRENDAN COVE DREDGE - WHITE	0.20	0.01	6.8%	NO RESPONSE	LEE	47	25	34	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		RECREATIONAL
141223-9	11-03648-P	BRIDGE REHABILITATION TO CR 858 BRIDGE OVER OBIE CANAL	0.04	0.00	0.0%	COMPLETE	COLLIER	47	30	13	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140224-7	11-01434-P	BRIDGE REPAIR & SAFETY IMPROVEMENTS FOR 5 BRIDGES ON C R	0.34	0.29	85.6%	COMPLETE	COLLIER	47	29	1, 2, 3,	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150323-7	36-04853-P-02	BRIDGETOWN	6.10	0.08	1.4%	COMPLETE	LEE	45	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
140605-14	36-04853-P-02	BRIDGETOWN AT THE PLANTATION RE-USE LAKE	1.83	0.00	0.0%	COMPLETE	LEE	45	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
140210-5	36-04853-P	BRIDGETOWN PARCEL B-13	28.95	0.00	0.0%	COMPLETE	LEE	45	25	11,14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
131031-16	36-04853-P	BRIDGETOWN PARCEL B5	14.30	0.02	0.1%	COMPLETE	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
130916-16	36-04853-P	BRIDGETOWN PARCELS B-12 AND B-19	23.53	0.03	0.1%	COMPLETE	LEE	45	25	11 and 12	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	PULTE GROUP CENTEX HOMES	RESIDENTIAL
140801-18	36-02951-S-02	BROOKS PETROLEUM	1.32	0.00	0.0%	COMPLETE	LEE	47	25	28	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LOVES PETROLEUM INC	COMMERCIAL
140321-21	11-02801-P	BROOKS VILLAGE	22.74	0.00	0.0%	COMPLETE	COLLIER	49	26	15	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	P X BROOKS VILLAGE L P	COMMERCIAL
160519-12	11-02801-P-02	BROOKS VILLAGE - MEDEXPRESS	1.06	0.00	0.0%	NO RESPONSE	COLLIER	49	26	15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	M E C U GOLDEN GATE L L C	COMMERCIAL
151201-6	11-03771-P	BUCKLEY PARCEL	22.73	0.00	0.0%	COMPLETE	COLLIER	49	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	PULTE HOME CORPORATION	RESIDENTIAL
130904-14	11-02364-P-02	BUCKS RUN	8.00	0.49	6.1%	COMPLETE	COLLIER	48	26	35	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	BUCKS RUN DEVELOPERS LLC	RESIDENTIAL
140409-8	11-00360-S-71	BUETE PROJECT	1.20	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	JOHN M BUETE TRUST	INDUSTRIAL
151123-3	11-01662-P-24	C & M ASPHALT PAVING CORPORATION	0.96	0.12	12.3%	COMPLETE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	C & M ASPHALT PAVING CORP	INDUSTRIAL
160601-11	36-00859-S-06	C AND C TIRE - FORT MYERS - LOT 7	0.83	0.00	0.0%	NO RESPONSE	LEE	45	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MONRO MUFFLER BRAKE INC	COMMERCIAL
150113-8	11-03654-P	C R 951 (COLLIER BOULEVARD) FIBER RELOCATION	0.40	0.00	0.0%	COMPLETE	COLLIER	49	26	14 and 15	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	CENTURYLINK COMMUNICATIONS L L C	OTHER
151023-7	11-02234-P-07	C R-951 EXTENSION (WEATHERED STONE DRIVE - TORRE VISTA LANE)	4.58	0.02	0.4%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
141223-8	11-01839-P	CALUSA PINES	299.27	85.34	28.5%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CALUSA PINES GOLF CLUB, L L C	RESIDENTIAL
151218-4	11-01839-P	CALUSA PINES	317.65	101.91	32.1%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CALUSA PINES GOLF CLUB L L C	GOLF COURSE DEVELOPMENT
160329-15	11-01839-P	CALUSA PINES	4.91	3.84	78.1%	HOLD FOR CONC	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CALUSA PINES GOLF CLUB L L C	RESIDENTIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150618-1	36-03908-P-15	CAM COURT	2.08	0.00	0.0%	COMPLETE	LEE	46	25	08	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	13710 SIX MILE CYPRESS 201 L L C	INDUSTRIAL
130930-18	11-02234-P-05	CAMERON COMMONS RETAIL CENTER	4.86	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	CAMERON PARTNERS L L C	COMMERCIAL
150401-8	11-02234-P-05	CAMERON COMMONS UNIT 1- TRACT 5	1.05	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CAMERON PARTNERS, L L C	COMMERCIAL
151103-20	11-01761-P-03	CAMINETTO AT MEDITERRA	7.00	0.09	1.3%	COMPLETE	COLLIER	48	25	11 & 12	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	L B MEDITERRA L L C	RESIDENTIAL
130924-9	11-02665-P	CANOPY	53.65	20.73	38.6%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NEAL COMMUNITIES OF SOUTHWEST FLORIDA L L C	RESIDENTIAL
140919-18	36-08340-P	CANTERFIELD VILLAGE	19.16	18.82	98.2%	COMPLETE	LEE	46	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	CANTERFIELD OF FORT MYERS L L C	RESIDENTIAL
160217-9	36-08340-P	CANTERFIELD VILLAGE	19.16	18.80	98.1%	COMPLETE	LEE	46	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CANTERFIELD OF FORT MYERS L L C	RESIDENTIAL
140703-18	36-08167-P	CAPE HICKORY DOCKING FACILITY	1.52	0.00	0.0%	COMPLETE	LEE	47	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CAPE HICKORY HOMEOWNERS ASSN INC	RECREATIONAL
140807-26	36-08167-P	CAPE HICKORY DOCKING FACILITY	0.17	0.00	0.0%	COMPLETE	LEE	47	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CAPE HICKORY L L C	SUBMERGED LANDS
150622-11	11-01543-P-13	CARDINAL CENTER	1.12	0.00	0.0%	COMPLETE	COLLIER	48	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SAMUEL INVESTMENTS L L C	COMMERCIAL
150408-13	11-01024-S-05	CARILLON AUTO SPA CENTER - TR A	2.79	0.00	0.0%	COMPLETE	COLLIER	49	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PINE RIDGE AUTO SPA HOLDINGS L L C	COMMERCIAL
150109-20	11-01543-P-04	CARING HEARTS PEDIATRIC EXTENDED CARE CENTER	0.46	0.00	0.0%	COMPLETE	COLLIER	48	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		COMMERCIAL
140626-11	11-01821-P	CARRARA, VYNE HOUSE, AND GOLF STUDIO MODIFICATION	16.82	1.17	6.9%	COMPLETE	COLLIER	48	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	KE TALIS PARK PROPERTIES, L L C	RESIDENTIAL
160419-18	36-02809-S	CASCIO LOT RIP RAP INSTALLATION	0.29	0.01	2.5%	NO RESPONSE	LEE	47	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW		OTHER
140728-13	36-07350-P	CAYO DE ESTERO SHOPPES	3.60	3.08	85.6%	COMPLETE	LEE	46	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		COMMERCIAL
131127-9	11-01683-P	CEDAR HAMMOCK GOLF COURSE MODIFICATION	415.29	200.04	48.2%	COMPLETE	COLLIER	50	26	3	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CEDAR HAMMOCK C D D	RESIDENTIAL
140214-27	36-07747-P	CENTER FOR HOPE	46.53	0.00	0.0%	COMPLETE	LEE	45	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION)	MOD	HOPE HOSPICE AND COMMUNITY SERVICIES, INC.	INSTITUTIONAL
160325-12	36-00718-S	CENTER OF BONITA SPRINGS	30.00	1.80	6.0%	COMPLETE	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	A M C A P BONITA L L C	COMMERCIAL
160411-14	36-00718-S	CENTER OF BONITA SPRINGS CHASE BANK (REF: A#160325-12)	1.49	0.00	0.0%	VOID	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	A M C A P BONITA L L C	COMMERCIAL
140124-13	36-03568-P-05	CENTERPLACE	981.01	137.52	14.0%	COMPLETE	LEE	46	25	11,12, 13	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND CONSTRUCTION/OPERATION	MOD	ALICO WEST FUND L L C	RESIDENTIAL
160112-4	36-03568-P-05	CENTERPLACE	981.01	137.52	14.0%	COMPLETE	LEE	46	25	11, 12, 13	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	ALICO WEST FUND L L C	RESIDENTIAL
160311-6	36-03568-P-05	CENTERPLACE	981.01	137.52	14.0%	COMPLETE	LEE	46	25	11, 12, 13	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	ALICO WEST FUND L L C	RESIDENTIAL
151028-10	11-01705-P	CENTRAL AVENUE STREETSCAPE AND DRAINAGE IMPROVEMENTS	0.61	0.00	0.0%	COMPLETE	COLLIER	50	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES	ROADWAY
141203-6	11-01859-P-06	CHILIS RESTAURANT - EAST NAPLES	1.76	0.00	0.0%	COMPLETE	COLLIER	48	26	30	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	C H.N F L L L C	COMMERCIAL
140311-17	26-00721-P	CHURCH ROAD BORROW PIT	640.33	256.72	40.1%	COMPLETE	HENDRY	45	28	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	DELTA AGGRIGATE L L C	OTHER
141017-11	26-00721-P	CHURCH ROAD BORROW PIT	640.33	256.72	40.1%	COMPLETE	HENDRY	45	28	33	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND CONSTRUCTION/OPERATION	MOD	DELTA AGGREGATE L L C	MINING
151102-21	26-00721-P	CHURCH ROAD BORROW PIT - WORK SCHEDULE MODIFICATION	640.33	256.72	40.1%	NO RESPONSE	HENDRY	45	28	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	DELTA AGGREGATE L L C	COMMERCIAL
141209-4	26-00721-P	CHURCH ROAD BORROW PIT- WORK SCHEDULE MODIFICATION	650.01	257.34	39.6%	COMPLETE	HENDRY	45	28	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	DELTA AGGREGATE L L C	COMMERCIAL
140609-18	26-00224-S-02	CHURCH ROAD GROVE	2.45	2.45	100.0%	COMPLETE	HENDRY	45	28	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EAGLE CREEK SOUTHEAST L L C	AGRICULTURAL
150324-17	26-00224-S-02	CHURCH ROAD GROVE CULVERT CROSSING	0.94	0.00	0.0%	COMPLETE	HENDRY	45	28	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EAGLE CREEK SOUTHEAST L L C	AGRICULTURAL
160209-3	11-01863-P	CITY GATE BOULEVARD NORTH EXTENSION (PHASE 2)	5.74	5.74	100.0%	COMPLETE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	C G I I L L C & 850 N W N L L C	COMMERCIAL
160218-10	11-01863-P-07	CITY GATE SELF STORAGE (LOTS 10-12 OF PHASE 1)	4.33	0.00	0.0%	COMPLETE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DIVERSIFIED REALTY DEVELOPMENT C O	COMMERCIAL
151120-2	36-00288-S-29	CITY MATTRESS AT COCONUT POINT	3.37	0.00	0.0%	COMPLETE	LEE	47	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CITY MATTRESS OF FLORIDA	COMMERCIAL
140204-1	11-01859-P-03	CITY MATTRESS AT SUPER TARGET	1.56	0.00	0.0%	COMPLETE	COLLIER	48	26	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CITY MATTRESS OF FLORIDA INC	COMMERCIAL
150414-4	36-08458-P	CITY OF BONITA SPRINGS DOWNTOWN IMPROVEMENT PROJECT	7.12	0.11	1.5%	COMPLETE	LEE	47	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND NEW	NEW	CITY OF BONITA SPRINGS	ROADWAY
160712-11	36-08458-P	CITY OF BONITA SPRINGS DOWNTOWN IMPROVEMENT PROJECT	15.95	1.04	6.5%	INITIAL REVIEW	LEE	47	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF BONITA SPRINGS	ROADWAY
140918-8	11-03068-P	CITY OF NAPLES - LAKE MANOR RESTORATION PROJECT	5.85	3.62	62.0%	COMPLETE	COLLIER	49	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES	OTHER
160531-16	11-01743-P	CITY OF NAPLES AIRPORT AUTHORITY (SWALE & DITCH CLEARING)	4.33	4.01	92.7%	COMPLETE	COLLIER	0	0		ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES AIRPORT AUTHORITY ATTN: KERRY KEITH	AIRPORT RELATED FACILITIES
140630-11	11-01743-P-02	CITY OF NAPLES RECYCLE TRANSFER FACILITY	24.94	0.00	0.0%	COMPLETE	COLLIER	50	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES (ATTN: JUSTIN FREDERIKSEN)	INDUSTRIAL
160714-19	11-00065-S	CLAM PASS PARK - PARKING LOT	2.52	0.48	19.1%	INITIAL REVIEW	COLLIER	49	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	RECREATIONAL
151113-4	36-04722-P-04	CLASSIC ESTATES BY MY GARAGE	3.18	0.69	21.9%	COMPLETE	LEE	46	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	SAN CARLOS SIX ACRES L T D	COMMERCIAL
140731-1	11-00212-S-06	COASTAL BEVERAGE FACILITY EXPANSION	8.39	0.00	0.0%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COASTAL BEVERAGE, L T D	INDUSTRIAL
140703-12	11-00212-S-135	COASTAL BEVERAGE WAREHOUSE AND MAINTENANCE FACILITY	2.38	0.00	0.0%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COASTAL BEVERAGE LTD	INDUSTRIAL
140925-6	36-04978-P-02	COASTAL VILLAGE PHASE 3	23.38	23.36	99.9%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	COLICO L L C	RESIDENTIAL
130719-13	36-04978-P-02	COASTAL VILLAGES - PHASE 3	26.16	23.71	90.6%	COMPLETE	LEE	46	25	23	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	COLICO L L C	RESIDENTIAL
160523-13	36-05877-P	COCKLESHELL DRIVE SIDEWALK	1.09	0.00	0.0%	UNDER REVIEW	LEE	47	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF BONITA SPRINGS	ROADWAY
130809-11	36-00605-S-06	COCO PLUM DEVELOPMENT SELF STORAGE	3.01	0.00	0.0%	COMPLETE	LEE	45	25	24	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	STADIUM LAND L L C	COMMERCIAL
130809-8	36-00605-S-06	COCO PLUM DEVELOPMENT SELF STORAGE	3.01	0.00	0.0%	COMPLETE	LEE	45	25	24	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	STADIUM LAND L L C	COMMERCIAL
141211-6	11-01882-P	COCOHATCHEE P U D	271.89	245.64	90.3%	COMPLETE	COLLIER	48	25	16, 17	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	LODGE ABBOTT ASSOCIATED, L L C	RESIDENTIAL
150304-15	11-01882-P	COCOHATCHEE P U D	271.91	245.66	90.3%	COMPLETE	COLLIER	48	25	16,17	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LODGE/ABBOTT INVESTMENTS ASSOCIATES L L C	RESIDENTIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
160427-16	36-08425-P	COCONUT COVE	17.46	10.31	59.0%	COMPLETE	LEE	46	25	20	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	NEAL COMMUNITIES OF SOUTHWEST FLORIDA L L C	RESIDENTIAL
141112-26	36-03587-P-04	COCONUT CROSSING	14.31	3.11	21.7%	COMPLETE	LEE	47	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	H G COCONUT L L C	COMMERCIAL
150202-8	36-00288-S-15	COCONUT POINT CONTINUING CARE FACILITY	14.46	3.88	26.9%	COMPLETE	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	COCONUT POINT D E L L C	RESIDENTIAL
141103-22	36-03930-P-03	COCONUT POINT HONDA	5.69	5.35	94.0%	COMPLETE	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COCONUT POINT VENTURES L L C	COMMERCIAL
160308-19	36-03930-P-03	COCONUT POINT HONDA - ADDITIONAL PAVEMENT	5.69	5.35	94.0%	COMPLETE	LEE	47	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COCONUT POINT VENTURES L L C	COMMERCIAL
141201-2	36-03930-P-02	COCONUT POINT HONDA (REF APP 141103-22)	10.02	9.14	91.2%	VOID	LEE	47	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COCONUT POINT VENTURES L L C	COMMERCIAL
150408-14	36-03930-P-03	COCONUT POINT HONDA DRY DETENTION RELOCATION	5.69	5.33	93.7%	WITHDRAWN	LEE	47	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COCONUT POINT VENTURES L L C	COMMERCIAL
150622-12		COCONUT POINT HONDA ROW DRAINAGE MOD (REF: A# 150608-12)	5.69	5.33	93.7%	VOID	LEE	47	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FDOT	ROADWAY
151001-4	36-05142-P-09	COCONUT RETAIL CENTER	1.40	0.00	0.0%	COMPLETE	LEE	47	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BRIGHTWORKS ACQUISITIONS LLC	COMMERCIAL
130927-21	36-03587-P	COCONUT ROAD M P D	29.06	3.52	12.1%	COMPLETE	LEE	47	25	9	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD (GENERAL PERMIT EXTENSION HB503)	MOD	O B E FLORIDA C R E HOLDINGS L L C	COMMERCIAL
130927-22	36-03587-P	COCONUT ROAD M P D	29.06	3.52	12.1%	COMPLETE	LEE	47	25	9	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	O B E FLORIDA C R E HOLDINGS L L C	COMMERCIAL
140717-13	36-02988-P	COCONUT TRACE BUS STOP	3.09	0.00	0.0%	COMPLETE	LEE	47	25	4, 9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLA DEPT OF TRANSPORTATION (ATTN: BRENT SETCHELL)	ROADWAY WITHIN RESIDENTIAL
141010-18	36-05142-P-07	COCONUT TRACE RETAIL BUILDING	1.31	0.00	0.0%	COMPLETE	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	N L A U G ESTERO M A L L C	COMMERCIAL
150401-15	36-05142-P-05	COCONUT TRACE RETAIL DEVELOPMENT PHASE I I	1.53	0.00	0.0%	COMPLETE	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BERBERIAN PROPERTIES L L C	COMMERCIAL
140306-11	36-05142-P-05	COCONUT TRACE RETAIL DEVELOPMENT, PHASE I I	1.53	0.00	0.0%	COMPLETE	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	UNITED GROWTH CAPITAL MANAGEMENT, LLC	COMMERCIAL
141013-1	11-00218-S-02	COLLIER ATHLETIC CLUB	4.15	0.00	0.0%	COMPLETE	COLLIER	49	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	FIRST ASSEMBLY OF GOD OF NAPLES FLORIDA INC	COMMERCIAL
150401-6	11-02965-P	COLLIER B L V D MIXED USE COMMERCE CENTER	69.96	69.88	99.9%	COMPLETE	COLLIER	49	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	VICTORIA ESTATES, L T D	COMMERCIAL
150914-13	11-00604-S	COLLIER BOULEVARD TURN LANE IMPROVEMENTS FOR SAN MARINO	5.10	1.85	36.2%	COMPLETE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
151217-1	11-03779-P	COLLIER CHARTER SCHOOL	13.28	2.81	21.2%	COMPLETE	COLLIER	48	27	21	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	T B D LAND VENTURES L L C	INSTITUTIONAL
140702-15	11-03593-P	COLLIER COUNTY BRIDGE REPAIR - BRIDGE 030137	0.04	0.04	100.0%	COMPLETE	COLLIER	47	29	1	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140702-16	11-03594-P	COLLIER COUNTY BRIDGE REPAIRS - BRIDGES 034042 & 034044	0.11	0.11	99.4%	COMPLETE	COLLIER	48	28		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
141126-9		COLLIER COUNTY E M S STATION NO 76	3.23	1.86	57.6%	WITHDRAWN	COLLIER	49	26	4	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	PUBLIC AND INSTITUTIONAL
140916-13	11-01644-P-08	COLLIER INDUSTRIAL CENTER - LOT 11	0.96	0.17	17.3%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	NARDINI PROPERTIES L L C	COMMERCIAL
160527-19	11-00737-S	COLLIERS RESERVE	8.24	0.27	3.2%	UNDER REVIEW	COLLIER	48	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIERS RESERVE COUNTRY CLUB	GOLF COURSE DEVELOPMENT
150713-5	11-00737-S	COLLIERS RESERVE CLUBHOUSE EXPANSION	8.24	0.27	3.2%	COMPLETE	COLLIER	48	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIERS RESERVE COUNTRY CLUB	RECREATIONAL
150219-27	26-00175-S-02	COLLINS SLOUGH EAST	5841.74	1298.70	22.2%	COMPLETE	HENDRY	44	31	8,9,16,17,20	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
150220-18	26-00466-S	COLLINS SLOUGH WEST	3222.73	387.54	12.0%	COMPLETE	HENDRY	44	30	1,2,11,12	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
140507-6	36-00678-S-33	COMCAST PARKING LOT EXPANSION	5.67	0.00	0.0%	COMPLETE	LEE	45	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TEMPLE DREXEL L L C	COMMERCIAL
150417-5	11-00218-S-06	COMMONS PROFESSIONAL PARK - COMMONS V MEDICAL OFFICE	3.64	0.02	0.5%	COMPLETE	COLLIER	49	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	H T A - COMMONS V L L C	RESIDENTIAL
150310-16	11-00218-S-05	COMMONS PROFESSIONAL PARK - PHASE III	2.01	0.00	0.0%	COMPLETE	COLLIER	49	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	COMMONAGE CORPORATION	RESIDENTIAL
140205-12	11-01804-P	COMMUNITY SCHOOL OF NAPLES SHEA MAURER MEMORIAL AMPHITHEATER	77.13	4.50	5.8%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COMMUNITY SCHOOL OF NAPLES	PUBLIC AND INSTITUTIONAL
131010-3	36-04799-P-03	COMPLETE DENTISTRY OF ESTERO	1.13	0.00	0.0%	COMPLETE	LEE	46	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	PROFESSIONAL RESOURCE DEVELOPMENT INC	COMMERCIAL
130703-22	36-00478-S	CONNECTION FROM VINTAGE TRACE CIRCLE TO WAL-MART SITE	149.47	28.47	19.0%	COMPLETE	LEE	46	25	21	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	THE VINES COUNTRY CLUB	RESIDENTIAL
141209-8	11-02960-P	CONSERVANCY OF SOUTHWEST FLORIDA	19.90	0.81	4.1%	COMPLETE	COLLIER	49	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CONSERVANCY OF S W F L	OTHER
141120-11	36-04608-P	CONSTITUTION CENTER (REF: A# 030103-8)	13.85	0.00	0.0%	VOID	LEE	48	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	CONSTITUTION PLAZA CONDOMINIUM ASSOCIATION, INC.	COMMERCIAL
150508-8	11-03670-P	COPE RESERVE	14.28	14.28	100.0%	COMPLETE	COLLIER	50	26	8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HIGHLAND PROPERTIES OF LEE & COLLIER LTD	RESIDENTIAL
150216-4	36-04831-P	COPPER OAKS TOWNHOMES BUILD-OUT	3.60	0.00	0.0%	COMPLETE	LEE	47	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COPPER OAKS T V L L C	RESIDENTIAL
141107-3	36-00288-S-02	COPPERLEAF AT THE BROOKS	335.24	54.56	16.3%	COMPLETE	LEE	47	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COPPERLEAF GOLF CLUB COMMUNITY ASSOCIATION	GOLF COURSE DEVELOPMENT
150109-15	36-00288-S-02	COPPERLEAF AT THE BROOKS GOLF CLUB	5.73	0.00	0.0%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COPPERLEAF GOLF CLUB COMMUNITY ASSOCIATION	GOLF COURSE DEVELOPMENT
131022-20	36-00288-S-02	COPPERLEAF COUNTRY CLUB	17.04	8.61	50.6%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COPPERLEAF COUNTRY CLUB COMMUNITY ASSOCIATION	GOLF COURSE DEVELOPMENT
140325-5	36-00288-S-02	COPPERLEAF COUNTRY CLUB	19.33	8.61	44.6%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COPPERLEAF GOLF CLUB COMMUNITY ASSOCIATION	GOLF COURSE DEVELOPMENT
140321-2	36-00288-S-02	COPPERLEAF GOLF CLUB	5.73	0.00	0.0%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COPPERLEAF GOLF CLUB COMMUNITY ASSOCIATION	RECREATIONAL
140729-1	36-00288-S-02	COPPERLEAF GOLF CLUB	5.73	0.00	0.0%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COPPERLEAF GOLF CLUB COMMUNITY ASSOCIATION	GOLF COURSE DEVELOPMENT
140723-18	11-02336-P-09	COQUINA AT MAPLE RIDGE	292.31	30.52	10.4%	COMPLETE	COLLIER	48	29	5, 8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVE MARIA DEVELOPMENT L L L P	RESIDENTIAL
151222-9	11-02336-P-09	COQUINA AT MAPLE RIDGE	45.29	3.45	7.6%	COMPLETE	COLLIER	48	29	4, 5, 8, & 9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVE MARIA DEVELOPMENT, LLLP	RESIDENTIAL
151113-19	26-00844-P-02	CORBITT ROAD FARM	690.91	208.19	30.1%	COMPLETE	HENDRY	46	31	20,29,30	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	CORBITT ROAD IMMOKALEE L L C	AGRICULTURAL
150120-27	36-04798-P	CORKSCREW COMMERCE PARK	20.60	5.07	24.6%	COMPLETE	LEE	46	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	I - 75 CORKSCREW ROAD LAND TRUST	COMMERCIAL
141020-12		CORKSCREW CROSSING	395.01	394.35	99.8%	NO RESPONSE	LEE	46	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ARGO CORKSCREW CROSSING L L L P	RESIDENTIAL
150529-12	36-02319-S	CORKSCREW RD LEE CO COMPLETE STREETS INITIATIVE TIGER GRA	32.47	0.28	0.9%	COMPLETE	LEE	46	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
160613-11		CORKSCREW ROAD INTERSECTION IMPROVEMENTS AT WILDCAT DRIVE	11.56	0.00	0.0%	INITIAL REVIEW	COLLIER	46	28	18	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY TRANSPORTATION ENGINEERING DIVISION	HIGHWAY

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160627-4		CORKSCREW ROAD SAFETY IMPROVEMENTS	2.63	0.37	14.1%	INITIAL REVIEW	COLLIER	46	28	19	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		ROADWAY
141205-12	36-03254-P	CORKSCREW SHORES	745.01	178.84	24.0%	COMPLETE	LEE	46	26	21, 28	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CORKSCREW SHORES MASTER ASSN INC	RESIDENTIAL
150106-4	36-03254-P	CORKSCREW SHORES (F K A CORKSCREW WOODS)	722.12	168.33	23.3%	COMPLETE	LEE	46	26	21, 28	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CORKSCREW SHORES MASTER ASSN INC	RESIDENTIAL
140227-5	36-03254-P	CORKSCREW SHORES AMENITY CENTER	12.36	0.00	0.0%	COMPLETE	LEE	46	26	21,28	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CORKSCREW SHORES MASTER ASSN INC	RECREATIONAL
140828-17	36-03254-P	CORKSCREW SHORES AMENITY CENTER	26.91	0.00	0.0%	COMPLETE	LEE	46	26	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CORKSCREW SHORES MASTER ASSN INC	RECREATIONAL
140912-10	36-03186-P-06	CORKSCREW VILLAGE SELF STORAGE - LOT 6	8.47	0.00	0.0%	COMPLETE	LEE	46	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	CORKSCREW VILLAGE SELF STORAGE L L C	COMMERCIAL
140407-3	11-01739-P	CORPORATE CENTER AT VANDERBILT	2.43	0.00	0.0%	COMPLETE	COLLIER	48	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SOUTHERN HOLDINGS 3 L L C	COMMERCIAL
150121-9	11-01821-P	CORSICA AT TALIS PARK AND TALIS PARK SPORTS COMPLEX	29.15	0.40	1.4%	COMPLETE	COLLIER	48	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	K E TALIS PARK PROPERTIES, L L C	RECREATIONAL
140826-2	11-01821-P	CORSICA WAY AT TALIS PARK	3.07	0.00	0.0%	COMPLETE	COLLIER	48	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	K E TALIS PARK PROPERTIES L L C	RESIDENTIAL
150318-5	11-01821-P	CORSICA WAY MULTI-FAMILY	14.44	0.00	0.0%	COMPLETE	COLLIER	48	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	K E TALIS PARK PROPERTIES, L L C	RESIDENTIAL
141210-5	36-04032-P-02	COTTAGES AT OLD CORKSCREW GOLF CLUB	18.39	18.01	97.9%	COMPLETE	LEE	46	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COTTAGES AT OLD CORKSCREW GOLF CLUB L L C	RESIDENTIAL
150508-10	11-00347-S	COUNTRYSIDE GOLF AND COUNTRY CLUB	320.79	65.77	20.5%	COMPLETE	COLLIER	50	26	05	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COUNTRYSIDE MASTER ASSOCIATION INC	RESIDENTIAL
150716-6	11-00347-S	COUNTRYSIDE GOLF AND COUNTRY CLUB	9.32	3.70	39.7%	COMPLETE	COLLIER	50	26	05	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COUNTRYSIDE MASTER ASSOCIATION INC	GOLF COURSE DEVELOPMENT
150204-13	11-00167-S	COURTSIDE COMMONS CARPORTS	5.90	0.00	0.0%	COMPLETE	COLLIER	49	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WYNDEMERE HOMEOWNERS ASSOCIATION, INC.	RESIDENTIAL
140815-9	36-03865-P-06	COURTYARDS AT ESTERO APARTMENTS	8.58	0.00	0.0%	COMPLETE	LEE	46	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FOCUS ESTERO PARTNERS L L C	RESIDENTIAL
160425-16	36-05431-P	COVES OF ESTERO BAY (FKA TORTUGA PRESERVE)	80.31	61.60	76.7%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	K B HOME FORT MYERS L L C	RESIDENTIAL
151013-4	36-05431-P	COVES OF ESTERO BAY AKA TORTUGA PRESERVE	80.31	61.60	76.7%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	K B HOME TAMPA L L C	RESIDENTIAL
140314-22	11-00360-S	COX WAREHOUSE (REF: A#970523-12)	1.15	0.00	0.0%	VOID	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	TAYLOR THREE CONDOMINIUM ASSOCIATION INC	COMMERCIAL
140724-22	11-00360-S-88	CREATIVE KITCHENS	1.15	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SKYWATER NAPLES L L C	ROADWAY
131202-3	11-01638-P	CREEKSIDE COMMERCE PARK EAST	38.78	22.96	59.2%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CREEKSIDE EAST INC	COMMERCIAL
130905-9	11-01638-P	CREEKSIDE COMMERCE PARK EAST INTERNAL ROADWAY	38.78	22.96	59.2%	COMPLETE	COLLIER	48	25	27	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	CREEKSIDE EAST INC	RESIDENTIAL
150421-8	11-01638-P	CREEKSIDE CORNERS (CREEKSIDE EAST - TRACT 5 B)	7.75	7.62	98.3%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CREEKSIDE EAST, INC.	COMMERCIAL
150113-7	36-07933-P	CREEKSIDE PRESERVE FKA ROSARNO	31.10	10.08	32.4%	WITHDRAWN	LEE	46	25	18	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D R HORTON	RESIDENTIAL
141014-7	11-01638-P	CREEKSIDE RETAIL CENTER (AKA CREEKSIDE CORNERS) - TRACT 5B	28.91	22.90	79.2%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CREEKSIDE EAST, INC.	COMMERCIAL
150226-2	26-00679-P	CROOKS RANCH	2690.04	416.86	15.5%	COMPLETE	HENDRY	46	32	S11,14,15,22,23	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	CROOKS RANCH	AGRICULTURAL
151008-1	26-00679-P	CROOKS RANCH	2690.04	416.86	15.5%	COMPLETE	HENDRY	46	32	11,14,15,2,23	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	CROOKS RANCH	AGRICULTURAL
140616-5	11-00737-S-08	CROSSPOINTE MEDICAL BUILDING	1.02	0.00	0.0%	VOID	COLLIER	48	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	M P O PROPERTIES CROSSPOINTE L L C	OFFICE BUILDING
150630-19	26-00300-S	CROWS NEST GROVE	3710.08	781.08	21.1%	COMPLETE	HENDRY	46	31	34,35,35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER GROVES L T D	AGRICULTURAL
140905-4	11-00195-S	CRYSTAL LAKE R V RESORT STORAGE AREA	10.94	0.33	3.1%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CRYSTAL LAKE PROPERTY OWNERS ASSOC TWO INC	RESIDENTIAL
150820-13	11-00195-S	CRYSTAL LAKE R V RESORT STORAGE AREA	10.71	0.15	1.4%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CRYSTAL LAKE P O A TWO, INC.	RESIDENTIAL
160126-16	36-03803-P-02	CULVERS OF BONITA SPRINGS	1.19	0.00	0.0%	COMPLETE	LEE	48	25	01	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	M B B S PROPERTY L L C	COMMERCIAL
140312-12	36-04135-P-02	CULVERS OF ESTERO	1.84	0.00	0.0%	COMPLETE	LEE	46	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D S M B PROPERTY 1 L L C	OTHER
150323-11	36-01620-S-14	CVS (FKA ECKERDS) AT PELICANS COVE BONITA SPRINGS	1.83	0.00	0.0%	COMPLETE	LEE	47	25	16	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	I S THREE AUSTIN GABLES L P	COMMERCIAL
150921-15	11-03739-P	CYPRESS WAY EAST SIDEWALK IMPROVEMENTS	5.53	0.02	0.3%	COMPLETE	COLLIER	48	25		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY	ROADWAY WITHIN RESIDENTIAL
140717-10	36-07096-P	DANIELS MARKETPLACE	66.49	0.60	0.9%	COMPLETE	LEE	45	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	DANIELS PARKWAY J V INVESTMENT L L C	COMMERCIAL
151209-1	36-01729-S	DANIELS PARKWAY EXTENSION FOR SKY WALK	7.25	7.25	100.0%	COMPLETE	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	COMMERCIAL
160701-6	11-03043-P	DAVIS BOULEVARD TURNLANE AT EAST GATEWAY	37.26	37.12	99.6%	INITIAL REVIEW	COLLIER	50	26	3,4,9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
140131-7	36-05858-P	DE LASALLE ACADEMY OF FORT MYERS	5.27	0.00	0.0%	WITHDRAWN	LEE	45	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DE LASALLE ACADEMY OF FORT MYERS INC	COMMERCIAL
150722-13	26-00732-P	DEER FENCE FARM	1957.19	368.76	18.8%	COMPLETE	HENDRY	46	32	31-34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	IMMOKALEE EXCHANGE L L C	AGRICULTURAL
140306-12	11-02336-P-03	DEL WEBB 201-203	164.60	13.55	8.2%	COMPLETE	COLLIER	48	29	8	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	BARRON COLLIER PARTNERSHIP LTD	RESIDENTIAL
151007-12	11-02336-P-03	DEL WEBB 203-204	169.24	14.09	8.3%	COMPLETE	COLLIER	48	29		ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PULTE HOME CORPORATION	RESIDENTIAL
150820-14	11-02336-P-03	DEL WEBB CONSOLIDATED SALES AND MODEL CENTER	10.80	0.01	0.1%	COMPLETE	COLLIER	48	29	8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PULTE HOME CORPORATION	COMMERCIAL
141201-6	11-03657-P	DELNOR-WIGGINS PASS STATE PARK	25.12	0.34	1.3%	COMPLETE	COLLIER	0	0		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	FLORIDA DEPT OF ENVIRONMENTAL PROTECTION	RECREATIONAL
160120-1	26-01225-P	DEVILS GARDEN OXBOW WETLAND RESTORATION PROJECT	720.33	96.38	13.4%	COMPLETE	HENDRY	46	32	2,3,11	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	U S D A/N R C S	ENVIRONMENTAL RESTORATION
150422-12	26-00143-S	DEVILS GARDEN SLOUGH WETLANDS RESTORATION PLAN (W R P)	6651.33	1434.97	21.6%	COMPLETE	HENDRY	46	33	1-3, 10-15, 22-27, 34-36	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	U S D A - N R C S	ENVIRONMENTAL RESTORATION
150421-13	36-03735-P-03	DIAMOND OAKS VILLAGE	8.28	0.12	1.4%	COMPLETE	LEE	47	25	16	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	GABELRY DEVELOPMENT L L C	COMMERCIAL
140516-15	36-01620-S-13	DISCOVERY DAY ACADEMY	2.28	0.00	0.0%	COMPLETE	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DISCOVERY DAY ACADEMY I I INC	PUBLIC AND INSTITUTIONAL
131210-3	36-08000-P	DOLLAR GENERAL AT 701 GRETCHEN AVENUE SOUTH	1.54	0.00	0.0%	RETURNED	LEE	44	26	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PALMETTO LEHIGH ACRES-GUNNERY L L C	COMMERCIAL
140812-16	36-07447-P	DOWNTOWN ESTERO	34.32	5.13	15.0%	COMPLETE	LEE	46	25	28	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND CONSTRUCTION/OPERATION	MOD	C H ESTERO LAND LIMITED PARTNERSHIP	RESIDENTIAL
141016-6	36-07278-P	DOWNTOWN ESTERO/F D O T TURN LANES	52.77	2.00	3.8%	COMPLETE	LEE	46	25	20,21,28,33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150707-12	36-06211-P-11	DRURY INN AND SUITES AT UNIVERSITY PLAZA WEST	2.64	2.27	86.0%	COMPLETE	LEE	46	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DRURY DEVELOPMENT CORPORATION	COMMERCIAL
150929-23	26-00533-S	DUCK CURVE FARM	783.00	290.45	37.1%	COMPLETE	HENDRY	47	32	4,9	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	HICKX-6 L L C	AGRICULTURAL
141223-6	26-00003-F	DUDA LABELLE SECTIONS 10 AND 11-FORMAL WETLAND DETERMINATION	1210.89	60.88	5.0%	CLOSED	HENDRY	45	28	10	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	A DUDA AND SONS INC	WETLAND DETERMINATION
151103-4	11-00212-S-140	DUNKIN DONUTS AIRPORT ROAD PLAZA TR B PARCEL C	0.68	0.00	0.0%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	M K REALTY - AIRPORT RD & RADIO RD L L C	COMMERCIAL
131003-9	36-04234-P-05	E BONITA ACTIVE ADULT LAKE COMMUNITY (REF: A#131003-8)	294.94	71.26	24.2%	VOID	LEE	48	26	01	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LENNAR HOMES L L C	RESIDENTIAL
151222-20	26-01041-P	EAGLE FARM WEST	55.62	1.80	3.2%	COMPLETE	HENDRY	43	31	21, 22, 27, 28	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	EAGLE FARM I I, L L C	AGRICULTURAL
150225-15	36-00318-S	EAGLE RIDGE BRIDGE AND GOLF CART RENOVATION	21.31	5.25	24.6%	COMPLETE	LEE	45	25	29	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	REDUS FL PROPERTIES L L C	GOLF COURSE DEVELOPMENT
150826-1	36-00318-S	EAGLE RIDGE GOLF COURSE STORMWATER MANAGEMENT	7.84	2.81	35.8%	COMPLETE	LEE	45	25	29	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	C H 5-EAGLE RIDGE L L C	RESIDENTIAL
140808-8	11-00057-S-02	EAGLE VIEW (RETINA CONSULTANTS)	6.15	0.00	0.0%	COMPLETE	COLLIER	49	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W R G S VENTURES, L L C	COMMERCIAL
130930-20	26-00003-S-04	EAST CALOOSAHATCHEE FAVT PROJECT	4183.77	1077.28	25.7%	COMPLETE	HENDRY	44	32	18, 19	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	WATER AND SOIL SOLUTIONS L L C	AGRICULTURAL
130701-10	36-06341-P	EAST CYPRESS VIEW	4.74	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	KORESHAN CYPRESS VIEW L L C	COMMERCIAL
140212-10	36-06341-P	EAST CYPRESS VIEW	4.74	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	KORESHAN / CYPRESS VIEW L L C	COMMERCIAL
160105-14	36-06341-P	EAST CYPRESS VIEW	4.74	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	KORESHAN/CYPRESS VIEW L L C	COMMERCIAL
160505-6	36-06341-P	EAST CYPRESS VIEW	4.74	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	KORESHAN/CYPRESS VIEW L L C	COMMERCIAL
150324-11		EAST GATEWAY	37.26	37.12	99.6%	UNDER REVIEW	COLLIER	49	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	B C NAPLES INVESTMENTS, L L P	RESIDENTIAL
140106-12	36-06400-P-02	EASTERN METAL SUPPLY	19.97	0.00	0.0%	COMPLETE	LEE	46	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	G S G INVESTMENTS SOUTH FLORIDA L L C	INDUSTRIAL
140204-7	36-00678-S-39	EASTLINKS BUSINESS PARK LOT 4 AT GATEWAY (GARTNER BLDG 2)	7.41	0.00	0.0%	COMPLETE	LEE	45	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DANIELS-GATEWAY L L C	COMMERCIAL
140528-5	11-00360-S-76	EL CONDOR	0.59	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LUNAR PEAK PROPERTIES L L C	INDUSTRIAL
150304-14	11-02874-P	ELEMENTARY SCHOOL SITE L	31.71	22.07	69.6%	COMPLETE	COLLIER	48	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	DISTRICT SCHOOL BOARD OF COLLIER COUNTY	INSTITUTIONAL
141126-17	36-06431-P	EMERSON VILLAGE	26.44	8.94	33.8%	COMPLETE	LEE	46	25	07	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S D EMERSON L L C	RESIDENTIAL
150403-9	36-06431-P	EMERSON VILLAGE	32.10	14.63	45.6%	COMPLETE	LEE	46	25	07	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S D EMERSON, L L C	RESIDENTIAL
141125-8	36-06431-P	EMERSON VILLAGE (REF: A# 141126-17)	26.44	8.94	33.8%	VOID	LEE	46	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	S D EMERSON L L C	RESIDENTIAL
140424-14	11-03757-P	ENCLAVE	28.21	27.90	98.9%	NO RESPONSE	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ENCLAVE-LIVINGSTON, L L C	RESIDENTIAL
150908-1	11-02031-P	ESPLANADE DEVELOPMENT (F K A MIRASOL)	879.37	858.48	97.6%	NO RESPONSE	COLLIER	48	26	10,11, 15, 22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	TAYLOR MORRISON OF WEST FLORIDA, INC.	GOLF COURSE DEVELOPMENT
140425-12	11-02031-P	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	19.47	18.76	96.3%	COMPLETE	COLLIER	48	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	TAYLOR MORRISON ESPLANADE NAPLES, L L C	RESIDENTIAL
150702-16	11-02031-P	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	21.66	21.64	99.9%	COMPLETE	COLLIER	48	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	TAYLOR MORRISON ESPLANADE NAPLES, L L C	RESIDENTIAL
160126-1	11-02031-P	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	2.42	2.39	98.8%	WITHDRAWN	COLLIER	48	26	15	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	TAYLOR MORRISON ESPLANADE NAPLES L L C	RESIDENTIAL
150506-12	36-08410-P	ESTERO 4.2	4.22	3.79	89.8%	COMPLETE	LEE	46	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	EICH PROPERTIES OF ESTERO PARKWAY L L C	COMMERCIAL
140227-15	36-03733-P	ESTERO 41 SELF STORAGE	5.14	0.00	0.0%	COMPLETE	LEE	46	25	20	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ESTERO 41 SELF STORAGE L L C	COMMERCIAL
150430-10	36-07807-P	ESTERO CROSSING	42.32	26.19	61.9%	NO RESPONSE	LEE	46	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S D ESTERO CROSSINGS L L C	RESIDENTIAL
140225-22	36-03186-P-03	ESTERO GAS STATION	1.38	0.00	0.0%	COMPLETE	LEE	46	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	322 & 91 PROPERTY CO L L C	COMMERCIAL
141208-9	36-03865-P-07	ESTERO INTERSTATE COMMERCE PARK	2.73	0.01	0.4%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	NATIONAL RETAIL PROPERTIES, L P	COMMERCIAL
130723-13	36-06994-P	ESTERO LOCK UP AT HALFWAY CREEK	10.56	7.97	75.4%	COMPLETE	LEE	47	25	4	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	LOCK-UP EVERGREEN DEVELOPMENT SERIES L L C	RESIDENTIAL
150522-9	36-06994-P	ESTERO LOCK-UP AT HALFWAY CREEK	12.01	7.97	66.4%	COMPLETE	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LU/ESTERO LAND HOLDINGS L L C	COMMERCIAL
140312-10	36-04753-P	ESTERO OAKS M P D	36.88	3.94	10.7%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ESTERO THREE OAKS PARTNERS L L C	RESIDENTIAL
150604-3	36-04753-P	ESTERO OAKS M P D	36.88	3.94	10.7%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ESTERO THREE OAKS PARTNERS L L C	OTHER
150820-9	36-04753-P	ESTERO OAKS M P D - 7-ELEVEN	1.24	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ESTERO THREE OAKS PARTNERS L L C	COMMERCIAL
130816-20	36-06518-P	ESTERO PLACE	48.21	0.00	0.0%	COMPLETE	LEE	46	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	NEAL COMMUNITIES OF SOUTHWEST FLORIDA L L C	RESIDENTIAL
160714-2	36-05254-P	ESTERO POST OFFICE PROPOSED BUILDING AND PARKING EXPANSION	4.57	4.32	94.5%	INITIAL REVIEW	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	UNITED STATE POSTAL SERVICE	GOVERNMENT
140924-10	36-00478-S-06	ESTERO TOWN CENTER	3.71	0.40	10.8%	COMPLETE	LEE	46	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S G ESTERO L L C	COMMERCIAL
160310-11	36-04135-P-03	ESTERO VETERINARY CLINIC	1.25	0.00	0.0%	COMPLETE	LEE	46	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DOS PAPAS ESTERO L L C	COMMERCIAL
150915-12	11-03462-P	ESTILO - FKA LORDS WAY 30	130.57	96.97	74.3%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MARCO ISLAND GROUP L L C	RESIDENTIAL
150107-11	11-03462-P	ESTILO (FKA LORDS WAY 30)	130.57	96.97	74.3%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LORDS WAY L L C	RESIDENTIAL
131218-15	11-01662-P-12	EVERGLADES AMMO (LOT 33 - WHITE LAKE CORPORATE PARK PHASE 2)	1.17	0.00	0.0%	COMPLETE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ZED HOLDING L L C	COMMERCIAL
140311-5	11-01662-P-12	EVERGLADES AMMO (LOT 33 - WHITE LAKE CORPORATE PARK PHASE 2)	1.17	0.00	0.0%	COMPLETE	COLLIER	49	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ZED HOLDING L L C	COMMERCIAL
150513-9	36-05136-P-09	EXECUTIVE OFFICES AND TRAINING FACILITY	4.04	0.08	1.9%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SOMERO ENTERPRISES INC	COMMERCIAL
140820-12	36-00491-S-02	F G C U OFF-SITE UTILITY IMPROVEMENTS	12.58	0.14	1.1%	COMPLETE	LEE	46	25	14,15,23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	INDUSTRIAL/UTILITIES
160121-7	36-02881-S	F G C U ACADEMIC CORE RECREATIONAL FIELDS	11.43	0.02	0.2%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
150204-11	36-05188-P-02	F G C U EMERGENT TECH INSTITUTE	6.61	6.61	100.0%	COMPLETE	LEE	46	26	06	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA GULF COAST UNIVERSITY BOARD OF TRUSTEES	INSTITUTIONAL
160503-2	36-02881-S	F G C U LINK EXPANSION	0.21	0.00	0.0%	COMPLETE	LEE	46	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150320-8	36-02881-S	F G C U MAIN ENTRANCE SIGNAGE IMPROVEMENTS	1.43	0.76	52.7%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
160510-1	36-02881-S	F G C U NORTH LAKE VILLAGE DINING HALL AND BOARDWALK	6.43	0.04	0.6%	COMPLETE	LEE	46	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA GULF COAST UNIVERSITY (ATTN: STEVE MAGIERA)	INSTITUTIONAL
140917-10	36-03568-P	F G C U OFF-SITE UTILITY IMPROVEMENTS	16.83	0.08	0.5%	COMPLETE	LEE	46	25	14,15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	INDUSTRIAL/UTILITIES
140917-2	36-08277-P	F G C U OFFSITE UTILITY IMPROVEMENTS-B H G P PORTION	16.83	0.08	0.5%	COMPLETE	LEE	46	25	14	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	INDUSTRIAL/UTILITIES
150610-6	36-02881-S	F G C U PUBLIC RELATIONS MODULAR BLDG	0.75	0.02	3.1%	COMPLETE	LEE	46	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
160304-12		F P L GOLDEN GATE SERVICE CENTER REDEVELOPMENT PROJECT	12.32	0.05	0.4%	NO RESPONSE	COLLIER	49	26	15	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	FLORIDA POWER AND LIGHT COMPANY	INDUSTRIAL/UTILITIES
140310-10	36-05619-P	F R P L L C	4.76	4.66	97.8%	COMPLETE	LEE	47	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	F R P L L C	COMMERCIAL
140827-16	11-00360-S-91	FAIRWAYS TRADE VILLAGE	4.27	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	FAIRWAYS TRADE VILLAGE L L C	INDUSTRIAL
140820-6	11-02332-P	FALLS OF PORTOFINO PHASE 2	31.83	31.67	99.5%	NO RESPONSE	COLLIER	48	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SOBEL VANDERBILT L L C	RESIDENTIAL
140825-18	26-00121-S	FELDA RIDGE GROVES	621.76	49.35	7.9%	COMPLETE	HENDRY	45	28	13,23,24	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	FELDA RIDGE GROVES PARTNERSHIP	AGRICULTURAL
131212-3	36-02881-S	FGCU CAMPUS CENTRAL ENERGY PLANT	5.20	0.93	17.9%	COMPLETE	LEE	46	25	13, 23, 24	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
130911-7		FIBEROPTIC SUBAQUEOUS CROSSING AT ESPLANADE ENTRANCE	0.15	0.06	41.5%	WITHDRAWN	COLLIER	48	26	22	ERP	GP	ENVIRONMENTAL RESOURCE (NO PERMIT REQUIRED)	NEW	CENTURY LINK	OTHER
150309-1	36-00287-S	FIDDLESTICKS BIKE PATH	14.91	4.40	29.5%	COMPLETE	LEE	45	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
141218-15	36-00261-S	FIDDLESTICKS COUNTRY CLUB POOL AREA IMPROVEMENTS	6.43	0.09	1.4%	COMPLETE	LEE	45	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FIDDLESTICKS COUNTRY CLUB INC (ATTN: RYAN SHAW)	RESIDENTIAL
140404-6	11-00364-S-08	FIFTH THIRD BANK - BERKSHIRE COMMONS BRANCH (F K A SUN BANK)	0.89	0.00	0.0%	COMPLETE	COLLIER	49	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	FIFTH THIRD BANK	COMMERCIAL
160427-19	26-00243-S	FINKS GROVE	315.07	75.44	23.9%	COMPLETE	HENDRY	45	29	16	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GOODMAN GROVE PARTNERSHIP	AGRICULTURAL
151201-5	11-03754-P	FIRST BANK - IMMOKALEE	1.41	0.00	0.0%	UNDER REVIEW	COLLIER	47	9	4	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	FIRST BANK	COMMERCIAL
140807-1	36-08264-P	FIRST FRUIT FARMS CORKSCREW FARM	1173.90	42.62	3.6%	COMPLETE	LEE	46	27	19	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	RESOURCE CONSERVATION HOLDINGS L L C	AGRICULTURAL
151016-2	36-06211-P-10	FIRST WATCH - UNIVERSITY PLAZA	3.42	0.44	12.9%	COMPLETE	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	P V-DUNK CITY L L C	COMMERCIAL
160505-11	36-06211-P-10	FIRST WATCH AT UNIVERSITY PLAZA	0.50	0.44	88.9%	COMPLETE	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	P V-DUNK CITY L L C	COMMERCIAL
150914-6	36-03336-P	FLAMINGO ISLAND FLEA MARKET	9.15	0.00	0.0%	COMPLETE	LEE	47	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	F I F M R E L L C	COMMERCIAL
150302-12	11-01121-S-16	FLORIDA COMMUNITY BANK	18.93	1.06	5.6%	COMPLETE	COLLIER	48	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	FLORIDA COMMUNITY BANK N A	COMMERCIAL
150317-15	11-01121-S-16	FLORIDA COMMUNITY BANK NAPLES	1.26	0.00	0.0%	INITIAL REVIEW	COLLIER	48	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	FLORIDA COMMUNITY BANK N A	COMMERCIAL
150212-13	36-05238-P	FLORIDA GULF COAST TECHNOLOGY AND RESEARCH PARK	983.48	688.41	70.0%	COMPLETE	LEE	46	25	1, 2, 12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	BENDERSON DEVLOPMENT COMPANY L L C	COMMERCIAL
160215-11	36-05238-P	FLORIDA GULF COAST TECHNOLOGY AND RESEARCH PARK	983.48	688.41	70.0%	CLOSED	LEE	46	25	1,2,12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	BENDERSON DEVLOPMENT COMPANY L L C	COMMERCIAL
151221-3	36-02881-S	FLORIDA GULF COAST UNIVERSITY - PARKING LOT/ACCESS ROAD	0.71	0.00	0.0%	NO RESPONSE	LEE	46	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	STATE OF FLORIDA / F G C U	INSTITUTIONAL
131101-5	36-02881-S	FLORIDA GULF COAST UNIVERSITY GREAT LAWN	4.16	0.66	15.8%	COMPLETE	LEE	46	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
160204-3	11-00212-S-139	FORD DRYWALL	1.25	0.00	0.0%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PERE ENTERPRISE L L C	INDUSTRIAL
140828-4	11-01590-P	FOREST GLEN MAINTENANCE FACILITY BUILDING ADDITION	0.80	0.06	7.9%	COMPLETE	COLLIER	50	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FOREST GLEN GOLF AND COUNTRY CLUB	OFFICE BUILDING
160212-13	36-00611-S	FORT MYERS BEACH GOLF CLUB	109.03	16.49	15.1%	COMPLETE	LEE	47	24	3	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ESTERO BAY IMPROVEMENT ASSOCIATION INC	RECREATIONAL
150702-14	11-00181-S	FOXFIRE GOLF AND COUNTRY CLUB	2.46	0.00	0.0%	COMPLETE	COLLIER	50	26	06	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FOXFIRE COMMUNITY ASSOC. OF COLLIER COUNTY, INC.	GOLF COURSE DEVELOPMENT
151112-11	36-08367-P	FRESHMAN DANIEL	44.15	33.63	76.2%	COMPLETE	LEE	45	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	DANIELS 8.3 L L C	COMMERCIAL
140516-6	36-08367-P	FRESHMAN DANIELS	44.15	33.65	76.2%	COMPLETE	LEE	45	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	DANIELS 8.3 L L C	RESIDENTIAL
150805-18	26-00273-S	G ROAD LAND TRUST	146.95	15.20	10.3%	COMPLETE	HENDRY	44	29	10	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LAND TRUST SERVICE CORPORATION AS TRUSTEE	AGRICULTURAL
130807-17	26-00623-P-02	GARCIA FARMS HOUSING AND OFFICE	29.81	4.42	14.8%	COMPLETE	HENDRY	47	33	14	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	MCDANIEL RESERVE HOLDINGS L L C	AGRICULTURAL
140422-13	11-01342-S	GASTION INC - BERKSHIRE	1.06	0.00	0.0%	COMPLETE	COLLIER	50	26	5	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MAHIR TRADING CORP	COMMERCIAL
131014-4	36-00678-S	GATEWAY GOLF & COUNTRY CLUB - CLUBHOUSE & FITNESS CENTER	0.11	0.00	0.0%	COMPLETE	LEE	45	26	07	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	GATEWAY GOLF AND COUNTRY CLUB INC	RESIDENTIAL
141201-5	36-00678-S-40	GATEWAY PARCEL 2B-1	17.28	3.35	19.4%	COMPLETE	LEE	45	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	LYNX ZUCKERMAN AT GATEWAY L L C	RESIDENTIAL
140428-20	36-08199-P	GATEWAY ROADWAYS REHABILITATION	21.91	1.44	6.6%	COMPLETE	LEE	0	0		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
160129-10		GENOVA	17.53	0.00	0.0%	NO RESPONSE	LEE	46	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	GENOVA PARTNERS L L C	RESIDENTIAL
141112-27	11-02363-P-04	GERMAIN AUTO IMAGES	1.48	0.00	0.0%	COMPLETE	COLLIER	49	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	GERMAIN REAL ESTATE CO L L C	COMMERCIAL
160119-25	11-03797-P	GERMAIN HONDA	10.40	0.00	0.0%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	J A Z AUTOMOTIVE PROPERTIES L L C	COMMERCIAL
151103-6	11-02061-P-02	GERMAIN STORAGE LOT	5.26	0.28	5.3%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	GERMAIN REAL ESTATE COMPANY L L C	COMMERCIAL
151102-6	11-01770-P	GOLDEN GATE BLVD (C R 876) FROM WILSON BLVD TO 20TH STREET	15.32	1.85	12.1%	COMPLETE	COLLIER	49	27	1,2,3,4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
141210-12		GOLDEN GATE ESTATES PARK SITE	127.92	127.66	99.8%	WITHDRAWN	COLLIER	48	27	32	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	OTHER
150805-3	11-00433-S-03	GOLDEN GATE INN AND COUNTRY CLUB	5.82	0.00	0.0%	COMPLETE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	R & M REAL ESTATE COMPANY INC	COMMERCIAL
131127-18	26-00768-P	GOLDEN OX	1284.84	225.81	17.6%	NO RESPONSE	HENDRY	46	32	3,10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD		AGRICULTURAL
160329-17	36-05195-P	GOLDEN PALM MOTOR COACH ESTATES	54.49	23.31	42.8%	COMPLETE	LEE	45	27	19	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	FAB 1 INC	RECREATIONAL
131031-6	11-01714-P	GOLF CLUB OF THE EVERGLADES	521.68	320.38	61.4%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	PULTE HOME CORPORATION	RESIDENTIAL
150219-18	11-01714-P	GOLF CLUB OF THE EVERGLADES	521.68	320.38	61.4%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	PULTE HOME CORPORATION	RESIDENTIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150728-9	11-01714-P	GOLF CLUB OF THE EVERGLADES	12.77	8.46	66.3%	COMPLETE	COLLIER	48	27	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	PULTE HOME CORPORATION	RECREATIONAL
150914-9	11-01714-P	GOLF CLUB OF THE EVERGLADES	9.86	6.68	67.7%	UNDER REVIEW	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PULTE HOME CORPORATION	RESIDENTIAL
160303-10	11-01714-P	GOLF CLUB OF THE EVERGLADES (BASINS REVISIONS)	94.94	23.58	24.8%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PULTE HOME CORPORATION	GOLF COURSE DEVELOPMENT
150923-6	11-00254-S-02	GOMEZ TENNIS ACADEMY	5.21	0.00	0.0%	NO RESPONSE	COLLIER	48	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	R C E TENNIS ENTERPRISES, L L C	RECREATIONAL
160323-16		GOOD TURN CENTER	9.28	4.07	43.9%	NO RESPONSE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL)	NEW	COLLIER RATTLESNAKE L L C	COMMERCIAL
140130-20	11-03331-P	GOODLETTE ARMS OFFICE BUILDING	11.84	0.07	0.6%	COMPLETE	COLLIER	49	25	34	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	GOODLETTE ARMS L L C S	OFFICE BUILDING
141202-9	11-00820-S	GOODLETTE-FRANK ROAD TURN LANES FOR CREEKSIDE	3.17	0.07	2.3%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CREEKSIDE EAST, INC.	COMMERCIAL
160225-10	11-02234-P-14	GOODWILL INDUSTRIES- LOTS 5 AND 5 HERITAGE COMMONS TRACT D	2.01	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CAMERON PARTNERS I I L L C	COMMERCIAL
160601-15	11-02234-P-14	GOODWILL INDUSTRIES- LOTS 5 AND 6 HERITAGE COMMONS TRACT D	2.01	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PIEDMONT DEVELOPMENT OF FLORIDA L L C	COMMERCIAL
130918-12	11-03344-P	GORDON RIVER GREENWAY PARK	120.84	105.31	87.1%	COMPLETE	COLLIER	49	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	OTHER
150116-10	11-03344-P	GORDON RIVER GREENWAY PARK	130.90	105.65	80.7%	COMPLETE	COLLIER	49	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	GOVERNMENT
131127-12		GRACE ROMANIAN CHURCH	12.11	12.07	99.6%	WITHDRAWN	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	GRACE ROMANIAN BAPTIST CHURCH INC	INSTITUTIONAL
151026-20	36-07003-P	GREENWOOD VILLAS (F K A VILLA MAGNIFICA)	9.28	7.93	85.4%	WITHDRAWN	LEE	46	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PERINEUS L L C	RESIDENTIAL
150303-6	11-00806-S-07	GREY OAKS CLUBHOUSE EAST EXPANSION	16.02	0.52	3.2%	COMPLETE	COLLIER	49	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	GREY OAKS COUNTRY CLUB INC	RECREATIONAL
150518-15	11-00806-S-07	GREY OAKS CLUBHOUSE EAST EXPANSION	16.04	0.52	3.2%	COMPLETE	COLLIER	49	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	GREY OAKS COUNTRY CLUB INC.	RECREATIONAL
160204-2	11-00806-S-07	GREY OAKS CLUBHOUSE WELLNESS CENTER	1.04	0.00	0.0%	COMPLETE	COLLIER	49	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	GREY OAKS COUNTRY CLUB L L C	RESIDENTIAL
150828-14	11-00806-S-07	GREY OAKS MAINTENANCE FACILITY	2.89	0.00	0.0%	COMPLETE	COLLIER	49	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	GREY OAKS COUNTRY CLUB INC	RECREATIONAL
150416-8	11-01644-P-09	GROUP PRESIDENT ELECTRONICS U S A	1.90	0.00	0.0%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	IBC, INC.	INDUSTRIAL
150901-15	11-00542-S	GULF COAST HIGH SCHOOL-CHILLER TANK	0.30	0.00	0.0%	COMPLETE	COLLIER	48	26	28	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SCHOOL BOARD OF COLLIER COUNTY	PUBLIC AND INSTITUTIONAL
151105-7	36-05198-P-07	GULF COAST LANDING	1.05	0.00	0.0%	COMPLETE	LEE	46	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	G C L 16441 L L C	COMMERCIAL
141121-4	36-05364-P	GULFVIEW PINES	17.13	16.39	95.7%	RETURNED	LEE	46	25	18	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	LAKEWALK HOMES L L C	RESIDENTIAL
160512-13		GULFVIEW TOWNHOMES	9.77	9.45	96.7%	NO RESPONSE	COLLIER	50	26	17	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	GULFVIEW TOWNHOMES L L C	RESIDENTIAL
150715-2	36-08487-P	H AND E EQUIPMENT SERVICES	8.16	0.00	0.0%	COMPLETE	LEE	46	25	6	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	CPRT HE FORT MYERS LLC	INDUSTRIAL
141218-5	36-07357-P	H L H REAL ESTATE PROPERTIES DOCKING FACILITY	1.51	0.22	14.4%	COMPLETE	LEE	47	25	32	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	H L H REAL ESTATE PROPERTIES L L C	RECREATIONAL
150401-12	11-03377-P	HABITAT FOR HUMANITY OF COLLIER COUNTY - LEGACY LAKES	10.44	0.03	0.3%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC.	AGRICULTURAL
140718-6	11-03312-P	HACIENDA BOULEVARD PHASE 1	16.56	14.98	90.5%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES, L L C	ROADWAY
130917-26	11-03312-P-04	HACIENDA LAKES OF NAPLES RATTLESNAKE HAMMOCK PHASE 2	11.47	1.91	16.6%	COMPLETE	COLLIER	50	26	23	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	HACIENDA LAKES OF NAPLES L L C	RESIDENTIAL
140826-12	11-03312-P-04	HACIENDA LAKES OF NAPLES RATTLESNAKE HAMMOCK PHASE 2	11.47	1.91	16.6%	COMPLETE	COLLIER	50	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES L L C	RESIDENTIAL
151215-2	11-03312-P-05	HACIENDA LAKES TRACT B	141.45	59.48	42.0%	COMPLETE	COLLIER	50	26	14 & 23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	HACIENDA LAKES OF NAPLES L L C	RESIDENTIAL
150924-5	11-03750-P	HADLE NURSERY	36.21	20.74	57.3%	COMPLETE	COLLIER	49	27	13	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	M P B P 2 ENTERPRISES L L C	AGRICULTURAL
130912-7	11-02654-P	HAMILTON GREENS	29.67	27.05	91.2%	COMPLETE	COLLIER	48	26	31	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LYNX ZUCKERMAN AT HAMILTON GREENS L L C	RESIDENTIAL
130918-18	11-02654-P	HAMILTON GREENS (REFER TO APPLICAITON NO. 120224-12)	29.63	27.01	91.2%	VOID	COLLIER	48	26	31	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	LYNX ZUCKERMAN OF HAMILTON GREENS L L C	RESIDENTIAL
141216-21	11-01543-P-06	HAMPTON INN NAPLES I-75	3.50	0.00	0.0%	COMPLETE	COLLIER	48	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SHREE MAHALAXMI MAA L L C	COMMERCIAL
140212-3	36-00678-S	HAMPTON PARK AT GATEWAY LAKE #10/GRIFFIN ROAD SIDEWALK	23.55	0.01	0.0%	COMPLETE	LEE	45	26	5,6,31	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
140718-12	36-00678-S	HAMPTON PARK PARCEL J (PHASE 7)	294.09	65.24	22.2%	COMPLETE	LEE	45	26	5,6	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	W C I COMMUNITIES, LLC	RESIDENTIAL
150811-3	36-04589-P-08	HARLEY DAVIDSON - MOTOR SPORTS	16.53	0.00	0.0%	COMPLETE	LEE	45	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FISCHER FLORIDA PROPERTIES I L L C	COMMERCIAL
140418-4	36-04589-P-08	HARLEY DAVIDSON MOTOR SPORTS SOLUTIONS	16.53	0.00	0.0%	COMPLETE	LEE	45	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	FISCHER FLORIDA PROPERTIES I L L C	COMMERCIAL
131212-18	11-00084-S-02	HARRIS MORAN RESEARCH FACILITY	6.32	0.00	0.0%	COMPLETE	COLLIER	48	29	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ENGLISH BROTHERS	AGRICULTURAL
140214-30	11-00084-S-02	HARRIS MORAN RESEARCH FACILITY	7.63	0.00	0.0%	COMPLETE	COLLIER	48	29	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ENGLISH BROTHERS	AGRICULTURAL
140108-17	36-04499-P	HAWTHORNE FKA TESONE	212.62	58.58	27.6%	COMPLETE	LEE	47	25	23-26	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION)	MOD	CENTEX HOMES	RESIDENTIAL
160602-20	36-00142-S	HENDRY CANAL WIDENING - PHASE 2	192.94	76.40	39.6%	COMPLETE	LEE	44	27	35	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEHIGH ACRES MUNICIPAL SERVICES	ENVIRONMENTAL RESTORATION
160603-25	36-00142-S	HENDRY CANAL WIDENING PHASE 1	73.06	42.69	58.4%	COMPLETE	LEE	44	27	36	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEHIGH ACRES MUNICIPAL SERVICES IMPROVEMENT DIST	OTHER
150317-7	11-02234-P-11	HERITAGE BAY CLUBHOUSE	10.82	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	HERITAGE BAY GOLF AND COUNTRY CLUB INC	COMMERCIAL
140808-7	11-02234-P-04	HERITAGE BAY COMMONS TRACT D	11.53	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	CAMERON PARTNERS I I, L L C	COMMERCIAL
130916-11	11-02234-P-04	HERITAGE BAY TRACT D	11.53	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	CAMERON PARTNERS L L C	COMMERCIAL
130917-6	11-02234-P-04	HERITAGE BAY TRACT D	11.53	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	CAMERON PARTNERS L L C	COMMERCIAL
150504-17	11-02234-P	HERITAGE BAY WASTEWATER PUMP STATION	2.48	2.21	89.2%	WITHDRAWN	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY- PUBLIC UTILITIES	INDUSTRIAL/UTILITIES
150713-4	11-02234-P-02	HERITAGE BAY WASTEWATER PUMP STATION	1.56	1.39	88.8%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	GOVERNMENT
140930-20	11-01662-P-06	HERITAGE BUILDERS STORAGE FACILITY	0.56	0.00	0.0%	COMPLETE	COLLIER	49	24	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	HERITAGE PROPERTY HOLDINGS, L L C	INDUSTRIAL
131125-1	36-00288-S-23	HERTZ GLOBAL HEADQUARTERS	34.25	0.00	0.0%	COMPLETE	LEE	47	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	THE HERTZ CORPORATION	OFFICE BUILDING

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
140508-15	36-03962-P	HIDDEN HARBOR	54.16	16.31	30.1%	COMPLETE	LEE	46	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	S D HIDDEN HARBOR L L C	OTHER
141212-12	36-03962-P	HIDDEN HARBOR	54.16	16.31	30.1%	COMPLETE	LEE	46	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	S D HIDDEN HARBOR L L C	RESIDENTIAL
141223-7	36-03962-P	HIDDEN HARBOR	54.16	16.31	30.1%	COMPLETE	LEE	46	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	S D HIDDEN HARBOR L L C	RESIDENTIAL
150203-12	36-03962-P	HIDDEN HARBOR	54.16	16.31	30.1%	COMPLETE	LEE	46	25	07	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	S D HIDDEN HARBOR L L C	RESIDENTIAL
150204-19	36-03962-P	HIDDEN HARBOR	54.16	16.31	30.1%	COMPLETE	LEE	46	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S D HIDDEN HARBOR L L C	RESIDENTIAL
160517-17	36-03962-P	HIDDEN HARBOR	54.16	16.31	30.1%	COMPLETE	LEE	46	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S D HIDDEN HARBOR, L L C	RESIDENTIAL
141211-11	36-00317-S-10	HIDDEN LAKE RESIDENTIAL	6.04	0.29	4.7%	COMPLETE	LEE	48	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	HIDDEN LAKE APARTMENT L L C	RESIDENTIAL
150105-5	36-08550-P	HIDEAWAY COVE	60.80	60.68	99.8%	COMPLETE	LEE	46	25	20	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	TAYLOR MORRISON	RESIDENTIAL
150713-17	11-00028-S	HIGH POINT COUNTRY CLUB (REF: A# 150526-1)	41.35	0.48	1.2%	VOID	COLLIER	49	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	HIGH POINT COUNTRY CLUB INC	RESIDENTIAL
150526-1	11-00028-S	HIGH POINT COUNTRY CLUB GROUP 11	41.35	0.48	1.2%	COMPLETE	COLLIER	49	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	HIGH POINT COUNTRY CLUB INC	RESIDENTIAL
140724-12	36-08256-P	HIGH TECH PROPERTIES	4.65	4.13	88.9%	COMPLETE	LEE	31	36	26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	HIGH TECH VENTURES L L C	COMMERCIAL
160714-11	36-02912-S	HIGHLAND WOODS GOLF AND COUNTRY CLUB	271.06	31.36	11.6%	INITIAL REVIEW	LEE	47	25	27, 28	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	HIGHLAND WOODS GOLF AND COUNTRY CLUB INC	RESIDENTIAL
150512-3	26-00453-S-02	HILL GRADE SOUTH	4039.01	236.36	5.9%	COMPLETE	HENDRY	45	32	11-14,23-25	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
150219-28	26-00175-S	HILLIARD BROTHERS OF FLORIDA	5176.92	473.97	9.2%	COMPLETE	HENDRY	44	30	1,2,11,12	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
140702-14	11-01662-P-13	HILTON MOVING STORAGE -LOT 21 WHITE LAKE CORPORATE PARK PH 3	1.71	0.00	0.0%	COMPLETE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BLACKPOND DEVELOPMENT CORP	INDUSTRIAL
151116-12	11-03744-P	HIWASSE	12.55	0.00	0.0%	NO RESPONSE	COLLIER	49	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	LIVINGSTON PROFESSIONAL CENTER L L C	COMMERCIAL
160225-12	36-03803-P-02	HOME DEPOT OUTPARCEL 4 (REF: A# 160126-16)	1.19	0.00	0.0%	VOID	LEE	48	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	M B B S PROPERTY L L C	COMMERCIAL
160613-20	36-07214-P	HOMESTEAD RD FROM S OF SUNRISE BLVD TO N OF ALABAMA RD	30.54	0.01	0.0%	COMPLETE	LEE	44	27	32	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140903-13	11-00218-S-08	HOMEWOOD AT NAPLES	3.17	0.27	8.4%	COMPLETE	COLLIER	49	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	N H P M S L L C	RESIDENTIAL
160316-6	36-03118-P	HOPE LUTHERAN CHURCH	9.31	0.00	0.0%	COMPLETE	LEE	47	25	26, 27	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HOPE LUTHERAN CHURCH	INSTITUTIONAL
141014-6	26-00003-S	HOPEDELAGE PHASE II OVERALL	4869.58	728.63	15.0%	COMPLETE	HENDRY	44	32		ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	JOE A HILLIARD TR EST	AGRICULTURAL
140725-11		HOTEL REVERIE	8.66	5.63	65.0%	NO RESPONSE	COLLIER	48	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	BAY HOUSE CAMPUS, LLC.	COMMERCIAL
150427-2	26-00539-S-02	HOWELL FARMS	538.86	70.82	13.1%	COMPLETE	HENDRY	47	32	3	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		AGRICULTURAL
160513-5	11-00212-S-100	HUFF MOVING AND STORAGE	2.26	0.00	0.0%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C VENTURES L C	INDUSTRIAL
160622-14	11-00212-S-100	HUFF MOVING AND STORAGE	2.26	0.00	0.0%	VOID	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C HUFF VENTURES L C	INDUSTRIAL
160520-23	11-01743-P	HUMANE SOCIETY OF NAPLES	2.71	0.00	0.0%	COMPLETE	COLLIER	49	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES AIRPORT AUTHORITY	PUBLIC AND INSTITUTIONAL
150129-6	36-03813-P	HYATT GOLF RESORT	500.72	331.10	66.1%	COMPLETE	LEE	47	25	5-8	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	PELICAN LANDING GOLF RESORT VENTURES L P	GOLF COURSE DEVELOPMENT
150623-21	36-03652-P	HYATT REGENCY AT COCONUT POINT - AMENITY EXPANSION	1.00	0.00	0.0%	COMPLETE	LEE	47	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	HYATT EQUITIES L L C	COMMERCIAL
160106-7	36-03652-P	HYATT REGENCY AT COCONUT POINT - OUTFALL RELOCATION	1.00	0.00	0.0%	COMPLETE	LEE	47	25	7	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HYATT EQUITIES L L C	OTHER
150129-8	11-00024-S	I F A S IMMOKALEE BUILDING 7712 EXPANSION	79.58	47.86	60.1%	COMPLETE	COLLIER	46	29	20	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	UNIVERSITY OF FLORIDA	GOVERNMENT
150506-14	26-00516-S	I P S - RENFROE FARM	476.55	83.18	17.5%	COMPLETE	HENDRY	45	28	S29	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	HESTER RENFROE FARM	AGRICULTURAL
150108-6	11-00396-S	I-75 (ALLIGATOR ALLEY) GUARDRAIL	1052.04	68.22	6.5%	COMPLETE	COLLIER	50	26	multiple	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
141212-3	36-03802-P	I-75 AT DANIELS PARKWAY INTERCHANGE	378.94	95.52	25.2%	COMPLETE	LEE	45	25	4, 27, 35	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
130703-17	11-01304-S	I-75 AT GOLDEN GATE PARKWAY	12.01	0.00	0.0%	COMPLETE	COLLIER	49	26	30	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 1	HIGHWAY
160524-13	11-00396-S	I-75 BRAZILIAN PEPPER REMOVAL MITIGATION PROJECT	42.06	41.77	99.3%	UNDER REVIEW	COLLIER	49	30	32	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	F D O T DISTRICT 1	GOVERNMENT
141107-18	11-00396-S	I-75 CONTRAFLOW AT COLLIER BLVD (C R 951)	3.26	0.00	0.0%	COMPLETE	COLLIER	49	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
150526-4	11-00396-S-03	I-75 MILE MARKER 63 REST AREA	59.16	31.55	53.3%	COMPLETE	COLLIER	49	32	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BIG CYPRESS NATIONAL PRESERVE	HIGHWAY
140124-10	11-00396-S-03	I-75 RECREATIONAL ACCESS SITES AND NORTH REST AREA AT M M 63	9.88	0.00	0.0%	COMPLETE	COLLIER	49	32	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
140428-10	11-00396-S	I-75 WIDENING FROM S R 951 TO GOLDEN GATE PKWY	16.55	9.53	57.6%	COMPLETE	COLLIER	49	26	29, 30, 32, 33, 34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
141031-8	11-00396-S	I-75 WIDENING FROM S R 951 TO GOLDEN GATE PKWY	191.13	60.81	31.8%	COMPLETE	COLLIER	49	26	29, 30, 32, 33, 34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
140623-18	11-00360-S-89	IBERIABANK	1.18	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	IBERIABANK	COMMERCIAL
131122-3	11-01761-P-02	IL CUORE @ MEDITTERA	3.79	3.79	100.0%	COMPLETE	LEE	48	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	L B CORTILE L L C	RESIDENTIAL
131213-6	11-00465-S-03	IMMOKALEE AGRICOM PARK PHASE 2 LOTS 11 AND 12	5.50	0.07	1.3%	COMPLETE	COLLIER	47	29	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DISTRICT SCHOOL BOARD OF COLLIER COUNTY	COMMERCIAL
140717-8	11-00731-S	IMMOKALEE MIDDLE SCHOOL	23.36	0.00	0.0%	COMPLETE	COLLIER	47	29	04	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SCHOOL BOARD OF COLLIER COUNTY	PUBLIC AND INSTITUTIONAL
131115-13	11-01737-P	IMMOKALEE RD CR 951 TO 43RD AVE N E (BASIN 4)	85.32	1.87	2.2%	COMPLETE	COLLIER	48	27	29	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
141205-17	11-00999-S	IMMOKALEE REGIONAL AIRPORT	817.58	25.45	3.1%	COMPLETE	COLLIER	46	29	34, 35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	AIRPORT RELATED FACILITIES
130718-24	11-00999-S	IMMOKALEE REGIONAL AIRPORT - RUNWAY 9-27 REHABILITATION	167.76	1.23	0.7%	COMPLETE	COLLIER	47	29	2	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	AIRPORT RELATED FACILITIES
130801-11	11-00999-S	IMMOKALEE REGIONAL AIRPORT PH 1 AND 2 (REF: A#130718-24)	175.27	15.37	8.8%	VOID	COLLIER	46	29	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	COLLIER COUNTY AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES
140725-12	11-01737-P	IMMOKALEE ROAD CHLORAMINE BOOSTER STATION	85.32	1.87	2.2%	COMPLETE	COLLIER	48	27	22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	GOVERNMENT
130930-9	11-03507-P	IMMOKALEE STORMWATER IMPROVEMENTS PHASE II - IMMOKALEE	9.35	0.00	0.0%	COMPLETE	COLLIER	46	29	32	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISIONERS	GOVERNMENT

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150720-1	11-01737-P	IMMOKALEE-COLLIER INTERSECTION IMPROVEMENTS	17.06	2.51	14.7%	COMPLETE	COLLIER	48	26	23,23,26,27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
141028-2	36-03946-P-03	IMPERIAL BONITA PLAZA (A PORTION OF LOT 5)	9.90	0.00	0.0%	COMPLETE	LEE	48	25	01	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	I B P-B B R, L L C	COMMERCIAL
160121-21	36-03946-P-03	IMPERIAL BONITA PLAZA (A PORTION OF LOT 5)	9.90	0.00	0.0%	COMPLETE	LEE	48	25	01	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	I B P-B B R L L C	OTHER
151211-2	11-00173-S-04	IMPERIAL GOLF CLUB	143.19	21.51	15.0%	COMPLETE	COLLIER	48	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	IMPERIAL GOLF CLUB, INC.	GOLF COURSE DEVELOPMENT
150706-14	11-02694-P	INFINITI NAPLES	15.22	1.56	10.3%	WITHDRAWN	COLLIER	49	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	T T OF PINE RIDGE, INC.	COMMERCIAL
140327-11	11-00360-S-74	INTERNATIONAL DESIGN	0.70	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	6001 TAYLOR L L C	INDUSTRIAL
160615-17	36-00426-S-02	ISLAND PARK	9.75	9.41	96.6%	COMPLETE	LEE	46	24	1	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	ISLAND PARK INVESTMENTS L L C	COMMERCIAL
150409-16	36-05430-P	ISLAND PARK REGIONAL MITIGATION AREA	252.29	125.99	49.9%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ENVIRONMENTAL RESTORATION
151015-11	36-05430-P	ISLAND PARK REGIONAL MITIGATION AREA	252.29	125.99	49.9%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	MITIGATION
160601-10	36-05430-P	ISLAND PARK REGIONAL MITIGATION AREA	252.29	125.99	49.9%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ENVIRONMENTAL RESTORATION
150122-2	11-00360-S	J AND C BOULEVARD OUTFALL DRAINAGE IMPROVEMENTS PHASE I I-A	1.26	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140307-24	11-00360-S	J&C BOULEVARD PHASE I I I OUTFALL IMPROVEMENTS	11.29	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISIONERS	ROADWAY
150417-20	36-00175-S	JAMAICA BAY SEWAGE TREATMENT PLANT REMOVAL	6.77	0.00	0.0%	COMPLETE	LEE	45	24	25, 36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	JAMAICA BAY ASSOCIATES L T D	COMMERCIAL
160628-10	26-00118-S	JAMERSON FARMS - FELDA S	220.74	34.00	15.4%	INITIAL REVIEW	HENDRY	45	29	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		AGRICULTURAL
141029-14	36-05198-P-06	JASONS DELI - GULFCOAST LANDINGS	1.39	0.00	0.0%	COMPLETE	LEE	45	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	WILROCK GULF COAST LANDINGS	COMMERCIAL
150721-16	36-00839-S	JETPORT COMMERCE PARKWAY - BUS STOP B S 7	0.23	0.09	41.0%	COMPLETE	LEE	45	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
160621-5	36-05136-P	JETPORT LOOP EXTENSION	0.93	0.00	0.0%	INITIAL REVIEW	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SOUTHWEST FLORIDA INVESTMENTS PROPERTY L L C	INDUSTRIAL
150331-4	36-00839-S-09	JETPORT LOT 15 - MOTORSPORTS OF FORT MYERS	5.27	0.00	0.0%	COMPLETE	LEE	45	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FISCHER FLORIDA PROPERTIES I L L C	COMMERCIAL
140414-7	26-00428-S	K BOB GROVE	15.13	0.38	2.5%	COMPLETE	HENDRY	44	29	9	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BULMAHN GROVES L L C	AGRICULTURAL
160119-24	11-03097-P	KAICASA	97.89	42.32	43.2%	COMPLETE	COLLIER	47	29	12, 13	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC	RESIDENTIAL
160415-19	11-03097-P	KAICASA	97.89	42.32	43.2%	COMPLETE	COLLIER	47	29	12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC	RESIDENTIAL
160119-22	11-01882-P	KALEA BAY (COCOHATCHEE PUD)	498.26	472.01	94.7%	NO RESPONSE	COLLIER	48	25	8	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LODGE/ABBOTT ASSOCIATES L L C	RESIDENTIAL
140327-5	11-00360-S-63	KATHYS QUALITY CLEANING	0.38	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		COMMERCIAL
141107-2	26-00148-S	K-BOB GROVE	78.45	10.34	13.2%	COMPLETE	HENDRY	43	27	29	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	K-BOB INC.	AGRICULTURAL
140620-6	11-00360-S-84	KILPATRICK WAREHOUSE/LOT 47 TRADE CTR OF NAPLES	0.64	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	DAVID LEE REALTY INC	COMMERCIAL
150311-9	36-00379-S-16	KING BRANDS WAREHOUSE EXPANSION	3.29	0.00	0.0%	COMPLETE	LEE	45	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	KING BRANDS WAREHOUSE L L C	INDUSTRIAL
140206-9	11-01140-S	L A S I P - COUNTY BARN ROAD	18.22	10.77	59.1%	COMPLETE	COLLIER	50	26	8, 17	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140303-1	11-01140-S	L A S I P - LELY MANOR BASIN WINGSOUTH AIRPARK IMPROVEMENTS	11.57	0.00	0.0%	COMPLETE	COLLIER	50	26	9, 10, 15, 16	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140825-23	11-00465-S-05	L C E C SERVICE CTR-CARPORT ADD LOTS 2-3, IMMOKALEE PHASE 1	5.05	0.00	0.0%	COMPLETE	COLLIER	47	29	2	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	L C E C INC	INDUSTRIAL
140723-5	36-01687-S-03	L W MARKETING ANNEX	0.60	0.00	0.0%	COMPLETE	LEE	48	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	H C R PROPERTIES L L C	COMMERCIAL
140314-20	26-00612-P	LA BELLE FISH FARM	185.52	92.18	49.7%	COMPLETE	HENDRY	43	29	26,27	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	WENHUA FISHERY FARM L L C	AGRICULTURAL
141010-5	11-01839-P-02	LA MORADA (F K A INDIAN HILL ESTATES)	224.54	70.75	31.5%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	W C I COMMUNITIES, L L C	RESIDENTIAL
151218-5	11-01839-P-02	LA MORADA (F K A INDIAN HILL ESTATES)	206.18	54.18	26.3%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
160518-19	11-01839-P-02	LA MORADA (F K A INDIAN HILL ESTATES)	206.18	54.18	26.3%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150415-7	11-01839-P-02	LA MORADA MULTI-FAMILY TRACTS	25.68	0.17	0.7%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES, L L C	RESIDENTIAL
140410-2	26-00080-S	LABELLE RANCH	3024.49	940.19	31.1%	COMPLETE	HENDRY	43	30	29	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	C P B PROPERTIES INC	AGRICULTURAL
140411-9	26-00080-S	LABELLE RANCH (REF: A#140410-2)	3023.76	939.73	31.1%	VOID	HENDRY	43	30	29	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	C P B PROPERTIES INC	AGRICULTURAL
151202-16	26-00080-S	LABELLE RANCHES - RESERVOIR B-12A MODIFICATION	3017.24	940.19	31.2%	NO RESPONSE	HENDRY	43	29	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	C P B PROPERTIES INC	AGRICULTURAL
140415-3	11-03553-P	LAKE TRAFFORD ROAD AND N 19TH STREET	1.83	0.00	0.0%	COMPLETE	COLLIER	46	29	32	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	OTHER
140110-1	11-01638-P	LANDMARK HOSPITALS LONG-TERM ACUTE CARE HOSPITAL AND M O B	4.36	4.25	97.6%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CREEKSIDE EAST INC	COMMERCIAL
140730-3	11-00212-S-137	LANE PARK	5.29	4.01	75.8%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION)	MOD	RADIO ROAD JOINT VENTURE	INDUSTRIAL
150413-5	11-02146-P	LANTANA (FKA VITA TUSCANA)	63.89	34.43	53.9%	COMPLETE	COLLIER	48	26	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LANTANA AT OLDE CYPRESS HOMEOWNERS ASSOCIATION INC	RESIDENTIAL
150408-7	11-01140-S	LASIP PHASE 19 B - CROWN POINTE WEIR	0.89	0.00	0.0%	COMPLETE	COLLIER	50	26	7, 18	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	OTHER
140612-4	11-00542-S	LAUREL OAK ELEMENTARY SCHOOL	68.79	4.01	5.8%	COMPLETE	COLLIER	48	26	28	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE DISTRICT SCHOOL BOARD OF COLLIER COUNTY	INSTITUTIONAL
141113-1	36-03098-P	LAUREL OAKS LOTS 31-34	0.98	0.19	19.6%	COMPLETE	LEE	47	25	5	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	WEST BAY CLUB COMMUNITY ASSOCIATION	RESIDENTIAL
150821-13	36-01303-S	LEE CO COMPLETE ST INITIATIVE TIGER GRANT 19 DANIELS PKWY	39.52	0.00	0.0%	COMPLETE	LEE	45	25	20-23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150827-18	36-08589-P	LEE CORNERS	0.02	0.00	0.0%	COMPLETE	LEE	44	26	29	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW		COMMERCIAL
150410-12	36-08417-P	LEE COUNTY COMPLETE STREETS INITIATIVE, TIGER GRANT NO. 19	12.55	0.03	0.2%	COMPLETE	LEE	46	25	9,16,17	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	RECREATIONAL
150813-1	36-01729-S	LEE COUNTY COMPLETE STREETS INITIATIVE,TIGER GRANT NO. 19	41.53	2.69	6.5%	COMPLETE	LEE	45	26	23, 24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY DEPARTMENT OF TRANSPORATION	ROADWAY
140108-16	36-00460-S-14	LEE COUNTY IND PARK LOT 2 BLOCK B	1.86	0.00	0.0%	COMPLETE	LEE	46	24	1	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	HAPPY TIMES REAL PROPERTY VENTURES L L C	INDUSTRIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
160603-20	36-00288-S	LEE HEALTH VILLAGE AT COCONUT POINT	6.28	0.00	0.0%	HOLD FOR CONC	LEE	47	25	09	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE MEMORIAL HEALTH SYSTEMS	COMMERCIAL
160125-8		LEE INDUSTRIAL PARK	38.78	0.00	0.0%	UNDER REVIEW	LEE	46	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	Y B F H REAL ESTATE L L C	INDUSTRIAL
151116-18	36-03761-P	LEELAND HEIGHTS BLVD SIDEWALK	11.54	0.00	0.0%	COMPLETE	LEE	44	27	32, 33	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
160126-7	11-03377-P	LEGACY LAKES	10.44	0.03	0.3%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC	RESIDENTIAL
160711-20	11-00212-S-96	LEMAE 3 PARCEL L LEMAE INDUSTRIAL LOTS (REF: A#011203-2)	20.00	1.00	5.0%	VOID	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		INDUSTRIAL
140428-12	11-03614-P	LIDO ISLES	24.67	23.47	95.2%	COMPLETE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	MARCO ISLAND GROUP, LLC	RESIDENTIAL
151125-6	11-03614-P	LIDO ISLES	24.03	22.93	95.4%	COMPLETE	LEE	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MARCO ISLAND GROUP L L C	RESIDENTIAL
140710-5	36-04060-P	LIFE CARE CENTER OF ESTERO	9.60	0.00	0.0%	COMPLETE	LEE	46	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	LEE COUNTY REAL ESTATE INVESTORS L L C	COMMERCIAL
140122-3	36-00288-S-02	LIGHTHOUSE BAY LAKE RESTORATION	162.42	63.59	39.1%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE HARBOUR CLUB AT LIGHTHOUSE BAY INC	RESIDENTIAL
140106-2	11-02893-P	LIVING WORD FAMILY CHURCH	37.50	16.31	43.5%	COMPLETE	COLLIER	48	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LIVING WORD FAMILY CHURCH INC	INSTITUTIONAL
150204-16	11-02893-P	LIVING WORD FAMILY CHURCH	18.39	7.06	38.4%	COMPLETE	COLLIER	48	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LIVING WORD FAMILY CHURCH, INC.	INSTITUTIONAL
140106-5	11-02893-P	LIVING WORD FAMILY CHURCH (REF: A# 140106-2)	37.50	16.31	43.5%	VOID	COLLIER	48	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION)	MOD	LIVING WORD FAMILY CHURCH INC	INSTITUTIONAL
140623-10	11-02091-P	LIVINGSTON LAKES	47.00	24.03	51.1%	COMPLETE	COLLIER	48	26	30	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LIVINGSTON LAKES CONDOMINIUM ASSOCIATION INC	RESIDENTIAL
140708-5	11-02091-P	LIVINGSTON LAKES	47.00	24.03	51.1%	COMPLETE	COLLIER	48	26	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LIVINGSTON LAKES CONDOMINIUM ASSOCIATION INC	RESIDENTIAL
151124-4		LONGVIEW CENTER	4.63	0.00	0.0%	NO RESPONSE	COLLIER	49	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	P N F ENTERPRISES L L C	COMMERCIAL
141029-8	36-00379-S-07	LOT 1 BLOCK D AIRPORT WOODS COMMERCE CENTER	2.91	1.01	34.7%	COMPLETE	LEE	45	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	10002 BAVARIA L L C	INDUSTRIAL
150325-8	36-00839-S-12	LOT 13 A - ENTERPRISE CAR RENTAL	2.13	0.10	4.5%	COMPLETE	LEE	45	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	10100 DANIELS PARKWAY- FT MYERS L L C	OFFICE BUILDING
140425-22	11-00360-S-75	LOT 155 J AND C INDUSTRIAL PARK	0.57	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	J DEB INVESTMENTS	INDUSTRIAL
160222-10	36-00839-S-04	LOT 16 JETPORT INTERSTATE COMMERCE PK JETPORT CENTER	7.90	0.00	0.0%	COMPLETE	LEE	45	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	S W COAST PROPERTIES L L C	INDUSTRIAL
150302-15	36-03908-P-14	LOT 18 ALICO COMMERCIAL PARK (NOUGHTON - DREW CIRCLE)	1.24	0.03	2.3%	COMPLETE	LEE	46	25	8	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD		INDUSTRIAL
160505-17	11-00715-S-18	LOT 2 PINE AIR LAKES UNIT SIX (NAPLES INFINITI-VOLVO)	11.35	0.12	1.1%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	T T OF LAKE SHORE INC	COMMERCIAL
140127-8	36-00833-S	LOT 25 IN THE GROVES SUBDIVISION	0.49	0.15	29.9%	COMPLETE	LEE	46	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RESIDENTIAL
150324-23	11-01553-P-07	LOT 3 - CREEKSIDE COMMERCE PARK (AESTHETIC SURGERY CENTER)	1.32	0.05	3.6%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	RANI INVESTMENTS INC	COMMERCIAL
160311-10	36-00839-S-16	LOT 33 AND 34 JETPORT INTERSTATE COMMERCE PARK	1.88	0.00	0.0%	COMPLETE	LEE	45	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	CAROL D THOMPSON REVOCABLE TRUST	INDUSTRIAL
150324-1	36-03098-P-02	LOT 43- RIVERBROOKE RUN AT WEST BAY CLUB	1.48	0.27	18.0%	COMPLETE	LEE	46	25	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RESIDENTIAL
140515-11	11-00360-S-70	LOT 46 TRADE CENTER WAY - SIGL BLDG	0.82	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SIGL INC	INDUSTRIAL
150821-3	36-00379-S-15	LOT 5 BLOCK C AIRPORT WOODS COMMERCE CENTER	1.65	0.35	20.9%	COMPLETE	LEE	45	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	CHARLES C FIELDS TRUST AND GLADYS A FIELDS TRUST	INDUSTRIAL
140826-21	11-00360-S-92	LOT 78 TRADE CENTER WAY	0.66	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D B AND K B INVESTMENTS L L C	INDUSTRIAL
131218-16	11-01314-S-03	LOT 8 SIERRA MEADOWS SUBDIVISION	6.91	6.89	99.7%	COMPLETE	COLLIER	50	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	DISCOVERY VILLAGE AT NAPLES L L C	COMMERCIAL
150327-2	36-00839-S-13	LOTS 10 AND 11 JETPORT INTERSTATE PARK	3.07	0.00	0.0%	COMPLETE	LEE	45	25	23,27	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	JETPORT COMMERCE PARTNERS L L C	INDUSTRIAL
141113-6	11-00360-S-94	LOTS 13 AND 14 TRADE CENTER OF NAPLES	1.24	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	TRADE EXECUTIVE CENTER CONDOMINIUM ASSOCIATION INC	COMMERCIAL
140616-11	11-00360-S-79	LOTS 148 & 149 - J & C INDUSTRIAL PARK	1.26	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		COMMERCIAL
150416-9	36-00839-S-03	LOTS 36 AND 37 - SHANCO INDUSTRIAL BUILDING	1.85	0.00	0.0%	COMPLETE	LEE	45	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	KLOCKE LAND COMPANY INC	INDUSTRIAL
160601-7	11-01662-P	LOTS 43-45 WHITE LAKE CORPORATE PARK - WOODSPRING SUITES	2.97	0.00	0.0%	NO RESPONSE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	GOLD COAST PREMIER PROPERTIES L L C	INDUSTRIAL
150406-8	11-00715-S-15	LOWES OF NAPLES	14.94	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LOWES HOME CENTERS L L C	COMMERCIAL
150803-15	11-01662-P-19	M V L T L L C	0.98	0.15	14.9%	COMPLETE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	M V L T L L C	COMMERCIAL
140715-15	11-00360-S-26	MADISON ELECTRIC WAREHOUSE	0.93	0.05	5.6%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		INDUSTRIAL
150813-8	36-01019-S-18	MAINLINE IND PARK - E 1/2 OF LOT 8 (TALLOWMASTERS WAREHOUSE)	1.13	0.00	0.0%	COMPLETE	LEE	46	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	TALLOWMASTERS, L L C	INDUSTRIAL
141223-22	11-03692-P	MANDALAY PLACE	7.28	7.28	100.0%	COMPLETE	COLLIER	49	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	MANDALAY PLACE, L L C	RESIDENTIAL
150916-9	11-03692-P	MANDALAY PLACE	7.28	7.28	100.0%	COMPLETE	COLLIER	49	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D R HORTON INC	RESIDENTIAL
150120-18		MANDALAY PLACE SUBDIVISION (REF: A#141223-22)	7.29	7.29	100.0%	VOID	COLLIER	49	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	MANDALAY PLACE LLC	RESIDENTIAL
140821-16	36-04603-P	MANGROVE WATERWAYS	1.51	0.24	15.7%	COMPLETE	LEE	47	25	32	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	QUINN RUELLE INC	COMMERCIAL
150202-10	36-00781-S	MANNA CHRISTIAN	14.85	13.92	93.7%	COMPLETE	LEE	47	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MANNA CHRISTIAN MISSIONS INC	RECREATIONAL
131031-14	11-02336-P-08	MAPLE RIDGE AT AVE MARIA PHASE 2	25.30	0.00	0.0%	COMPLETE	COLLIER	48	29	5	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	MAPLE RIDGE AT AVE MARIA HOA INC	RESIDENTIAL
141022-11	11-02336-P-08	MAPLE RIDGE ESTATE MODEL LOTS	6.45	0.00	0.0%	COMPLETE	COLLIER	48	29	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MAPLE RIDGE AT AVE MARIA HOA INC	RESIDENTIAL
150505-7	36-04499-P-03	MARAVU	69.41	3.89	5.6%	COMPLETE	LEE	47	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	TEX DEVELOPMENT CORPORATION	RESIDENTIAL
150921-14	36-04853-P-05	MARINA BAY (F.K.A. BOTANICA SOUTH)	272.15	36.82	13.5%	NO RESPONSE	LEE	45	25	10, 11, 14, 15	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
160401-1	36-04853-P-05	MARINA BAY PLAT THREE	27.96	0.34	1.2%	COMPLETE	LEE	45	25	10,11,14,15	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
151020-3	36-04853-P-05	MARINA BAY PLAT TWO (PARCELS C AND E)	80.84	0.00	0.0%	VOID	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
151015-4	36-04853-P-05	MARINA BAY RECREATION TRACT AND PARCELS C AND E	80.74	0.00	0.0%	COMPLETE	LEE	45	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL

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150317-8	36-01297-S	MARJAM SUPPLY COMPANY / STORAGE YARD	10.94	0.00	0.0%	COMPLETE	LEE	46	25	5	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	JESAJ FORT MYERS L L C	INDUSTRIAL
150203-5	11-01412-P	MARQUESA PLAZA	16.88	2.48	14.7%	COMPLETE	COLLIER	49	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LIVINGSTON AND PINE RIDGE L L C	OTHER
130927-9	36-00575-S-02	MARSH LANDING	61.52	16.17	26.3%	COMPLETE	LEE	47	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MARSH LANDING COMMUNITY ASSOCIATION AT ESTERO INC	ENVIRONMENTALLY SENSITIVE
131231-5	36-00575-S-02	MARSH LANDING	120.24	37.17	30.9%	VOID	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MARSH LANDING COMMUNITY ASSOCIATION AT ESTERO INC	RESIDENTIAL
131119-13	11-03198-P	MARSILEA VILLAS	10.22	10.10	98.9%	COMPLETE	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MARSILEA VILLAS I I L L C	RESIDENTIAL
140528-4	11-03198-P	MARSILEA VILLAS	10.28	10.17	98.9%	COMPLETE	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D R HORTON INC	RESIDENTIAL
160407-8	11-03198-P	MARSILEA VILLAS	10.24	10.12	98.8%	COMPLETE	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D R HORTON INC	RESIDENTIAL
140206-8	11-02603-P	MASSEY STREET OUTFALL IMPROVEMENTS	4.12	0.42	10.2%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MOCKINGBIRD CROSSING COMMUNITY ASSOCIATION INC	ROADWAY
140710-13	36-00678-S-18	MATERITA PHASE 4	183.59	132.12	72.0%	COMPLETE	LEE	45	25	01	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
160502-2	11-01344-S	MAX HASSEE COMMUNITY PARK - MONOPOLE TOWER	0.23	0.00	0.0%	NO RESPONSE	COLLIER	49	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY - FACILITIES MANAGEMENT DIVISION	COMMERCIAL
150227-1	11-01743-P	MC CABE HANGAR AT NAPLES AIRPORT AUTHORITY	1.23	0.00	0.0%	COMPLETE	COLLIER	49	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES	AIRPORT RELATED FACILITIES
150707-20	36-01871-S-11	MC DONALDS RESTAURANT - LOT 4	1.05	0.00	0.0%	COMPLETE	LEE	46	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MC DONALDS CORP	COMMERCIAL
150514-2	11-01743-P	MCCABE HANGAR PHASES 1 AND 2 AT NAPLES AIRPORT	2.27	0.00	0.0%	COMPLETE	COLLIER	49	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES AIRPORT AUTHORITIY	AIRPORT RELATED FACILITIES
150327-5	11-01367-P	MEADOWBROOK PRESERVE	40.19	25.71	64.0%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MEADOWBROOK PRESERVE L L C	RESIDENTIAL
160303-9	11-01761-P	MEDITERRA FITNESS CENTER	1.18	0.00	0.0%	COMPLETE	COLLIER	48	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE CLUB AT MEDITERRA INC	RECREATIONAL
140507-3	11-01761-P	MEDITERRA VILLAGE CENTER	23.43	0.00	0.0%	COMPLETE	COLLIER	48	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE NEW CLUB AT MEDITERRA, INC.	COMMERCIAL
150917-3	11-01536-S	MEMORIAL PATHWAY	8.36	3.41	40.8%	COMPLETE	COLLIER	48	25	20	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150921-6	11-03746-P	MEMORIAL PATHWAY ON VANDERBILT DRIVE	24.69	3.19	12.9%	COMPLETE	COLLIER	48	25		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY GOVERNMENT	GOVERNMENT
140218-9	11-01638-P	MEMORY CARE FACILITY AT CREEKSIDE EAST (TRACT 3)	6.00	1.81	30.2%	COMPLETE	COLLIER	48	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CREEKSIDE EAST INC	OTHER
141112-2	11-03669-P	MERCEDES BENZ OF BONITA SPRINGS	7.93	7.88	99.3%	COMPLETE	COLLIER	48	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL)	NEW	AUTOMOTIVE MANAGEMENT SERVICES INC	COMMERCIAL
150922-1	11-00212-S-138	MERCEDES-BENZ NAPLES PARKING ANNEX (PRODUCTION PARK BASIN 4)	2.82	0.00	0.0%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	REGENCY AUTOHAUS INC	INDUSTRIAL
150511-6	11-01735-P-04	MERIDIAN MARKET PLACE	10.19	0.00	0.0%	COMPLETE	COLLIER	48	26	07	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PINE RIDGE LIVINGSTON, L L C	COMMERCIAL
130705-9	11-01735-P-04	MERIDIAN PLACE	12.33	0.00	0.0%	COMPLETE	COLLIER	49	26	07	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT MODIFICATION)	MOD	CAMBRIDGE SQUARE/NAPLES GATEWAY MASTER ASSOCIATION	COMMERCIAL
130826-4	11-03522-P	MERIDIAN VILLAGE	11.48	10.34	90.1%	COMPLETE	COLLIER	50	25	05	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ROCK CREEK HOLDINGS L L C	COMMERCIAL
131031-13	36-01148-S	METRO PKWY EXT (SR739) DRAINAGE REVISIONS (BASINS, B,C,D)	82.07	23.90	29.1%	COMPLETE	LEE	45	25	30, 31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
140530-5	36-04749-P-02	MIDWAY EXPANSION	0.71	0.00	0.0%	COMPLETE	LEE	46	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	MIDWAY PROMENADE L L C	COMMERCIAL
150727-22	11-01521-P-02	MILANO LAKES (FKA THE LORDS WAY APARTMENTS)	24.31	2.72	11.2%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	M L LAND, L.L.C.	RESIDENTIAL
150622-21	36-05415-P	MILLENIUM CORPORATE PARK FKA AIRPORT INTERSTATE COMMERCE PRK	327.19	298.56	91.2%	COMPLETE	LEE	46	25	2, 3	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	ASSET RECOVERY X X L L C	COMMERCIAL
140516-14	36-08230-P	MIRAGE BAY LUXURY APARTMENTS	3.73	0.00	0.0%	COMPLETE	LEE	45	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	RICH METRO GROUP L L C	RESIDENTIAL
150914-23	36-08230-P	MIRAGE BAY LUXURY APARTMENTS	3.71	0.00	0.0%	COMPLETE	LEE	45	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	RICH METRO GROUP L L C	RESIDENTIAL
160122-14	36-03568-P	MIROMAR LAKES BOAT STORAGE FACILITY	2.04	0.00	0.0%	NO RESPONSE	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MIROMAR LAKES L L C	RECREATIONAL
140508-8	36-03568-P	MIROMAR LAKES SOUTH ENTRANCE	9.64	4.49	46.6%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MIROMAR LAKES, L L C	ROADWAY
131008-4	11-02603-P	MOCKINGBIRD CROSSING	108.52	61.91	57.0%	WITHDRAWN	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D R HORTON	RESIDENTIAL
141015-8	11-02603-P	MOCKINGBIRD CROSSING	108.52	61.91	57.0%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D R HORTON I N C	RESIDENTIAL
141029-1	11-02603-P	MOCKINGBIRD CROSSING	110.22	61.96	56.2%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	D R HORTON I N C	RESIDENTIAL
150831-15	11-02603-P	MOCKINGBIRD CROSSING	109.11	61.69	56.5%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D R HORTON INC	RESIDENTIAL
151106-15	11-02603-P	MOCKINGBIRD CROSSING	109.11	61.69	56.5%	VOID	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D R HORTON INC	RESIDENTIAL
160119-20	11-02603-P	MOCKINGBIRD CROSSING	109.11	61.69	56.5%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	D R HORTON INC	RESIDENTIAL
150108-2	11-00186-S	MOORINGS PARK	83.96	8.10	9.6%	COMPLETE	COLLIER	49	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE MOORINGS INC	RESIDENTIAL
160606-2	11-00186-S	MOORINGS PARK	83.96	8.10	9.6%	NO RESPONSE	COLLIER	49	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE MOORINGS INC	COMMERCIAL
150127-10	11-00186-S	MOORINGS PARK BOX CULVERT	12.71	0.00	0.0%	WITHDRAWN	COLLIER	49	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	Y T G FLORIDA L L C (D E)	RESIDENTIAL
150127-7	11-00186-S	MOORINGS PARK BOX CULVERT	12.71	0.00	0.0%	WITHDRAWN	COLLIER	49	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	T P A GROUP	RESIDENTIAL
150129-11	11-00186-S	MOORINGS PARK BUILDING L M AND N EXPANSION	12.71	0.00	0.0%	WITHDRAWN	COLLIER	49	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	Y T G FLORIDA L L (D E)	RESIDENTIAL
150528-8	11-00186-S	MOORINGS PARK GARDEN APARTMENTS	7.92	0.28	3.5%	COMPLETE	COLLIER	49	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE MOORINGS INCORPORATED	RESIDENTIAL
150624-13	11-01632-P	MURPHY U S A	0.78	0.00	0.0%	COMPLETE	COLLIER	48	26	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WAL-MART STORES EAST, L P	COMMERCIAL
140911-7	11-02242-P-03	MY OTHER PLACE 2	1.43	0.00	0.0%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	NORTH NAPLES GOLF RANGE, INC.	COMMERCIAL
160513-8	11-02242-P-04	MY OTHER PLACE 3	0.53	0.00	0.0%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MY OTHER PLACE I I I, L L C	INDUSTRIAL
141117-10	11-02234-P-08	N C H HEALTHCARE- NORTHEAST	3.36	0.12	3.6%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	NAPLES COMMUNITY HOSPITAL, INC.	OTHER
141118-16	11-02234-P-09	N C H HEALTHCARE- TEMPORARY OFFICE	1.01	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FIFTH THIRD BANK	COMMERCIAL
130927-8	11-01743-P	NAA MAINTENANCE FACILITY EXPANSION	2.82	0.00	0.0%	COMPLETE	COLLIER	49	25	2	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	CITY OF NAPLES AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
160511-3	11-00212-S	NAPLES ACURA	2.49	0.00	0.0%	UNDER REVIEW	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	T T OF AIRPORT INC	COMMERCIAL
160525-23	11-01743-P	NAPLES AIRPORT OBSERVATION PLATFORM RESTROOM	0.02	0.00	0.0%	COMPLETE	COLLIER	50	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES AIRPORT AUTHORITY ATTN: CHRISTOPHER ROZANSKY	AIRPORT RELATED FACILITIES
160229-21	11-01743-P	NAPLES BAKER PARK BRIDGE EASTERN LANDING AND BOARDWALK	0.12	0.07	55.2%	NO RESPONSE	COLLIER	50	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL)	NEW	CITY OF NAPLES	RECREATIONAL
160322-20	11-00008-S	NAPLES BATH AND TENNIS CLUB (LAKES 2-3 INTERCONNECT)	153.19	34.35	22.4%	COMPLETE	COLLIER	49	25	13,14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NAPLES BATH AND TENNIS CLUB COMMONS AREA INC	RECREATIONAL
160512-4	11-03774-P	NAPLES BEACH AND GOLF CLUB	1.58	0.00	0.0%	COMPLETE	COLLIER	49	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NAPLES GOLF AND BEACH CLUB INC	GOLF COURSE DEVELOPMENT
151112-6	11-03774-P	NAPLES BEACH HOTEL AND GOLF COURSE	90.22	5.80	6.4%	COMPLETE	COLLIER	49	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	NAPLES GOLF AND BEACH CLUB, INC.	GOLF COURSE DEVELOPMENT
131024-7	11-00806-S-04	NAPLES GRAND COUNTRY CLUB EIGHTEEN HOLE GOLF COURSE	165.31	14.40	8.7%	COMPLETE	COLLIER	49	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	N W N G GOLF L L C	GOLF COURSE DEVELOPMENT
141209-6	11-00806-S-04	NAPLES GRANDE CLUBHOUSE	4.91	1.34	27.4%	COMPLETE	COLLIER	49	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	N W N G GOLF L L C	GOLF COURSE DEVELOPMENT
151130-9	11-01101-S	NAPLES HERITAGE TENNIS CENTER	8.21	0.07	0.9%	NO RESPONSE	COLLIER	50	26	3, 4, 9, 10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	NAPLES HERITAGE GOLF AND COUNTRY CLUB INC	RECREATIONAL
141117-12	11-01743-P	NAPLES MUNICIPAL AIRPORT GREENWAY TRAILS/PATHWAY	0.70	0.16	22.2%	COMPLETE	COLLIER	0	0		ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES
151103-21	11-01743-P	NAPLES MUNICIPAL AIRPORT MASTER DRAINAGE PLAN UPDATE 2015	724.81	84.47	11.7%	NO RESPONSE	COLLIER	50	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION)	MOD	CITY OF NAPLES AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES
140507-19	11-01743-P	NAPLES MUNICIPAL AIRPORT WEST QUAD POND	11.08	2.23	20.1%	COMPLETE	COLLIER	50	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CITY OF NAPLES AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES
150408-8	11-00212-S-106	NAPLES PRODUCTION PARK (4774 MARKET AVENUE)	0.53	0.00	0.0%	COMPLETE	COLLIER	49	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	171 COMM, L L C	COMMERCIAL
140529-2	11-02279-P	NATIVE POND RESTORATION ON THE FLORIDA PANTHER N W R	4.90	4.90	100.0%	COMPLETE	COLLIER	49	29	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	U S A - DEPARTMENT OF INTERIOR	ENVIRONMENTAL RESTORATION
140312-11	36-02026-S-02	NATURA BONITA AT FAIRWAYS	27.17	4.03	14.8%	COMPLETE	LEE	47	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SABER BONITA L L C	RESIDENTIAL
150213-10	11-02061-P	NORTH NAPLES STORAGE	15.25	4.02	26.4%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	EAST STORESMART NAPLES TWO L L C	COMMERCIAL
141030-25	36-04585-P	NORTH BAY VILLAGE - PARKING	23.39	4.14	17.7%	COMPLETE	LEE	47	25	28	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NORTH BAY VILLAGE OF BONITA SPRINGS LAND	COMMERCIAL
130927-2	11-03508-P	NORTH GOLDEN GATE ESTATES ROADWAY CULVERTS	29126.13	16769.28	57.6%	COMPLETE	COLLIER	48	28	5-8, 17-20, 29-32	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	OTHER
150512-6	26-00522-S-02	NORTH HILL GRADE	1471.38	127.65	8.7%	COMPLETE	HENDRY	45	33	3-10	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
130917-25	11-01384-P	NORTH NAPLES HOSPITAL EMERGENCY DEPARTMENT	26.04	7.00	26.9%	COMPLETE	COLLIER	48	25	22	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	NAPLES COMMUNITY HOSPITAL	INSTITUTIONAL
141029-15	11-02061-P	NORTH NAPLES STORAGE	15.25	4.02	26.4%	COMPLETE	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	OLD 41 INDUSTRIAL L L C	COMMERCIAL
151103-12	11-02061-P	NORTH NAPLES STORAGE (REF: A#151103-12)	15.25	4.02	26.4%	VOID	COLLIER	48	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GERMAIN REAL ESTATE COMPANY L L C	COMMERCIAL
150715-14	11-01474-P-02	NORTH NAPLES UNITED METHODIST CHURCH	23.39	5.03	21.5%	COMPLETE	COLLIER	49	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NORTH NAPLES UNITED METHODIST CHURCH INC	INSTITUTIONAL
131120-1	11-01543-P-09	NORTHBROOKE MEDICAL	0.91	0.00	0.0%	COMPLETE	COLLIER	48	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	NINIGRET PARK DEVELOPMENT L L C	COMMERCIAL
140819-11	36-07384-P	OAK CREEK RESTORATION DREDGE PHASES 1 -5	9.63	2.77	28.8%	COMPLETE	LEE	47	25	34, 35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF BONITA SPRINGS (ATTN: MATT FEENEY)	ENVIRONMENTAL RESTORATION
140819-12	36-07384-P	OAK CREEK RESTORATION DREDGE, PHASES 1 -5	9.63	3.29	34.2%	COMPLETE	LEE	47	25	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	CITY OF BONITA SPRINGS	ENVIRONMENTAL RESTORATION
150519-16	11-00065-S	OAK LAKE SANCTUARY AT PELICAN BAY	2.11	2.00	95.1%	COMPLETE	COLLIER	49	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PELICAN BAY SERVICES DISTRICT	RESIDENTIAL
140528-6	36-04817-P	OAK RIDGE SUBDIVISION	7.78	0.00	0.0%	COMPLETE	LEE	47	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BLUE MOUNTAIN PROPERTIES, L L C	RESIDENTIAL
140512-10	36-04817-P	OAK RIDGE SUBDIVISION (REF: A# 140528-6)	8.30	0.00	0.0%	VOID	LEE	47	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MC KEE ENGINEERING CONSULTANTS, INC	RESIDENTIAL
140904-2	36-08291-P	OAKS OF ESTERO	10.17	9.53	93.8%	COMPLETE	LEE	46	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	NEAL COMMUNITIES OF SOUTHWEST FLORIDA L L C	RESIDENTIAL
150325-2	36-08291-P	OAKS OF ESTERO	10.17	9.53	93.8%	COMPLETE	LEE	46	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PALMS OF ESTERO L L C	RESIDENTIAL
130718-23	11-02135-P	OFF-ROAD VEHICLE TRAIL STABILIZATION	104.65	84.11	80.4%	COMPLETE	COLLIER	49	30		ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	UNITED STATES OF AMERICA C/ O NATIONAL PARK SERVIC	GOVERNMENT
150306-12	11-01745-P	OIL WELL ROAD 29-ACRES MITIGATION AREA	30.48	30.48	100.0%	COMPLETE	COLLIER	48	29	7	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	MITIGATION
160606-25	11-01745-P	OIL WELL ROAD SEGMENT 3	82.29	17.37	21.1%	COMPLETE	COLLIER	48	28	14-17 & 20-23	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
150210-6	11-01686-P	OLD COLLIER GOLF COURSE	358.09	194.51	54.3%	COMPLETE	COLLIER	48	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	OLD COLLIER GOLF CLUB INC.	GOLF COURSE DEVELOPMENT
131223-7	11-00898-S	OLDE FLORIDA GOLF CLUB	555.32	361.78	65.1%	COMPLETE	COLLIER	48	27	31	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	OLDE FLORIDA GOLF CLUB, INC.	GOLF COURSE DEVELOPMENT
150109-21	11-00898-S	OLDE FLORIDA GOLF CLUB WETLAND IMPACT	0.06	0.00	0.0%	COMPLETE	COLLIER	48	27	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	OLDE FLORIDA GOLF CLUB I N C	GOLF COURSE DEVELOPMENT
141031-11	11-02432-P	ORANGE BLOSSOM RANCH	510.75	24.15	4.7%	COMPLETE	COLLIER	48	27	13	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	R P ORANGE BLOSSOM OWNER, L L C	RESIDENTIAL
141231-40	11-02432-P	ORANGE BLOSSOM RANCH	90.70	14.17	15.6%	COMPLETE	COLLIER	48	27	13, 14, 24	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	BRYAN PAUL CITRUS INC	RESIDENTIAL
140825-17	26-00430-S-02	ORANGE HAMMOCK GROVES	524.75	90.49	17.2%	COMPLETE	HENDRY	45	28	25,26,36	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	ORANGE HAMMOCK GROVES L L P	AGRICULTURAL
150326-4	11-00794-S	ORANGE TREE SHERIFFS SUBSTATION	5.91	0.12	2.1%	COMPLETE	COLLIER	48	27	11, 14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	PUBLIC AND INSTITUTIONAL
140424-13	11-03571-P	ORCHID RUN APARTMENTS	21.59	1.17	5.4%	COMPLETE	COLLIER	49	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	SEA INVESTMENTS, L L C	RESIDENTIAL
160707-3	11-03571-P	ORCHID RUN APARTMENTS	21.59	1.17	5.4%	COMPLETE	COLLIER	49	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ORCHID RUN APARTMENTS L L C	RESIDENTIAL
150916-17	11-03738-P	ORCHID RUN WATER MAIN EXTENSION	2.30	0.23	10.2%	COMPLETE	COLLIER	49	25	36	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	CITY OF NAPLES	ROADWAY
150722-1	36-04886-P	OSPREY COVE - KORESHAN CONSERVATION AREA	74.22	49.65	66.9%	COMPLETE	LEE	46	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	KORESHAN CONSERVATION AREA INC	COMMERCIAL
151013-11	11-03748-P	OUR LADY OF GUADALUPE	8.93	0.00	0.0%	COMPLETE	COLLIER	47	29	4	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	DIOCESE OF VENICE	INSTITUTIONAL
150727-25	36-02153-S	OUR LADY OF LIGHT CATHOLIC COMMUNITY CHURCH	14.49	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	DIOCESE OF VENICE	INSTITUTIONAL
140422-11	36-03831-P-07	P D Q - GULF COAST TOWN CENTER	1.14	0.00	0.0%	COMPLETE	LEE	46	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	J G GULF COAST CENTER L L C	COMMERCIAL
151019-14	36-03831-P-07	P D Q GULF COAST TOWN CENTER	1.14	0.00	0.0%	COMPLETE	LEE	46	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	C M K FORT MYERS L L C	COMMERCIAL
140619-15	11-01545-P	P F HOLDING	1.26	0.00	0.0%	COMPLETE	COLLIER	48	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	P F HOLDINGS F L L L C	COMMERCIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
140303-16	11-00360-S-64	P V A OFFICE BUILDING	2.24	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	P V A PROPERTIES L L P	COMMERCIAL
141013-24	11-00704-S	PACIFIC LAND COMPANY INDUSTRIAL PARK	65.09	2.04	3.1%	COMPLETE	COLLIER	47	29	2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ENGLISH BROTHERS PARTNERSHIP	INDUSTRIAL
140113-7	11-00420-S-04	PALAZZO AT NAPLES (FKA PALAZZO VILLAGE)	21.70	0.00	0.0%	COMPLETE	COLLIER	48	26	20	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	WESTBURY QUAIL GARDENS L L C	RESIDENTIAL
150223-19	11-00420-S-04	PALAZZO AT NAPLES (FKA PALAZZO VILLAGE)	21.70	0.00	0.0%	COMPLETE	COLLIER	48	26	20	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	TOLL FL I I I LIMITED PARTNERSHIP	RESIDENTIAL
140312-6	11-00420-S-04	PALAZZO VILLAGE REF: 140113-7	21.70	0.00	0.0%	VOID	COLLIER	48	26	20	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	WESTBURY QUAIL GARDENS L L C	RESIDENTIAL
151026-12	36-00326-S	PAN TERRA HOLDINGS	534.61	29.51	5.5%	COMPLETE	LEE	46	27	32	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PAN TERRA HOLDINGS L T D	AGRICULTURAL
151026-21	36-00327-S	PAN TERRA HOLDINGS	908.30	102.20	11.3%	COMPLETE	LEE	46	27	32	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PAN TERRA HOLDINGS L T D	AGRICULTURAL
150116-1	36-06211-P-12	PANERA BAKERY CAFE - UNIVERSITY PLAZA	1.24	1.24	100.0%	COMPLETE	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	VAN UNIVERSITY PLAZA L L C	COMMERCIAL
151006-18	36-06211-P-12	PANERA BAKERY CAFE UNIVERSITY PLAZA	1.24	1.24	100.0%	COMPLETE	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	F S S R HOLDING COMPANY L L C	COMMERCIAL
151217-7	11-00002-M	PANTHER ISLAND MITIGATION BANK EXPANSION	4289.34	3402.49	79.3%	NO RESPONSE	COLLIER	47	27	3, 4, 10, 19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SOUTHWEST FLORIDA WETLANDS JOINT VENTURE	MITIGATION
141203-12	36-08311-P	PARADISE ROAD SIDEWALK ADDITION	4.96	0.10	2.0%	COMPLETE	LEE	47	25	14, 23	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	CITY OF BONITA SPRINGS	RECREATIONAL
131024-5	36-05518-P-05	PARCEL C AT ALICO LAKES	1.03	0.48	46.4%	COMPLETE	LEE	46	25	2, 3	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	VAN MF ALICO LAKES L LC	COMMERCIAL
150706-20	36-05518-P-05	PARCEL C AT ALICO LAKES	1.03	0.48	46.4%	COMPLETE	LEE	46	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ORIONLS L L C	COMMERCIAL
150212-22		PARK SHORE SHOPPING CENTER	22.25	0.00	0.0%	WITHDRAWN	COLLIER	0	0		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	BRIXMOR PARK SHORE S C L L C	COMMERCIAL
151207-18	11-02231-P	PARKLANDS COLLIER	971.62	659.83	67.9%	COMPLETE	COLLIER	48	26	9,12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	PARKLANDS ASSOCIATES I L L L P	RESIDENTIAL
140121-5	36-00288-S-28	PEBBLE POINTE AT THE BROOKS	38.06	8.23	21.6%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PEBBLE POINTE COMMUNITY ASSN INC	RESIDENTIAL
140826-16	36-00288-S-28	PEBBLE POINTE AT THE BROOKS	38.06	8.23	21.6%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PEBBLE POINTE COMMUNITY ASSN INC	RESIDENTIAL
151221-12	11-00065-S	PELICAN BAY COMMONS - FOUNDATION BUILDING	9.41	2.83	30.1%	COMPLETE	COLLIER	49	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (ERC COMPLIANCE LETTER MOD)	MOD	PELICAN BAY FOUNDATION INC	RESIDENTIAL
140331-16	11-00065-S	PELICAN BAY COMMONS PARKING LOT MOD AND TRAM STATION	9.41	2.83	30.1%	COMPLETE	COLLIER	49	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	PELICAN BAY FOUNDATION INC	PUBLIC AND INSTITUTIONAL
140221-10	11-00065-S	PELICAN BAY NORTH BERM AND SWALE MAINTENANCE	7.19	6.04	84.0%	COMPLETE	COLLIER	49	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PELICAN BAY SERVICES DIVISION	RECREATIONAL
140425-26	11-00065-S	PELICAN BAY OF NAPLES FOUNDATION BOARDWALK MANGROVE TRIMMING	1.37	1.37	100.0%	WITHDRAWN	COLLIER	49	25	4	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	TURRELL HALL AND ASSOCIATES, INC	RECREATIONAL
140416-10	11-00065-S	PELICAN BAY SERVICES DIVISION SUMMIT BROADBAND HUB	12.21	1.34	11.0%	COMPLETE	COLLIER	49	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PELICAN BAY SERVICES DIVISION	RECREATIONAL
140812-18	11-00065-S-36	PELICAN BAY SERVICES M P S 109	1.55	0.00	0.0%	COMPLETE	COLLIER	49	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	INDUSTRIAL/UTILITIES
140312-14	36-01620-S	PELICAN COLONY ADDITIONAL 9 HOLE GOLF COURSE	98.57	35.60	36.1%	COMPLETE	LEE	47	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	W C I COMMUNITIES L L C	GOLF COURSE DEVELOPMENT
140702-12	11-01121-S-13	PELICAN MARSH COMMUNITY CENTER - BOCCE COURT ADDITION	5.62	0.00	0.0%	COMPLETE	COLLIER	48	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE FOUNDATION OF PELICAN MARSH INC	RECREATIONAL
150120-21		PELICAN MARSH EAST	34.25	33.90	99.0%	WITHDRAWN	COLLIER	48	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	W C I COMMUNITIES, L L C	RESIDENTIAL
150604-14	11-03702-P	PELICAN MARSH EAST	34.41	33.78	98.2%	NO RESPONSE	COLLIER	48	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	W C I COMMUNITIES L L C	RESIDENTIAL
150626-4	11-01121-S-11	PELICAN MARSH PHASE 4 ECKERD @ VANDERBILT GALLERIA PARCEL 1	1.50	0.00	0.0%	COMPLETE	COLLIER	48	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	J F N 2375 L L C	COMMERCIAL
140815-12	36-00678-S-18	PELICAN PRESERVE NINE HOLES	845.83	373.03	44.1%	COMPLETE	LEE	45	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WCI COMMUNITIES L.L.C.	RESIDENTIAL
141031-10	36-00678-S-18	PELICAN PRESERVE NINE HOLES	28.36	17.36	61.2%	COMPLETE	LEE	45	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
140102-8	36-00678-S-18	PELICAN PRESERVE NINE HOLES (BASIN 15)	28.36	17.36	61.2%	COMPLETE	LEE	45	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150710-2	36-00678-S-18	PELICAN PRESERVE NINE HOLES (BASINS 12, 14, 15 & 15A)	232.15	145.86	62.8%	COMPLETE	LEE	45	25	1,12	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	W C I COMMUNITIES LLC	RESIDENTIAL
131101-6	36-00678-S-18	PELICAN PRESERVE-MATERITA PHASE 3	114.13	65.53	57.4%	COMPLETE	LEE	45	25	01	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150424-6	36-02469-S	PELICANS NEST RECLAIMED WATER MAIN EXTENSION	3.05	0.03	1.0%	COMPLETE	LEE	47	25	20	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PELICANS NEST GOLF CLUB INC	GOLF COURSE DEVELOPMENT
150305-15	11-03679-P	PEPPER RANCH PRESERVE MOUNTAIN BIKE TRAILS	144.20	20.55	14.3%	COMPLETE	COLLIER	46	28	28	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISIONERS	ENVIRONMENTALLY SENSITIVE
140108-24	36-02292-S	PEPPERLAND	644.30	67.63	10.5%	COMPLETE	LEE	46	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PEPPERLAND L L C (D/B/A PEPPERLAND HOLDINGS L L C)	AGRICULTURAL
160520-30	36-02292-S	PEPPERLAND	644.30	67.76	10.5%	NO RESPONSE	LEE	46	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PEPPERLAND L L C	RESIDENTIAL
160614-22		PEZZETTINO DI CIELO	17.52	0.00	0.0%	NO RESPONSE	COLLIER	48	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	DISTINCTIVE RESIDENTIAL DEVELOPMENT AT LIVINGSTON	RESIDENTIAL
130722-5	36-05136-P-08	PINBOYZ (LOT S 108.53 OF G-2, LOT G-3 & LOT N 87 OF G-4)	4.10	0.00	0.0%	COMPLETE	LEE	45	25	26	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT MODIFICATION)	MOD	PINBOYZ L L C	COMMERCIAL
131220-8	11-00715-S-17	PINE AIR LAKES (DICKS SPORTING GOODS NAPLES)	19.59	6.82	34.8%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	U P DEVELOPMENT CORPORATION L L C	COMMERCIAL
150414-1	11-00715-S-17	PINE AIR LAKES (OUTPARCEL 1) - ALDI NAPLES	1.54	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	U P DEVELOPMENT NAPLES DICKS, L L C	COMMERCIAL
151007-10	11-03240-P	PINECREST ELEMENTARY SIDEWALKS	44.08	0.00	0.0%	COMPLETE	COLLIER	47	29	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY WITHIN RESIDENTIAL
150330-15	36-08425-P	PINELAND PRESERVE	17.46	10.34	59.2%	COMPLETE	LEE	46	25	20	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	NEAL COMMUNITIES OF SOUTHWEST FLORIDA, L L C	RESIDENTIAL
140203-20	11-03123-P	PINES COURSE FRONT NINE IMPROVEMENTS	357.23	63.71	17.8%	COMPLETE	COLLIER	49	25	14 ,23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ROYAL POINCIANA GOLF CLUB INC	GOLF COURSE DEVELOPMENT
150430-22	36-00317-S-02	PIZZA HUT RESTAURANT- SPRINGS PLAZA	0.98	0.00	0.0%	WITHDRAWN	LEE	48	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	28245 TAMIAMI L L C	COMMERCIAL
131209-6	11-00858-S	POINCIANA ELEMENTARY SCHOOL	17.38	0.00	0.0%	COMPLETE	COLLIER	49	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	DISTRICT SCHOOL BOARD OF COLLIER COUNTY	INSTITUTIONAL
150427-3	26-00539-S	POINT OF CYPRESS	2416.37	378.39	15.7%	COMPLETE	HENDRY	47	32	1, 2, 11, 12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		AGRICULTURAL
150427-12	36-08384-P	POND FILL	1.19	0.18	15.0%	COMPLETE	LEE	46	24	34	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		RESIDENTIAL
140806-12	36-01620-S-09	PONZA	5.30	0.00	0.0%	VOID	LEE	47	25	8	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D R HORTON INC	RESIDENTIAL
151230-14	36-03568-P-06	POSITANO AT MIROMAR LAKES	3.58	0.01	0.2%	COMPLETE	LEE	46	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	POSITANO INVESTMENT OF S W F L, L L C	RESIDENTIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
141118-2	11-00651-S-04	PREMIER AUTO SUITES	16.34	1.94	11.9%	COMPLETE	COLLIER	49	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PREMIER AUTO SUITES OF NAPLES, L L C	COMMERCIAL
150121-12	26-00126-S	PRIDE CITRUS DEVELOPMENT	2165.84	206.19	9.5%	COMPLETE	HENDRY	48	31	16-21	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUS	AGRICULTURAL
140313-5	11-03550-P	PROPOSED PALM RIVER PARK (PIPER BOULEVARD)	11.85	5.05	42.6%	COMPLETE	COLLIER	48	25	23	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140211-15	11-03537-P	PROPOSED SIDEWALK IMPROVEMENTS ON NEW MARKET ROAD	26.46	0.54	2.0%	COMPLETE	COLLIER	47	29	21, 22	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140527-10	11-00737-S-08	PROSCAN MEDICAL BUILDING	1.02	0.00	0.0%	COMPLETE	COLLIER	48	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	M P O PROPERTIES CROSSPOINTE, L L C	COMMERCIAL
151113-18	36-03084-P	PUBLIX 604 SHOPPES AT PELICAN LANDING	13.29	0.00	0.0%	WITHDRAWN	LEE	47	25	16	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	REAL SUB L L C 604	COMMERCIAL
140724-4	36-03084-P-02	PUBLIX NO 604 - SHOPPES AT PELICAN LANDING	13.29	0.00	0.0%	COMPLETE	LEE	47	25	16	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	REAL SUB L L C	COMMERCIAL
150820-1	11-00418-S-06	PUBLIX ORANGETREE	9.98	0.00	0.0%	COMPLETE	COLLIER	48	27	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PUBLIX SUPER MARKETS, INC	COMMERCIAL
150917-5	11-00736-S	PYLES RESIDENCE - LOT 20	2.24	0.74	32.8%	COMPLETE	COLLIER	48	27	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RESIDENTIAL
150129-12	11-00768-S	QUAIL WEST	1152.81	312.69	27.1%	COMPLETE	COLLIER	48	26	5, 7, 8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	QUAIL WEST FOUNDATION INC	RESIDENTIAL
140102-9	11-00768-S	QUAIL WEST HUFF BULKHEAD	0.03	0.00	0.0%	COMPLETE	COLLIER	48	26	8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	QUAIL WEST FOUNDATION INC	OTHER
140604-2	11-02234-P	QUARRY PHASE 7	7.75	0.02	0.3%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CENTEX HOMES	RESIDENTIAL
140812-11	11-02234-P	QUARRY PHASE 7	0.47	0.45	95.8%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CENTEX HOMES	RESIDENTIAL
160628-7	26-00412-S	QUEEN FELDA GROVE	37.39	5.35	14.3%	INITIAL REVIEW	HENDRY	45	29	34, 35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MC KINNON CORPORATION	AGRICULTURAL
151002-21	36-00326-S	R L F - R S AND SON GROVE (F/K/A SCHOENBRUN FARMS GROVE 2)	534.61	29.51	5.5%	COMPLETE	LEE	46	27	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	R L F CORKSCREW HOLDINGS L L C	AGRICULTURAL
141008-5	36-04678-P	RACE TRAC AT ARBORWOOD	1.92	0.00	0.0%	WITHDRAWN	LEE	45	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	RACETRAC PETROLEUM INC	COMMERCIAL
140902-23	36-04678-P-03	RACETRAC AT ARBORWOOD	1.92	0.00	0.0%	COMPLETE	LEE	45	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	RACETRAC PETROLEUM INC	COMMERCIAL
151102-18	11-02234-P-12	RACETRAC AT BELLAIRE BAY	1.68	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DEL LAGO VENTURES INC	COMMERCIAL
150602-7	36-05329-P-02	RACETRAC AT POWERS COURT	2.05	0.00	0.0%	COMPLETE	LEE	45	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DEL LAGO VENTURES INC	COMMERCIAL
140702-2	11-01314-S-04	RACETRAC AT RATTLESNAKE HAMMOCK	1.97	1.96	99.5%	COMPLETE	COLLIER	50	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	RACETRAC PETROLEUM, INC.	COMMERCIAL
150310-14	11-01314-S-04	RACETRAC AT RATTLESNAKE HAMMOCK - SIERRA MEADOWS LOTS 3 & 4	1.97	1.96	99.5%	COMPLETE	COLLIER	50	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	RACETRAC PETROLEUM INC	COMMERCIAL
160309-1	36-02664-S-02	RACETRAC AT SIX MILE CYPRESS	1.70	0.00	0.0%	COMPLETE	LEE	45	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	RACETRAC PETROLEUM INC	COMMERCIAL
130716-3	36-03930-P-02	RACETRAC ESTERO	10.02	9.14	91.2%	COMPLETE	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	NEW	ESTERO COMMONS PROPERTY OWNERS ASSOCIATION INC	COMMERCIAL
150310-17	11-00218-S-07	RADIATION THERAPY REGIONAL CENTER	1.96	0.01	0.3%	COMPLETE	COLLIER	49	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	COMMONAGE CORPORATION	COMMERCIAL
151223-5	11-02492-P	RAFFIA PRESERVE	184.35	177.80	96.5%	NO RESPONSE	COLLIER	48	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WCI COMMUNITIES, LLC	RESIDENTIAL
140124-2	11-02492-P	RAFFIA PRESERVE CLUBHOUSE SITE	2.63	2.63	100.0%	COMPLETE	COLLIER	48	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	RAFFIA PRESERVE MASTER ASSOCIATION INC	RESIDENTIAL
141014-9	11-01042-S-02	RAILHEAD CROSSING	2.49	2.49	100.0%	COMPLETE	COLLIER	48	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	OLD 41 P H X, L L C	INDUSTRIAL
150401-13	11-03312-P-04	RATTLESNAKE HAMMOCK ROAD PHASE 2	11.25	1.86	16.6%	COMPLETE	COLLIER	50	26	14, 23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES L L C	RESIDENTIAL
160627-19	11-01314-S	RATTLESNAKE HAMMOCK SELF-STORAGE	2.02	2.02	100.0%	INITIAL REVIEW	COLLIER	50	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	JOHNSON DEVELOPMENT ASSOCIATES INC	COMMERCIAL
151203-17	36-03568-P-02	RAVENNA AT MIROMAR LAKES	13.83	4.12	29.8%	COMPLETE	LEE	46	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	T M CONDOS L L C	RESIDENTIAL
151104-8	36-04507-P-02	REFLECTION ISLES	74.37	63.70	85.7%	COMPLETE	LEE	45	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LENNAR HOMES L L C	RESIDENTIAL
131119-1	36-03735-P-02	RENAISSANCE CENTER PARCEL A	2.11	0.00	0.0%	COMPLETE	LEE	47	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MUSCA PROPERTIES L L C	COMMERCIAL
130903-10	36-07333-P	RESERVE AT SILVERSTONE	194.73	0.53	0.3%	WITHDRAWN	LEE	48	26	2	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	A C F 10 - A BONITA L L C	AGRICULTURAL
140806-11	36-07333-P	RESERVE AT SILVERSTONE TEMPORARY AGRICULTURAL ACTIVITY	347.04	39.07	11.3%	COMPLETE	LEE	48	26	02	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	A C F 10-A BONITA L L C	RESIDENTIAL
151013-17	36-07333-P	RESERVE AT SILVERSTONE TEMPORARY AGRICULTURAL ACTIVITY	325.17	19.26	5.9%	COMPLETE	LEE	48	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BONITA SPRINGS ASSOCIATES I L L L P	RESIDENTIAL
130903-13	36-04234-P-04	RESERVE OF SILVERSTONE	325.17	19.26	5.9%	WITHDRAWN	LEE	48	26	2	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	A C F 10 - A BONITA L L C	RESIDENTIAL
150918-18	36-04234-P-04	RESERVE OF SILVERSTONE	325.17	19.26	5.9%	COMPLETE	LEE	48	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BONITA SPRINGS ASSOCIATES I L L L P	RESIDENTIAL
151207-19	36-04234-P-04	RESERVE OF SILVERSTONE	325.17	19.26	5.9%	COMPLETE	LEE	48	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	A C F 10 A BONITA L L C	RESIDENTIAL
151012-7	36-08510-P	RESTAURANT DEPOT OF FORT MYERS	7.47	0.00	0.0%	COMPLETE	LEE	46	25	07	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	J M D H REAL ESTATE OF FORT MYERS, L.L.C.	COMMERCIAL
140429-6	36-06211-P-08	RETAIL DEVELOPMENT - UNIVERSITY PLAZA TRACT 1	1.08	1.08	100.0%	COMPLETE	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	A I K GULF COAST L L C	COMMERCIAL
160426-14	11-03808-P	RICHMOND PARK	16.41	11.30	68.8%	UNDER REVIEW	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	NEAL COMMUNITIES OF S W F L	RESIDENTIAL
140722-8	36-01174-S	RIGHT TURN LANE ON ESTERO PARKWAY AT THREE OAKS PARKWAY	29.42	0.57	1.9%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
130702-4	11-02055-P	RIVERSTONE (FORMERLY SATURNIA FALLS)	637.01	292.53	45.9%	COMPLETE	COLLIER	48	26	16	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT MODIFICATION)	MOD	G L HOMES OF NAPLES ASSOC. I I, L T D	RESIDENTIAL
140220-10	36-03739-P	RIVERVIEW CENTER	23.50	0.05	0.2%	COMPLETE	LEE	47	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	VARIABLE ANNUITY LIFE INSURANCE COMPANY	COMMERCIAL
130823-11	82-00018-S	RIVERWOODS PLANTATION RV RESORT	5.54	0.00	0.0%	COMPLETE	LEE	46	25	29	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT MODIFICATION)	MOD	RIVERWOODS PLANTATION RV RESORT CONDO ASSOC INC	RECREATIONAL
160506-14	36-06202-P-04	ROBB & STUCKY DISTRIBUTION CENTER	20.22	0.00	0.0%	COMPLETE	LEE	46	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FORMOSA COMMERCE CENTER L L C	INDUSTRIAL
141024-12	11-03617-P	ROCKEDGE	0.91	0.29	31.5%	NO RESPONSE	COLLIER	50	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	WATERMEN AT ROCKEDGE NAPLES, L L C	RESIDENTIAL
141216-19	11-01743-P	RUNWAY 14 - 32 SAFETY AREA DRAINAGE IMPROVEMENTS	68.91	0.00	0.0%	COMPLETE	COLLIER	0	0		ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES
160711-8		RURAL LANDS WEST	10158.82	4717.98	46.4%	INITIAL REVIEW	COLLIER	48	28	3, 10-15, 22-27, 34-36	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL)	NEW	COLLIER ENTERPRISES MANAGEMENT INC	RESIDENTIAL
140723-12	11-00968-S	S R 29 WILDLIFE CROSSINGS	31.46	30.45	96.8%	COMPLETE	COLLIER	49	30	5	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	MITIGATION

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150507-12	36-02988-P	S R 45 (U S 41) NORTH OF BONITA BEACH ROAD TO U S 41	75.04	2.92	3.9%	COMPLETE	LEE	47	25	16	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
150225-8	36-07151-P	S R 82 FROM LEE BOULEVARD TO SHAWNEE ROAD	93.42	54.22	58.0%	COMPLETE	LEE	45	26	4, 5, 6, 9, 10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
150324-2	36-07151-P	S R 82 FROM SHAWNEE ROAD TO ALABAMA ROAD	69.63	13.24	19.0%	COMPLETE	LEE	45	26	10, 11, 13 & 14	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
130905-8	26-01188-P	S R 82 WIDENING FROM LEE CO LINE TO COLLIER CO LINE	48.25	6.75	14.0%	COMPLETE	HENDRY	45	28	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
150623-15	88-00058-S	S R 84 COUNTY BARN-SANTA BARBARA BLVD F P I D 433173-1-32-01	15.92	0.44	2.8%	COMPLETE	COLLIER	50	26	4, 5, 6, 7, 8 and 9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
160519-15	11-01194-S	S R 846 LAND	2574.70	389.25	15.1%	COMPLETE	COLLIER	47	27	35,36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	27TH/ PICO BOULEVARD LIMITED PARTNERSHIP	AGRICULTURAL
160708-6	36-00080-S	S W F I A REMEDIATION OF HAZARDOUS WILDLIFE AREAS 9, 10 & 12	7592.30	4599.85	60.6%	INITIAL REVIEW	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY PORT AUTHORITY	AIRPORT RELATED FACILITIES
150730-1	36-00080-S	S W F I A REMEDIATION OF HAZARDOUS WILDLIFE AREAS PH. 2	152.72	82.50	54.0%	COMPLETE	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY PORT AUTHORITY ATTN: MARK FISHER	AIRPORT RELATED FACILITIES
151005-10	36-00080-S	S W F I A SECURITY GATE 64 RELOCATION	1.41	0.00	0.0%	COMPLETE	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY PORT AUTHORITY	AIRPORT RELATED FACILITIES
131211-5	36-00145-S	S W F INVESTMENTS	8.78	0.00	0.0%	COMPLETE	LEE	46	25	17,20	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	S W F INVESTMENTS L L C	COMMERCIAL
150813-11	36-00080-S	S W FLORIDA INTERNATIONAL AIRPORT	7592.30	4599.85	60.6%	COMPLETE	LEE	45	25	23-27, 34-36	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	COMMERCIAL
140813-7	36-03802-P	S W FLORIDA INTERNATIONAL AIRPORT (S W F I A) ACCESS TO I-75	417.77	127.85	30.6%	COMPLETE	LEE	46	25	2,3,10	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
140929-12	36-05136-P-05	S W INTERNATIONAL TRACT F2	3.88	0.11	2.8%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	BARNUM FORT MYERS PROPERTIES L L C	INDUSTRIAL
140926-12	36-05136-P-05	S W INTERNATIONAL TRACT F-2	3.88	0.11	2.8%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BARNUM FORT MYERS PROPERTIES L L C	INDUSTRIAL
150928-3	36-05136-P-10	S W INTERNATIONAL TRACT F-3	4.11	0.01	0.2%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	JENISA INVESTMENTS L L C	INDUSTRIAL
140929-16	36-05136-P-03	S W INTERNATIONAL TRACT K	6.55	0.07	1.0%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD		COMMERCIAL
150623-2	36-00142-S	S W RECHARGE PROJECT MODIFICATION	1.24	0.30	24.5%	COMPLETE	LEE	44	26	33, 34, 35, 36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	EAST COUNTY WATER CONTROL DISTRICT	ROADWAY
140124-15		SABAL PALM M S T U	0.22	0.22	100.0%	RETURNED	COLLIER	0	0		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	BETTER ROADS INC	ROADWAY
130806-4	11-00736-S	SADDLEBROOK LAKES	141.43	141.43	100.0%	WITHDRAWN	COLLIER	48	27	9	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	SADDLEBROOK LAKES HOMEOWNERS ASSOCIATION INC	RESIDENTIAL
151228-3	11-00736-S	SADDLEBROOK LAKES LOT 17	2.29	1.14	50.0%	COMPLETE	COLLIER	48	27	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RESIDENTIAL
150826-3	11-00736-S	SADDLEBROOK LAKES LOT 8	2.26	1.32	58.6%	COMPLETE	COLLIER	48	27	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RESIDENTIAL
150918-2	36-00678-S-42	SALEX PIZZERIA & OFFICE/RETAIL AT GATEWAY	0.72	0.00	0.0%	COMPLETE	LEE	45	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SALEX B, L.L.C.	COMMERCIAL
140929-13	36-04579-P	SAN CARLOS TOWN CENTER	9.21	0.00	0.0%	COMPLETE	LEE	46	25	07	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	COLLIER FLORIDA PROPERTIES L L C	COMMERCIAL
141117-1	11-03664-P	SAN MARINO	196.62	196.27	99.8%	COMPLETE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	SD SAN MARINO LLC	RESIDENTIAL
131025-11	11-03173-P	SANDALWOOD VILLAGE	7.79	7.73	99.2%	COMPLETE	COLLIER	48	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	C R P/VANDERBILT SANDALWOOD L L C	RESIDENTIAL
150611-4	11-03173-P	SANDALWOOD VILLAGE	7.79	7.73	99.2%	COMPLETE	COLLIER	48	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	C R P VANDERBILT SANDALWOOD, L L C	RESIDENTIAL
150409-15	36-00379-S-08	SANDERS LABORATORIES FACILITY - PART OF LOT 6 BLOCK D	0.73	0.00	0.0%	COMPLETE	LEE	45	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SANDERS LABORATORIES INC	COMMERCIAL
151207-17	11-02055-P	SATURNIA FALLS F K A TERAFINA PUD	637.01	292.53	45.9%	WITHDRAWN	COLLIER	48	26	16	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	G L HOMES OF NAPLES ASSOC I I L T D	RESIDENTIAL
151104-10	36-00142-S-60	SAVANNA LAKES	785.05	351.68	44.8%	COMPLETE	LEE	45	27	16-20	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	U S HOME CORPORATION	RESIDENTIAL
141003-21	11-01382-P	SAXON MANOR ISLES	20.77	4.46	21.5%	COMPLETE	COLLIER	50	26	6	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	NAPLES CARRIAGE L L C	RESIDENTIAL
131025-2	11-00360-S-57	SCHNEIDER WAREHOUSE	1.55	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	FAM SATPRO, L L C	COMMERCIAL
141017-6	11-03630-P	SCOUR PROTECTION FOR IMMOKALEE ROAD BRIDGE OVER GATOR CANAL	0.11	0.11	100.0%	COMPLETE	COLLIER	47	28	23, 26	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
141017-4	11-03629-P	SCOUR PROTECTION FOR RANDALL BLVD BRIDGE	0.08	0.07	86.6%	COMPLETE	COLLIER	48	27	19, 25	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
160301-13	36-00289-S-07	SEAGLASS (F K A ESPERIA NORTH)	3.41	0.00	0.0%	COMPLETE	LEE	47	25	20	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	W S R BONITA BAY L L C	RESIDENTIAL
150414-16	36-00289-S-07	SEAGLASS (FKA ESPERIA NORTH AT BONITA BAY)	3.41	0.00	0.0%	COMPLETE	LEE	47	25	20	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	W S R - BONITA BAY L L C	RESIDENTIAL
150722-14	26-00820-P	SECTION 33 FARM	732.74	87.92	12.0%	COMPLETE	HENDRY	46	31	4	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	IMMOKALEE EXCHANGE L L C	AGRICULTURAL
150612-19	36-07251-P	SECTION 33 REGIONAL MITIGATION SITE	632.43	588.66	93.1%	COMPLETE	LEE	46	26	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONER	MITIGATION
140121-21	11-01821-P	SENECA WAY AT TALIS PARK	19.92	0.96	4.8%	COMPLETE	COLLIER	48	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	K E TALIS PARK PROPERTIES, L L C	RESIDENTIAL
150501-23	36-04718-P	SHADOW LAKES F K A BELL PRESERVE	82.65	9.71	11.8%	WITHDRAWN	LEE	45	27	3	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SHADOW LAKES INVESTMENTS L L C	RESIDENTIAL
150504-24	36-04718-P	SHADOW LAKES F K A BELL PRESERVE	77.61	9.71	12.5%	INITIAL REVIEW	LEE	45	27	3	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SHADOW LAKES INVESTMENTS L L C	RESIDENTIAL
160607-6	36-04126-P	SHADOW WOOD PRESERVE	0.08	0.02	19.0%	NO RESPONSE	LEE	46	25	17 & 18	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SHADOWN WOOD PRESERVE COMMUNITY ASSOCIATION	RESIDENTIAL
140923-20	36-08271-P	SHANGRI LA ROAD SIDEWALK ADDITION	2.70	0.01	0.3%	COMPLETE	LEE	47	25	22, 23 &26	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	CITY OF BONITA SPRINGS (ATTN MATT FEENEY)	RECREATIONAL
140626-1	36-07346-P	SHANGRI-LA ROAD EXTENSION	4.72	0.04	0.8%	COMPLETE	LEE	47	25	23, 24, 25, 26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF BONITA SPRINGS (ATTN: MATT FEENEY)	ROADWAY
140210-4	36-02904-S-24	SHAW DEVELOPMENT FACILITY EXPANSION (BERNWOOD BUSINESS PARK)	5.49	0.00	0.0%	COMPLETE	LEE	47	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	25190 BERNWOOD DRIVE L L C	COMMERCIAL
140306-15	36-07756-P	SHELTERING PINES DRAINAGE IMPROVEMENTS	23.60	0.07	0.3%	COMPLETE	LEE	46	25	20	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	SHELTERING PINES IMPROVEMENT ASSOCIATION INC	RESIDENTIAL
130701-8	36-06513-P	SHIRE LANE	5.03	0.31	6.2%	COMPLETE	LEE	45	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HB503)	MOD	J F K VENTURES L L P	COMMERCIAL
140821-8	36-06513-P	SHIRE LANE	5.02	0.30	6.0%	COMPLETE	LEE	45	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	J F K VENTURES L L P	COMMERCIAL
160609-12	11-00360-S-99	SHIRLEY STREET (6301)	1.36	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		INDUSTRIAL
160509-14	11-00360-S-95	SHIRLEY STREET CONCRETE BATCH PLANT	2.01	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	6100 SHIRLEY LLC	INDUSTRIAL
160201-13	36-01871-S-13	SHOPPES AT GRANDE OAK - LOT 2 (DUNKIN DONUTS - VALVOLINE)	21.22	0.00	0.0%	NO RESPONSE	LEE	40	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S S C 354714 L L C	COMMERCIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150526-3	36-05142-P-08	SHOPPES OF COCONUT TRACE	1.90	0.00	0.0%	COMPLETE	LEE	46	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	C F T N V DEVELOPMENTS L L C	COMMERCIAL
140623-14	36-05268-P-02	SHOPPES OF GULF COAST	29.26	19.06	65.1%	COMPLETE	LEE	46	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ALICO LAND L L C	COMMERCIAL
160503-12	36-04799-P	SHOPS AT ESTERO TOWN COMMONS	6.32	0.00	0.0%	COMPLETE	LEE	46	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	K R G/ C C A ESTERO L L C	COMMERCIAL
140410-7	36-06211-P-10	SHOPS AT UNIVERSITY PLAZA	3.42	0.44	12.9%	COMPLETE	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PARADISE VENTURES LLC	COMMERCIAL
151009-7	11-02654-P	SIENNA RESERVE	29.63	27.01	91.2%	COMPLETE	COLLIER	48	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LYNX ZUCKERMAN AT HAMILTON GREENS, L L C	RESIDENTIAL
140214-5	11-02654-P	SIENNA RESERVE - FKA HAMILTON GREENS	29.63	27.01	91.2%	COMPLETE	COLLIER	48	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LYNX ZUCKERMAN AT HAMILTON GREENS L L C	RESIDENTIAL
141103-19	11-01314-S-02	SIERRA CLUB APARTMENTS	18.11	1.29	7.1%	WITHDRAWN	COLLIER	50	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SIERRA GRANDE HOLDINGS L L C	RESIDENTIAL
150205-3	11-01314-S-02	SIERRA CLUB APARTMENTS	18.11	1.29	7.1%	COMPLETE	COLLIER	50	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SIERRA GRANDE APARTMENTS L L C	RESIDENTIAL
150911-8	11-01314-S-03	SIERRA MEADOWS SUB (LOTS 6,8, & 9)	16.30	16.11	98.9%	COMPLETE	COLLIER	50	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DISCOVERY VILLAGE AT NAPLES L L C	COMMERCIAL
150312-12	36-00678-S	SILVER LAKES	1.61	0.00	0.0%	NO RESPONSE	LEE	45	26	5	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
130930-21	36-00080-S	SITE PREPARATION FOR RUNWAY 6 R-24 L	7591.72	4599.85	60.6%	NO RESPONSE	LEE	45	26	19, 20, 29-32	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	LEE COUNTY PORT AUTHORITY	AIRPORT RELATED FACILITIES
150529-8	36-02087-S	SIX MILE CYPRESS LEE CO COMPLETE STREETS INITIATIVE TIGER	47.01	0.86	1.8%	COMPLETE	LEE	45	25	19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
160701-14		SIX MILE CYPRESS PARKWAY AND METRO PARKWAY INTERSECTION IMPR	6.80	0.00	0.0%	INITIAL REVIEW	LEE	45	24	30	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150312-14	36-01327-S-07	SIX MILE CYPRESS SENIOR HOUSING FACILITY	8.91	0.00	0.0%	COMPLETE	LEE	45	25	19	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	OMEGA COMMUNITIES L L C	RESIDENTIAL
151026-13	36-00080-S-02	SKY WALK	10.56	10.32	97.7%	COMPLETE	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	N A P SKYPORT L L C	COMMERCIAL
130925-3	36-00080-S	SKYPLEX BOULEVARD	9.38	7.79	83.0%	COMPLETE	LEE	45	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY PORT AUTHORITY ATTN: MARK FISHER	HIGHWAY
140221-6	36-00080-S	SKYPLEX COMMERCIAL TRACT	783.70	489.03	62.4%	NO RESPONSE	LEE	45	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY PORT AUTHORITY	COMMERCIAL
140407-8	11-00360-S-68	SMITH AND DESHIELDS - LOTS 36 AND 37 INDUSTRIAL PARK	2.01	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	DESHIELDS ENTERPRISES INC	INDUSTRIAL
150105-2	11-00360-S-78	SOLNIC	0.33	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SOLNIC L L C	COMMERCIAL
140618-3	36-04853-P-02	SOMERSET PHASE 4 B	13.97	0.00	0.0%	COMPLETE	LEE	45	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOME	RESIDENTIAL
131016-5	36-04853-P-02	SOMERSET PHASE 4A	72.68	0.00	0.0%	COMPLETE	LEE	45	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
150113-5	36-04853-P-02	SOMERSET PHASE 5	51.98	0.03	0.1%	COMPLETE	LEE	45	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
131018-15	36-04235-P	SORRENTO - PHASE II	3.93	0.00	0.0%	WITHDRAWN	LEE	48	26	04	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	D R HORTON	RESIDENTIAL
140825-15	11-00365-S	SOUTH RANCH	5373.62	2358.19	43.9%	COMPLETE	COLLIER	48	28	24,25	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PACIFIC LAND L T D	AGRICULTURAL
160407-5		SOUTHBROOKE MEDICAL CENTER	5.14	4.63	90.2%	NO RESPONSE	COLLIER	48	26	29	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	SOUTHBROOKE MEDICAL CENTER L L C	COMMERCIAL
160510-6		SPANISH OAKS LOT	1.57	1.01	64.3%	WITHDRAWN	COLLIER	48	26	29	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		RESIDENTIAL
150518-10	36-04076-P-02	SPECIALIZED VETERINARY SERVICES	1.70	0.00	0.0%	COMPLETE	LEE	45	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	EISELE INVESTMENTS L L C	OFFICE BUILDING
150527-22	36-00531-S-02	SPEEDWAY NO 06570	0.82	0.00	0.0%	COMPLETE	LEE	48	26	6	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	HESS RETAIL STORES L L C	COMMERCIAL
151008-42	36-00531-S-02	SPEEDWAY NO 06570	0.82	0.00	0.0%	COMPLETE	LEE	48	26	6	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SPEEDWAY L L C	COMMERCIAL
150212-11	26-00220-S-04	SPIRIT OF THE WILD HYDROLOGIC RESTORATION	3142.41	1002.73	31.9%	COMPLETE	HENDRY	44	29	21,22,23,26,28,33,34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION	GOVERNMENT
141219-21	26-00220-S-04	SPIRIT OF THE WILD WILDLIFE MGMT AREA	7501.68	2398.95	32.0%	COMPLETE	HENDRY	44	29	21, 22, 23, 26, 27, 28, 33. 34	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	FLORIDA FISH AND WILDLIFE COMMISSION	GOVERNMENT
160623-9	36-05329-P	SPONGE SPA	1.31	0.00	0.0%	INITIAL REVIEW	LEE	45	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SPONGE SPA	COMMERCIAL
151027-18	36-02469-S	SPRING CREEK WEST	0.90	0.21	23.8%	NO RESPONSE	LEE	47	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PELICANS NEST GOLF CLUB INC	RESIDENTIAL
150727-14	36-00288-S-02	SPRING RUN AT THE BROOKS	0.04	0.00	0.0%	COMPLETE	LEE	47	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BROOKS OF BONITA SPRINGS I I C D D	GOLF COURSE DEVELOPMENT
140401-12	36-01871-S-12	SPRINGS AT ESTERO	21.34	14.91	69.9%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	UNIVERSITY HIGHLANDS LIMITED PARTNERSHIP	RESIDENTIAL
141003-24	36-01871-S-12	SPRINGS AT ESTERO	21.34	14.91	69.9%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	CONTINENTAL 305 FUND L L C	RESIDENTIAL
140825-14	11-03043-P	SR 84 (DAVIS BLVD)	60.59	5.15	8.5%	COMPLETE	COLLIER	50	26	3,4,9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
150217-3	11-03672-P	STARNES WATER CONTROL STRUCTURES	0.69	0.25	36.8%	COMPLETE	COLLIER	46	28	30	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW DEMINIMUS EXEMPTION)	NEW		AGRICULTURAL
160715-2		STATE ROAD 82 AT CORKSCREW ROAD (CR 850) INTERSECTION	10.67	0.50	4.7%	INITIAL REVIEW	COLLIER	46	28	4	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY TRANSPORTATION ENGINEERING	HIGHWAY
160408-8	11-02231-P	STONECREEK RECREATION TRACT	640.56	328.77	51.3%	COMPLETE	COLLIER	48	26	9	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	PARKLANDS ASSOCIATES I L L L P	RECREATIONAL
150602-2	11-01804-P	STUDENT ACTIVITY CENTER	77.13	4.50	5.8%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COMMUNITY SCHOOL OF NAPLES	INSTITUTIONAL
141015-3	36-02881-S	STUDENT HEALTH SERVICES MODULAR BLDG	0.56	0.00	0.0%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
150715-19	26-00385-S	SUGARBELLE	1847.13	248.86	13.5%	COMPLETE	HENDRY	46	33	4,9,16,17	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SUNSHINE CITRUS GROWERS L L C	AGRICULTURAL
150212-7	36-01661-S	SUN HARVEST CITRUS	2.33	0.06	2.8%	COMPLETE	LEE	45	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	EDSALL GROVES INC	COMMERCIAL
150529-3	36-01661-S	SUN HARVEST CITRUS	2.33	0.06	2.8%	COMPLETE	LEE	45	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EDSALL GROVES INC	COMMERCIAL
150115-16	11-03689-P	SUNCATCHER ORGANIC FARM	1.15	1.15	100.0%	COMPLETE	COLLIER	48	25	10	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW AGRICULTURAL EXEMPTION)	NEW		AGRICULTURAL
160422-11	11-03689-P	SUNCATCHER ORGANIC FARM	1.15	1.15	100.0%	WITHDRAWN	COLLIER	48	25	10	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW AGRICULTURAL EXEMPTION)	NEW		AGRICULTURAL
160601-12	36-02967-S	SUNCOAST ACURA / SAAB / SUZUKI	7.19	0.00	0.0%	COMPLETE	LEE	45	24	36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	B & F PROPERTIES OF S W F L L L C	COMMERCIAL
160328-8	36-08560-P	SUNSHINE BLVD AND 12TH STREET WEST INTERSECTION IMPROVEMENTS	0.23	0.00	0.0%	COMPLETE	LEE	44	26	26	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150303-11	36-05142-P-03	SUNTRUST BANK AT COCONUT TRACE	1.33	0.00	0.0%	COMPLETE	LEE	47	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	WACO L L C	COMMERCIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
140225-23	36-00605-S-03	SW REGIONAL COMMERCE AND TRADE CENTER LOTS 15 AND 16	1.99	0.00	0.0%	COMPLETE	LEE	45	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LINDBERGH32 L L C	COMMERCIAL
160127-1	36-03831-P-08	TACO BELL - GULF COAST TOWN CENTER	1.11	0.00	0.0%	COMPLETE	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	MCNULTY DEVELOPMENT L L C	COMMERCIAL
160512-14	11-00208-S	TALIS PARK OUTFALL	6.30	0.90	14.3%	UNDER REVIEW	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA POWER & LIGHT COMPANY	INSTITUTIONAL
160427-17	26-00454-S	TANNER GROVE	140.77	32.03	22.8%	COMPLETE	HENDRY	45	29	17	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GOODMAN GROVE PARTNERSHIP	AGRICULTURAL
150910-12	11-03160-P	TAORMINA RESERVE	82.77	62.71	75.8%	COMPLETE	COLLIER	50	26	9	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	HIGHLAND PROPERTIES OF LEE AND COLLIER L T D	RESIDENTIAL
141001-17	11-00360-S	TAYLOR-1 OFFICE AND WAREHOUSE BUILDINGS	1.26	0.00	0.0%	VOID	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		COMMERCIAL
140321-13	11-03577-P	TEMPLE CITRUS GROVE	131.57	0.00	0.0%	COMPLETE	COLLIER	49	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	NAPLES ASSOCIATES V, L L L P	RESIDENTIAL
151207-16	11-03577-P	TEMPLE CITRUS GROVE	131.57	0.00	0.0%	COMPLETE	COLLIER	49	25	1.12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	NAPLES ASSOCIATES V, L L L P	RESIDENTIAL
150911-1	36-00080-S	TERMINAL ACCESS ROADWAY WIDENING	38.04	0.14	0.4%	COMPLETE	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	LEE COUNTY PORT AUTHORITY	AIRPORT RELATED FACILITIES
141030-11	11-00473-S-03	TERRACINA GRAND	6.44	2.72	42.2%	COMPLETE	COLLIER	50	26	5	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TERRACINA I I, L L C	RESIDENTIAL
150324-24	11-00473-S-03	TERRACINA HEALING GARDEN	13.08	3.65	27.9%	COMPLETE	COLLIER	50	26	05	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	TERRACINA I I, L L C	RESIDENTIAL
131008-3	36-04499-P	TESONE BASIN 12	15.15	0.00	0.0%	COMPLETE	LEE	47	25	23-26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
160713-15	11-00591-S	THE ARISTOCRAT	10.52	0.00	0.0%	INITIAL REVIEW	COLLIER	48	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	NATIONAL HEALTHCORP L P	INSTITUTIONAL
140307-25	11-00360-S-72	THE BROKERAGE L L C	0.25	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	THE BROKERAGE L L C	COMMERCIAL
140506-13	36-00288-S-02	THE BROOKS - OS-1 AND WATER QUALITY REVISIONS	7.71	0.00	0.0%	COMPLETE	LEE	46	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	THE BROOKS OF BONITA SPRINGS I I COMMUNITY DEVELOP	GOVERNMENT
160129-1	11-00065-S	THE CLUB PELICAN BAY	27.63	1.90	6.9%	COMPLETE	COLLIER	49	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE CLUB AT PELICAN BAY INC	RESIDENTIAL
160209-15	11-00768-S	THE CLUBHOUSE AT QUAIL WEST	14.51	0.01	0.0%	UNDER REVIEW	COLLIER	48	26	8	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	QUAIL WEST FOUNDATION INC	RECREATIONAL
150306-11	36-00288-S-02	THE COMMONS AT THE BROOKS - PICKLEBALL COURTS	3.74	0.00	0.0%	COMPLETE	LEE	47	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BROOKS OF BONITA SPRINGS COMMUNITY DEVELOPMENT DIS	RECREATIONAL
141215-22	11-01725-P	THE DUNES OF NAPLES	6.16	5.04	81.8%	WITHDRAWN	COLLIER	25	20	48	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DUNE OF NAPLES PROPERTY OWNERS ASSOCIATIONS INC	RECREATIONAL
140305-4	11-00272-S	THE FLORIDA EVALUATION CENTER	533.17	411.01	77.1%	COMPLETE	COLLIER	49	28	22,27,34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	CHRYSLER GROUP CARCO L L C	COMMERCIAL
140909-6	36-00161-S	THE FOREST COUNTRY CLUB - LAKE SLOPE RESTORATION	547.34	74.21	13.6%	COMPLETE	LEE	46	24	01	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE FOREST COUNTRY CLUB, INC.	GOLF COURSE DEVELOPMENT
140501-7	36-05075-P	THE GINN DEVELOPMENT AND GOLF COURSE	4352.37	2044.76	47.0%	COMPLETE	LEE	46	26	5,7,8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ALICO EAST FUND L L C	RESIDENTIAL
150901-11	11-01271-S	THE GREATER NAPLES Y M C A BASEBALL FIELD	20.68	8.28	40.0%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	GREATER NAPLES Y M C A, INC.	COMMERCIAL
160705-8	11-00641-S	THE IMPERIAL HEALTH CARE CENTER	4.00	0.00	0.1%	COMPLETE	COLLIER	48	25	15,16	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	NATIONAL HEALTHCORP L P	INSTITUTIONAL
140904-17	36-02664-S	THE LAKE AT METRO F K A SIX MILE CYPRESS SUBDIVISION	33.57	14.87	44.3%	COMPLETE	LEE	45	25	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	RED CANYON L L C	COMMERCIAL
140331-11	11-03455-P	THE LANDINGS AT BEARS PAW	10.64	7.92	74.5%	COMPLETE	COLLIER	49	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HEADWATERS DEVELOPMENT L L L P	RESIDENTIAL
150604-19	11-03455-P	THE LANDINGS AT BEARS PAW	10.64	7.92	74.5%	COMPLETE	COLLIER	49	25	35	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	HEADWATERS DEVELOPMENT L P	OTHER
140718-10	11-03312-P	THE LORDS WAY	4.26	0.38	8.8%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES, L L C	ROADWAY
160517-20	11-03312-P	THE LORDS WAY/HACIENDA LAKES BUSINESS PARK	1.93	0.00	0.0%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES L L C	ROADWAY
141028-6	11-01740-P	THE MERCATO	11.06	0.00	0.0%	COMPLETE	COLLIER	48	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	MERCATO RESIDENCES L L C	RESIDENTIAL
150622-7	11-01740-P	THE MERCATO	53.08	3.59	6.8%	COMPLETE	COLLIER	48	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MERCATO RESIDENCES L L C	RESIDENTIAL
130830-15	11-00806-S-09	THE MOORINGS AT GREY OAKS	15.55	0.00	0.0%	COMPLETE	COLLIER	49	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	HALSTATT L L C	RESIDENTIAL
160520-27	11-00806-S-09	THE MOORINGS AT GREY OAKS	15.62	0.00	0.0%	COMPLETE	COLLIER	49	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	THE MOORINGS INCORPORATED	RESIDENTIAL
140620-1	36-03568-P	THE PENINSULA PHASE I V	0.57	0.57	99.5%	COMPLETE	LEE	46	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MIROMAR LAKES L L C	RESIDENTIAL
150609-1	36-03568-P	THE PENINSULA PHASE IV	37.99	5.11	13.5%	INITIAL REVIEW	LEE	46	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MIROMAR LAKES DEVELOPMENT CORPERATION	RESIDENTIAL
150924-16	36-08561-P	THE PLACE	1361.54	125.13	9.2%	COMPLETE	LEE	46	26	23,24	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	THE PLACE AT CORKSCREW L L C	RESIDENTIAL
141231-32	36-04771-P	THE PLAZA AT PARKER COMMONS	3.86	0.00	0.0%	COMPLETE	LEE	45	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	P D P L L C	COMMERCIAL
140516-12	36-05393-P	THE PRESERVE AT CORKSCREW	350.63	336.73	96.0%	COMPLETE	LEE	46	26	29	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	R C S - CORKSCREW LAND L L C	RESIDENTIAL
150604-16	36-05393-P	THE PRESERVE AT CORKSCREW	0.21	0.19	93.5%	COMPLETE	LEE	46	26	20	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE PRESERVE AT CORKSCREW MASTER ASSOCIATION INC	RESIDENTIAL
150911-17	36-07258-P	THE PRESERVE AT OAK CREEK	18.06	8.49	47.0%	NO RESPONSE	LEE	47	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PRESERVE EQUITY L L C	RESIDENTIAL
151214-6	11-02234-P-13	THE QUARRY BEACH CLUB EXPANSION	7.60	0.06	0.8%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	THE QUARRY COMMUNITY ASSOCIATION INC	GOLF COURSE DEVELOPMENT
151215-7	36-04978-P-02	THE REEF (F K A COASTAL VILLAGES PH 3)	23.38	23.36	99.9%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	F G C U-REEF L L C	RESIDENTIAL
160526-15	36-04978-P-02	THE REEF II	5.31	5.31	100.0%	NO RESPONSE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PROGRESSIVE CAPITAL GROUP L L C	RESIDENTIAL
151106-18	36-04585-P-02	THE RESIDENCES AT NORTH BAY VILLAGE	23.39	4.12	17.6%	COMPLETE	LEE	47	25	28	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	NORTH BAY ACQUISITIONS L L C	RESIDENTIAL
141017-2	11-01821-P	THE RESIDENCES AT VYNE HOUSE	0.76	0.01	0.8%	COMPLETE	COLLIER	48	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	K E TALIS PARK PROPERTIES, L L C	RESIDENTIAL
150410-7	36-01871-S-08	THE SHOPPES AT GRANDE OAK - PERKINS RESTAURANT - LOT 5	2.08	0.00	0.0%	COMPLETE	LEE	46	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	HARBOUR PRIVATE CAPITAL L L C	COMMERCIAL
130919-15	36-07058-P	THE TERRACES OF BONITA SPRINGS	19.88	15.87	79.8%	COMPLETE	LEE	47	25	28	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BONITA SPRINGS RETIREMENT VILLAGE INC	RESIDENTIAL
160229-15	11-02336-P	THE TOWN OF AVE MARIA	1741.29	138.43	7.9%	COMPLETE	COLLIER	48	29	4, 7, 8, and 9	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	AVE MARIA STEWARDSHIP COMMUNITY DISTRICT	RESIDENTIAL
160502-12	11-02234-P-15	THE WAREHOUSE	0.95	0.00	0.0%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CAMERON PARTNERS I I L L C	COMMERCIAL
160314-23	36-02476-S-03	THREE OAKS 106 RPD	105.51	60.43	57.3%	NO RESPONSE	LEE	46	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CHICOS RETAIL SERVICES INC	RESIDENTIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
140217-12	36-05268-P-03	THREE OAKS COMMERCE PARK	57.55	13.84	24.0%	COMPLETE	LEE	46	25	03	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	THREE OAKS 59 L L C	COMMERCIAL
140217-13	36-05268-P-03	THREE OAKS COMMERCE PARK	810.68	172.09	21.2%	COMPLETE	LEE	46	25	3,4	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	THREE OAKS 59 L L C	INDUSTRIAL
160105-16	36-05268-P	THREE OAKS PARKWAY - ORIOLE ROAD EXTENSION	24.30	5.40	22.2%	COMPLETE	LEE	46	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	NORTH ALICO PROPERTY OWNERS ASSOCIATION	ROADWAY
140506-12	36-04007-P	THREE OAKS PARKWAY DRAINAGE CONVEYANCE	7.71	0.00	0.0%	COMPLETE	LEE	46	25	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	PUBLIC AND INSTITUTIONAL
160505-7	36-05268-P	THREE OAKS PARKWAY -ORIOLE ROAD EXTENSION	24.30	5.40	22.2%	COMPLETE	LEE	46	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	NORTH ALICO PROPERTY OWNERS ASSOCIATION	ROADWAY
140319-10	36-05254-P	THREE OAKS PARKWAY SCHOOL SITE	73.95	64.71	87.5%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SCHOOL DISTRICT OF LEE COUNTY	PUBLIC AND INSTITUTIONAL
151221-17	36-04007-P	THREE OAKS PARKWAY TURN LANE AT THE REEF	0.07	0.07	100.0%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY DEPARTMENT OF TRANSPORTATION	ROADWAY
150615-15	36-05268-P	THREE OAKS PKWY-ORIOLE/MCGAVEY RESEARCH PARK MIT PARCEL PH 3	810.68	172.09	21.2%	COMPLETE	LEE	46	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NORTH ALICO PROPERTY OWNERS ASSOCIATION	ROADWAY
160318-8	36-05268-P	THREE OAKS PKWY-ORIOLE/MCGAVEY RESEARCH PARK MIT PARCELS	810.68	172.09	21.2%	COMPLETE	LEE	46	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NORTH ALICO PROPERTY OWNERS ASSOCIATION	ROADWAY
150212-16	36-00491-S	THREE OAKS TOWN CENTER - 7-ELEVEN	5.69	0.06	1.0%	COMPLETE	LEE	46	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PAUL H FREEMAN TRUSTEE	COMMERCIAL
150727-5	85-00149-S	THREE OAKS TOWN CENTER - 7-ELEVEN	0.20	0.00	0.0%	COMPLETE	LEE	46	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSSIONERS	ROADWAY
140129-7	36-04007-P	THREE OAKS TURN LANES FOR ESTERO PLACE	1.10	0.00	0.0%	COMPLETE	LEE	46	25	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY DEPARTMENT OF TRANSPORTATION	HIGHWAY
141006-15	36-00491-S-02	THREE OAKS W W T P - OXIDATION DITCH IMPROVEMENTS PHASE I I	17.62	0.00	0.0%	COMPLETE	LEE	46	25	15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	INDUSTRIAL/UTILITIES
151202-9	11-03752-P	TIDE / STARBUCKS AT 4099 TAMIAMI TRAIL NORTH	3.08	0.00	0.0%	COMPLETE	COLLIER	49	25	16	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	CREEKSIDE WEST INC	COMMERCIAL
141003-14	36-01871-S-09	TIDEWATER (UNIVERSITY HIGHLAND TRACT 1)	136.50	129.48	94.9%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	UNIVERSITY HIGHLAND LIMITED PARTERSHIP	RESIDENTIAL
160113-2	36-01871-S-09	TIDEWATER (UNIVERSITY HIGHLANDS)	136.50	129.48	94.9%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	UNIVERSITY HIGHLANDS LIMITED PARTNERSHIP	COMMERCIAL
160406-14	36-02476-S	TIMBERWALK SOUTH APARTMENTS	16.94	0.00	0.0%	NO RESPONSE	LEE	46	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PAUL H FREEMAN TRUST	RESIDENTIAL
150911-14	36-00678-S-36	TIMBERWOOD PRESERVE AT GATEWAY	30.07	26.16	87.0%	COMPLETE	LEE	45	26	08	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150708-13	11-00433-S-06	TOLL GATE COMMERCIAL CENTER - TRACT 5	0.97	0.00	0.0%	COMPLETE	COLLIER	49	26	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MARIO VOCISANO AND ROBERT VOCISANO CO-TRUSTEES	COMMERCIAL
150805-6	11-00433-S-06	TOLL GATE COMMERCIAL CENTER (REF: A# 150708-13)	5.82	0.00	0.0%	VOID	COLLIER	49	26	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		COMMERCIAL
151110-12	11-00433-S-14	TOLLGATE PUD (LOT 22) - K A M CONCRETE PUMPING 2	2.72	0.00	0.0%	COMPLETE	COLLIER	49	26	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PUMPING FOR JESUS, L L C	COMMERCIAL
160108-21	36-05431-P	TORTUGA / K B HOMES	80.31	61.60	76.7%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	K B HOME TAMPA L L C	RESIDENTIAL
160616-21	36-05431-P	TORTUGA / K B HOMES	80.31	61.60	76.7%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	K B HOME TAMPA L L C	RESIDENTIAL
131226-1	36-05431-P	TORTUGA PRESERVE	80.31	61.60	76.7%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	KB HOME FORT MYERS L L C	RESIDENTIAL
141215-7	36-05431-P	TORTUGA PRESERVE	80.31	61.60	76.7%	COMPLETE	LEE	46	24	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	K B HOME FORT MYERS L L C	RESIDENTIAL
151008-29	11-01568-P-02	TOUCHSTONE PARCEL ADDITION TO TIBURON	151.65	62.94	41.5%	NO RESPONSE	COLLIER	48	26	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	W C I COMMUNITIES, L L C	OTHER
160316-4	11-01743-P	TOWER DRIVE DRAINAGE MODIFICATIONS AT NAPLES AIRPORT	0.50	0.00	0.0%	COMPLETE	COLLIER	50	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CITY OF NAPLES AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES
150327-1	36-00288-S-11	TOWNE PLACE SUITES - ESTERO	2.26	2.06	91.0%	COMPLETE	LEE	47	25	9	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	COCONUT POINT DEVELOPERS L L C	COMMERCIAL
151125-13	36-00288-S-27	TRACT 1 D-3 COCONUT POINT AREA 1 - OAKBROOK OFFICES	2.16	0.16	7.6%	COMPLETE	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	C P LAND INVESTMENT L L C	OFFICE BUILDING
160608-10	36-00288-S-27	TRACT 1-D-3 COCONUT POINT AREA ONE - OAKBROOK OFFICES	2.16	0.17	7.7%	INITIAL REVIEW	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	C P LAND INVESTMENTS L L C	OFFICE BUILDING
160527-18	11-00429-S-28	TRACT 54 AT LELY RESORT	0.87	0.87	100.0%	NO RESPONSE	COLLIER	50	26	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	STOCK DEVELOPMENT L L C	RESIDENTIAL
160105-11	11-02363-P-05	TRACT B AT 3500 CORPORATE PLAZA	2.59	0.00	0.0%	COMPLETE	COLLIER	49	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	KRAFT OFFICE CENTER NORTH PARCEL L L C	COMMERCIAL
150521-24	36-03568-P	TRACT M-M	5.13	0.01	0.2%	COMPLETE	LEE	46	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MIROMAR LAKES GOLF CLUB L L C	RESIDENTIAL
140127-11	11-00360-S-60	TRADE CENTER OF NAPLES - LOT 50	0.65	0.00	0.0%	COMPLETE	COLLIER	49	25	2,11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		INDUSTRIAL
141009-1	11-03652-P	TREE FARM P U D	52.02	1.89	3.6%	COMPLETE	COLLIER	48	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND NEW	NEW	LANDQUEST GROUP, L L C	RESIDENTIAL
130924-10	11-02513-P	TREE FARM ROAD	74.15	12.41	16.7%	WITHDRAWN	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NEAL COMMUNITIES	ROADWAY
140908-6	11-03706-P	TREE FARM ROAD EXTENSION	8.55	7.29	85.3%	COMPLETE	COLLIER	48	26	25, 26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150721-17	36-02899-S	TREELINE AVE - BUS STOP B S 9, B S 10	0.46	0.08	18.5%	COMPLETE	LEE	45	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150806-10	36-06455-P-02	TREELINE COMMERCIAL	11.03	3.48	31.5%	COMPLETE	LEE	45	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TREELINE 200 L L C	COMMERCIAL
140609-1	36-04033-P-02	TREELINE DISTRIBUTION CENTER	22.21	0.00	0.0%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	J D C PROPERTY GROUP L L C	COMMERCIAL
151229-3	36-04033-P-02	TREELINE DISTRIBUTION CENTER	22.21	0.00	0.0%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	J D C FORT MYERS L L C	COMMERCIAL
150320-7	36-00379-S-04	TREELINE PLAZA - LOT 1 BLOCK C AIRPORT WOODS COMMERCE CTR	1.93	0.00	0.0%	COMPLETE	LEE	45	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	TREELINE PLAZA AT AIRPORT WOODS CONDO ASSN	COMMERCIAL
141016-3	11-00324-S	TROYER GROVE	116.32	21.35	18.4%	COMPLETE	COLLIER	47	27	14,23	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BEAR HAMMOCK GROVE L L C	AGRICULTURAL
130905-2	11-00360-S-40	TURKUOISE TRADING WAREHOUSE	0.68	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	TURKUOISE TRADING L L C	INDUSTRIAL
140131-6	11-03463-P	TUSCANY POINTE	29.45	0.49	1.7%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D R HORTON I N C	RESIDENTIAL
140625-7	11-03463-P	TUSCANY POINTE (COLLIER 36)	9.29	9.27	99.9%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	D R HORTON, INC.	RESIDENTIAL
151207-14	11-02891-P	TWIN EAGLES SOUTH	560.84	547.20	97.6%	COMPLETE	COLLIER	48	27	29-32	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	NAPLES ASSOCIATES I V L L L P	RESIDENTIAL
160617-12	11-02891-P	TWIN EAGLES SOUTH	560.84	547.20	97.6%	COMPLETE	COLLIER	48	27	29-32	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	NAPLES ASSOCIATES I V L L L P	RESIDENTIAL
130916-15	11-02891-P	TWIN EAGLES SOUTH (F K A IMMOKALEE ROAD SOUTH)	560.84	547.20	97.6%	COMPLETE	COLLIER	48	27	29	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	NAPLES ASSOCIATES I V L L L P	RESIDENTIAL
140703-5	36-05198-P-05	TWIN PEAKS RESTAURANT	1.63	0.00	0.0%	COMPLETE	LEE	46	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DMD FLORIDA RESTARAUNT GROUP F LLC	COMMERCIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
140722-4	11-01567-P	TWINEAGLES - BLOCK 111	17.99	0.00	0.0%	COMPLETE	COLLIER	48	27	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE TWINEAGLES CLUB L L C	RESIDENTIAL
140415-11	11-01567-P	TWINEAGLES - BLOCK 109	23.74	0.00	0.0%	COMPLETE	COLLIER	48	27	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE TWINEAGLES CLUB L L C	RESIDENTIAL
150113-9	11-01567-P-03	TWINEAGLES GRAND ARBORS (BLOCK 110)	11.04	0.00	0.0%	COMPLETE	COLLIER	48	27	17	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TWINEAGLES DEVELOPMENTS A G R, L L C	RESIDENTIAL
150528-7	36-07278-P	U S 41 (DOWNTOWN ESTERO F D O T IMPROVEMENTS)	2.97	0.00	0.0%	COMPLETE	LEE	46	25	28	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
150330-3	36-07278-P	U S 41 ESTERO - LEETRAN BUS SHELTERS	0.04	0.00	0.0%	COMPLETE	LEE	46	25		ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
160509-5	36-02988-P	U S 41 FROM ALICO ROAD TO DANIELS PARKWAY BUS PADS 434939-1	43.58	1.63	3.7%	COMPLETE	LEE	46	24	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
141230-3	36-07278-P	U S 41 FROM CORKSCREW ROAD TO SAN CARLOS BOULEVARD	2.05	0.20	9.5%	COMPLETE	LEE	46	25	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
140813-4	11-01368-P	U S 41 FROM PELICAN BAY BLVD TO C R 862 - SIDEWALK	9.68	0.00	0.0%	COMPLETE	COLLIER	49	25	33,34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
140129-4	36-02988-P	U S 41 TURN LANE IMPROVEMENTS FOR RACETRAC ESTERO	10.02	9.14	91.2%	COMPLETE	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
141126-16	11-02931-P-02	ULTIMATE EXPRESS CAR WASH	1.36	1.36	100.0%	COMPLETE	COLLIER	48	26	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ULTIMATE EXPRESS CAR WASH, LLC	COMMERCIAL
141015-2	11-03000-P	UNITY FAITH MISSIONARY BAPTIST CHURCH	5.22	1.69	32.4%	COMPLETE	COLLIER	49	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	UNITY FAITH MISSIONARY BAPTIST CHURCH	INSTITUTIONAL
140331-1	36-02881-S	UNIVERSITY CONTROLLER MODULAR	0.88	0.02	1.9%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
140226-7	36-01871-S-09	UNIVERSITY HIGHLAND - N M DEVELOPMENT	205.57	186.03	90.5%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	UNIVERSITY HIGHLAND LIMITED PARTNERSHIP	COMMERCIAL
150527-8	36-01871-S-09	UNIVERSITY HIGHLANDS (U H L P)	55.46	42.81	77.2%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	UNIVERSITY HIGHLANDS LIMITED PARTNERSHIP	COMMERCIAL
160111-13	36-02881-S	UNIVERSITY LOOP PROJECT (B2)	8.63	7.38	85.6%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	RECREATIONAL
140331-10	36-06211-P-03	UNIVERSITY PLAZA WEST	20.83	17.80	85.5%	COMPLETE	LEE	46	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	VAN UNIVERSITY PLAZA L L C	COMMERCIAL
140224-18	36-06211-P-03	UNIVERSITY PLAZA WEST - CHILIS LOT A 2	1.79	1.79	100.0%	COMPLETE	LEE	46	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	VAN UNIVERSITY PLAZA L L C	COMMERCIAL
131031-5	36-06211-P	UNIVERSITY PLAZA WEST ROADWAY, DRAINAGE, UTILITIES & LOT A-1	2.01	2.01	100.0%	COMPLETE	LEE	46	25	10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	UNIVERSITY PLAZA MASTER ASSN INC	COMMERCIAL
140725-8	36-03568-P	UNIVERSITY VILLAGE	502.99	448.18	89.1%	COMPLETE	LEE	46	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND CONSTRUCTION/OPERATION	MOD	MIROMAR DEVELOPMENT CORPORATION	RESIDENTIAL
150608-12	36-02988-P	US 41 ROW IMPROVEMENTS FOR COCONUT HONDA DEALERSHIP	0.14	0.00	0.0%	COMPLETE	LEE	47	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
160504-10	11-01368-P	US 41 SIDEWALK - PINE RIDGE RD. TO PELICAN BAY BLVD. (NORTH)	53.17	0.00	0.0%	UNDER REVIEW	COLLIER	49	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 1	ROADWAY
160504-4	11-00843-S	US 41 SIDEWALK - PINE RIDGE RD. TO PELICAN BAY BLVD. (SOUTH)	53.17	0.00	0.0%	UNDER REVIEW	COLLIER	49	25	04	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 1	ROADWAY
140319-6	36-00067-S-02	VALENCIA AT SPANISH WELLS	54.27	13.97	25.7%	COMPLETE	LEE	48	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	TOLL FL V I I I LIMITED PARTNERSHIP	RESIDENTIAL
131014-5	11-00418-S	VALENCIA GOLF & COUNTRY CLUB LAKE 4-2 MODIFICATION	6.00	3.87	64.6%	COMPLETE	COLLIER	48	27	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ORANGETREE ASSOCIATES	RESIDENTIAL
140320-4	11-00418-S-11	VALENCIA GOLF AND COUNTRY CLUB PHASE 3	6.08	0.20	3.3%	COMPLETE	COLLIER	48	27	23 and 24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ORANGTREE ASSOCIATES	RESIDENTIAL
150330-5		VANDERBILT BRIDGE REPLACEMENT	0.23	0.17	73.8%	WITHDRAWN	COLLIER	48	25	17 and 20	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL	NEW	COLLIER COUNTY GOVERNMENT	ROADWAY
150421-17	11-00573-S	VANDERBILT CONNERS SUBDIVISION	104.25	2.35	2.3%	COMPLETE	COLLIER	48	25	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	OTHER
150330-4	11-01536-S	VANDERBILT DRIVE IMPROVEMENTS	7.54	5.60	74.2%	COMPLETE	COLLIER	48	25	17 and 20	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140811-13	36-03744-P	VASARI	0.18	0.07	36.6%	COMPLETE	LEE	48	25	51	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	VASARI C D D C/O SEVERN TRENT MANAGEMENT SERVICES	RESIDENTIAL
150331-15	36-03744-P	VASARI	1.48	0.00	0.0%	COMPLETE	LEE	48	25	51	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	VASARI COMMUNITY DEVELOPMENT DISTRICT	RESIDENTIAL
140429-15	36-03744-P	VASARI COUNTRY CLUB	372.48	87.37	23.5%	COMPLETE	LEE	48	25	51	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	VASARI CDD C/O SEVERN TRENT MANAGMENT SERVICES	RESIDENTIAL
150501-2	11-03756-P	VERONA POINTE ESTATES	15.26	15.26	100.0%	COMPLETE	COLLIER	48	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	PULTE HOME CORPORATION	RESIDENTIAL
150818-13	11-00332-S	VETERANS COMMUNITY PARK	0.18	0.00	0.0%	COMPLETE	COLLIER	48	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	RECREATIONAL
160503-16	36-02318-S	VETERANS PARK ACADEMY FOR THE ARTS	0.04	0.00	0.0%	COMPLETE	LEE	45	27	05	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY DISTRICT SCHOOL BOARD	INSTITUTIONAL
150904-3	11-01821-P	VIANSA AT TALIS PARK	15.08	0.88	5.8%	COMPLETE	COLLIER	48	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	K E TALIS PARK PROPERTIES, L L C	RESIDENTIAL
150218-2	36-07003-P	VILLA MAGNIFICA FKA PRESERVE AT SAN CARLOS PARK	9.28	7.94	85.5%	COMPLETE	LEE	46	25	17	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PERINEUS L L C	RESIDENTIAL
160128-9	11-00430-S	VILLAGES AT MONTEREY - CLUBHOUSE RENOVATION	2.88	0.00	0.0%	COMPLETE	COLLIER	49	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MONTEREY MASTER OWNERS ASSOCIATION INC	RESIDENTIAL
160105-6		VINCENT ACRES	16.73	16.73	100.0%	NO RESPONSE	COLLIER	50	26	3	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	HABITAT FOR HUMANITY OF COLLIER COUNTY	RESIDENTIAL
160408-14	11-01909-P	VINCENT ACRES - ACCESS ROAD AND TURN LANE	16.73	16.73	100.0%	NO RESPONSE	COLLIER	50	26	3	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC	RESIDENTIAL
160229-18	11-00371-S	VINEYARDS ELEMENTARY	18.02	0.00	0.0%	COMPLETE	COLLIER	49	26	05	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SCHOOL DISTRICT	PUBLIC AND INSTITUTIONAL
150803-2	11-00360-S-98	VIO CENTER	0.64	0.00	0.0%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD		INDUSTRIAL
150529-23	11-00596-S	VOYAGER HOLDINGS	24.23	1.38	5.7%	COMPLETE	COLLIER	46	29	17	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	VOYAGER HOLDINGS L L C	AGRICULTURAL
140923-19	36-08272-P	WAGON TRAIL TO CAFE OF LIFE SIDEWALK ADDITION	4.88	0.00	0.0%	COMPLETE	LEE	47	25	25	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	CITY OF BONITA SPRINGS	RECREATIONAL
140909-13	36-02736-S	WAL MART STORE 2237 - LIQUOR BOX ADDITION	18.85	0.00	0.0%	COMPLETE	LEE	44	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	WAL-MART STORES EAST, L P	COMMERCIAL
140328-16	11-00682-S-02	WALGREENS - PINE RIDGE AND AIRPORT PULLING	2.62	0.00	0.0%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BAKER-NAPLES, L.L.C.	COMMERCIAL
150810-21	11-00682-S-02	WALGREENS - PINE RIDGE AND AIRPORT PULLING	1.79	0.00	0.0%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	2014 NAPLES ASSOCIATES L L C	COMMERCIAL
140903-21	11-01009-S	WALMART STORE 1957	1.96	0.02	1.0%	COMPLETE	COLLIER	48	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WALMART STORES INC	COMMERCIAL
160711-22	11-01009-S	WALMART STORE 1957	16.83	3.40	20.2%	INITIAL REVIEW	COLLIER	48	25	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WALMART STORES INC	COMMERCIAL
140909-14	11-01909-P-03	WALMART STORE 5055 - LIQUOR BOX ADDITION	23.95	0.00	0.0%	COMPLETE	COLLIER	50	26	3	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	WALMART STORES EAST, L P	COMMERCIAL
140925-4	11-01632-P	WAL-MART STORE 5391 - LIQUOR BOXADDITION	23.75	0.00	0.0%	COMPLETE	COLLIER	48	26	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WAL-MART STORES EAST	COMMERCIAL
140327-4	11-03661-P	WARM SPRINGS	114.11	110.65	97.0%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ARGO WARM SPRINGS, L L C	RESIDENTIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150831-16	11-03661-P	WARM SPRINGS	113.86	110.40	97.0%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW	MOD	ARGO WARM SPRINGS, L L L P	RESIDENTIAL
150529-13	11-00065-S-37	WATERPARK PLACE PHASE I I I AND I V	7.94	0.73	9.2%	COMPLETE	COLLIER	49	25	4	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	PELICAN 1 OWNER, L L C	RESIDENTIAL
140227-9	36-00611-S-03	WATERSIDE AT BAY BEACH PHASE 6	1.95	0.03	1.5%	COMPLETE	LEE	47	24	03	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	L B W B B L L C	RESIDENTIAL
160128-18	36-00611-S-03	WATERSIDE AT BAY BEACH PHASE 6	1.95	0.03	1.4%	COMPLETE	LEE	47	24	03	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	L B W B B L L C	RESIDENTIAL
140514-11	36-00611-S	WATERSIDE DOCK B MAINTENANCE DREDGE (REF 140227-9)	0.53	0.53	99.3%	VOID	LEE	47	24	3	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	L B W B B L L C	OTHER
130701-9	36-06342-P	WEST CYPRESS VIEW	10.84	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	9	COMMERCIAL
140415-10	36-06342-P	WEST CYPRESS VIEW	10.84	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	WEST CYPRESS VIEW, LLP	RESIDENTIAL
160105-15	36-06342-P	WEST CYPRESS VIEW	10.76	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	WEST CYPRESS VIEW L L P	RESIDENTIAL
160505-9	36-06342-P	WEST CYPRESS VIEW	4.66	0.00	0.0%	COMPLETE	LEE	46	25	22	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	WEST CYPRESS VIEW L L P	RESIDENTIAL
140522-12	36-03098-P	WEST LAKE COURT	9.57	0.34	3.6%	COMPLETE	LEE	46	25	31	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WEST BAY HILL L L C	RESIDENTIAL
160524-1		WEST TERRY STREET SIDEWALK	0.70	0.00	0.0%	UNDER REVIEW	LEE	47	25	28	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	CITY OF BONITA SPRINGS	ROADWAY
150403-4	11-03674-P	WHISTLERS GREEN APARTMENTS	16.50	1.68	10.2%	COMPLETE	COLLIER	49	26	16	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	WHISTLERS GREEN, LTD.	RESIDENTIAL
141103-5	11-03634-P	WHITAKER ROAD 5 ACRES	4.65	4.65	100.0%	COMPLETE	COLLIER	50	26	16	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW AGRICULTURAL EXEMPTION)	NEW	CAPRI NAPLES, L L C	AGRICULTURAL
141203-5	11-03646-P	WHITAKER ROAD EAST PARCEL	4.43	4.43	100.0%	COMPLETE	COLLIER	50	26	16	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		AGRICULTURAL
131118-3	11-03512-P	WHITE BOULEVARD AND 23RD STREET INTERSECTION	1.21	0.09	7.7%	COMPLETE	COLLIER	49	26	13	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150330-6	11-03372-P	WHITE BOULEVARD AT CYPRESS CANAL BRIDGE REPLACEMENT	2.40	0.29	12.0%	COMPLETE	COLLIER	49	26	11, 12, 13, 14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
150901-12	11-01770-P	WIDENING OF GOLDEN GATE BLVD FROM WILSON TO DESOTO	34.55	15.12	43.8%	COMPLETE	COLLIER	49	27	1-4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
141006-19	11-01770-P	WIDENING OF GOLDEN GATE BOULEVARD FROM WILSON TO DESOTO	34.55	15.12	43.8%	COMPLETE	COLLIER	49	27	7	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150421-12	11-00253-S-03	WIGGINS BAY CLUBHOUSE	0.94	0.11	11.5%	COMPLETE	COLLIER	48	25	16	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	ESCALANTE TARPON COVE L P	RECREATIONAL
141121-5	36-07485-P	WILD TURKEY STRAND PRESERVE - WOODSTORK FORAGING PILOT PROJ	110.65	19.03	17.2%	COMPLETE	LEE	45	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ENVIRONMENTAL RESTORATION
160127-5	36-07992-P	WILD TURKEY STRAND REGIONAL MITIGATION	587.37	347.73	59.2%	COMPLETE	LEE	46	26	3,4,5	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ENVIRONMENTAL RESTORATION
140516-10	36-05075-P	WILDBLUE	3563.87	1853.22	52.0%	HEARING	LEE	46	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	ALICO EAST FUND L L C	RESIDENTIAL
160107-17	36-05075-P	WILDBLUE	3558.87	1853.12	52.1%	NO RESPONSE	LEE	46	26	7. 8, 17, 18, 19, 20	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	ALICO EAST FUND L L C	RESIDENTIAL
130911-2	36-00252-S	WILDCAT RUN GOLF AND COUNTRY CLUB	514.16	141.92	27.6%	COMPLETE	LEE	46	26	30	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	WILDCAT RUN COUNTRY CLUB	RESIDENTIAL
130828-1	36-03485-P	WILLIAMS ROAD RIGHT TURN LANE AT U S 41	0.64	0.00	0.0%	COMPLETE	LEE	46	25	33	ERP	EXEMP	ENVIRONMENTAL RESOURCE (EXEMPTION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
150611-16	11-03730-P	WILLOW RUN	473.85	177.04	37.4%	COMPLETE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND NEW	NEW	K E WILLOW RUN PROPERTIES L L C	RESIDENTIAL
140522-13	11-03651-P	WINDWARD ISLE (FKA NAPLES VIEW)	11.32	1.90	16.8%	COMPLETE	COLLIER	49	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	AIRPORT PULLING WINDWARD ISLE HOA	RESIDENTIAL
140811-5	11-02603-P-02	WOODCREST DRIVE	2.64	1.21	45.8%	COMPLETE	COLLIER	48	26	25 & 26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ARGO WARM SPRINGS, L L C	ROADWAY
150120-24	11-02081-P-02	WOODCREST DRIVE - PHASE I I	11.12	4.74	42.7%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	RESIDENTIAL
150216-3	11-00167-S	WYNDEMERE COUNTRY CLUB PHASE 2	1.04	0.00	0.0%	COMPLETE	COLLIER	49	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WYNDEMERE COUNTRY CLUB, INC.	RECREATIONAL
140418-16	11-02649-P	YAHL MULCHING MITIGATION MODIFICATION	29.07	17.27	59.4%	NO RESPONSE	COLLIER	49	27	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	YAHL MULCHING AND RECYCLING INC	COMMERCIAL
140321-12	11-00360-S-73	YAHL STREET INDUSTRIAL PROJECT	2.17	0.01	0.6%	COMPLETE	COLLIER	49	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	YAHL STREET PROPERTIES L L C	INDUSTRIAL
140328-15	11-01271-S	YMCA - WALGREENS (BERM)	2.62	0.00	0.0%	COMPLETE	COLLIER	49	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	Y M C A	INSTITUTIONAL
131203-10	36-01606-S-02	YOUBI RESIDENCE SKI LAKE	91.77	48.16	52.5%	COMPLETE	LEE	45	27	34	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	EDENS TEAM L L C	RESIDENTIAL
150115-2	36-01606-S-02	YOUBI SKI LAKE MODIFICATION	91.77	48.16	52.5%	COMPLETE	LEE	45	27	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EDENS TEAM L L C	RESIDENTIAL
150616-4	36-01606-S-02	YOUBI SKI ACADEMY	91.77	48.16	52.5%	COMPLETE	LEE	45	27	34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	EDENS TEAM L L C	COMMERCIAL
140502-11	36-01606-S-02	YOUBI SKI LAKE	91.77	48.16	52.5%	COMPLETE	LEE	45	27	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EDENS TEAM L L C	AGRICULTURAL
150319-2	36-02899-S	ZAXBYS GULF COAST TOWN CENTER	1.25	0.00	0.0%	WITHDRAWN	LEE	46	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	DEKLAM DIVAS L L C	COMMERCIAL

Note: SFWMD applications from 2013 through 2016 were acquired from the SFWMD website (http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=unq_id=1128) July 2016.

EXHIBIT 22

ERPs ISSUED BY SFWMD WITHIN WOOD STORK ACTION AREA

Exhibit 22. ERPS Issued by SWFWMD from July 2013 through July 2016 within Wood Stork Action Area

APPLICATION ID	PERMIT NO.	APPROVED DATE	NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS
120814-14	11-03462-P	July 1, 2013	LORDS WAY 30	91.11	59.82	22.37	3.51	0.00	65.7%
120808-24	11-03477-P	July 29, 2013	BRANDON	50.66	50.47	19.38	11.87	0.16	99.6%
130410-1	36-03764-P-02	July 29, 2013	GATOR DOMESTIC INDUSTRIAL CENTER	87.83	62.60	0.00	0.00	0.00	71.3%
130821-6	36-05518-P-04	October 11, 2013	ALICO LAKES VILLAGE PARCELS C, D, F, AND I	9.28	2.98	0.00	0.00	0.00	32.1%
130619-16	36-08053-P	October 14, 2013	CORDERA (AKA BONITA 23)	22.60	20.07	0.00	0.00	0.00	88.8%
130919-13	36-07808-P	November 7, 2013	AMERICAN HOUSE - BONITA SPRINGS	25.05	0.09	0.00	0.00	0.00	0.4%
130918-12	11-03344-P	November 8, 2013	GORDON RIVER GREENWAY PARK	120.85	105.31	0.00	0.00	0.00	87.1%
130830-15	11-00806-S-09	November 15, 2013	THE MOORINGS AT GREY OAKS	15.55	0.00	0.00	0.00	0.00	0.0%
121108-10	36-04886-P	December 6, 2013	WAL-MART SUPERCENTER STORE NO. 5347 ESTERO FLORIDA	74.22	49.65	0.00	0.00	0.00	66.9%
130906-19	36-06488-P	December 6, 2013	ALICO FAMILY GOLF CENTER L L C	30.18	0.00	0.00	0.00	0.00	0.0%
121212-13	36-00678-S-36	December 10, 2013	TIMBERWOOD PRESERVE AT GATEWAY	29.76	25.96	0.00	14.48	3.04	87.2%
131024-5	36-05518-P-05	December 11, 2013	PARCEL C AT ALICO LAKES	1.03	0.48	0.00	0.00	0.00	46.4%
131018-4	36-00678-S-38	December 12, 2013	ALTA RESOURCES PARKING LOT EXPANSION	10.12	0.11	0.00	0.00	0.00	1.1%
131021-11	36-00142-S-43	December 20, 2013	8TH ST SW AT GUNNERY ROAD	1.73	0.00	0.00	0.00	0.00	0.0%
131031-5	36-06211-P	December 20, 2013	UNIVERSITY PLAZA WEST ROADWAY, DRAINAGE, UTILITIES & LOT A-1	2.01	2.01	0.00	0.00	0.00	99.8%
131031-13	36-01148-S	December 30, 2013	METRO PKWY EXT (SR739) DRAINAGE REVISIONS (BASINS, B,C,D)	82.07	23.90	0.00	0.00	0.00	29.1%
131119-1	36-03735-P-02	January 7, 2014	RENAISSANCE CENTER PARCEL A	2.11	0.00	0.00	0.00	0.00	0.0%
131125-1	36-00288-S-23	January 15, 2014	HERTZ GLOBAL HEADQUARTERS	34.25	0.00	0.00	0.00	0.00	0.0%
131212-3	36-02881-S	January 21, 2014	FGCU CAMPUS CENTRAL ENERGY PLANT	5.20	0.93	0.00	0.00	0.00	17.9%
131213-6	11-00465-S-03	January 23, 2014	IMMOKALEE AGRICOM PARK PHASE 2 LOTS 11 AND 12	5.50	0.07	0.00	0.00	0.00	1.3%
130905-2	11-00360-S-40	January 31, 2014	TURKUOISE TRADING WAREHOUSE	0.68	0.00	0.00	0.00	0.00	0.0%
131113-13	11-00360-S-58	February 3, 2014	AQUATERRA	2.23	0.00	0.00	0.00	0.00	0.0%
130816-20	36-06518-P	February 19, 2014	ESTERO PLACE	48.21	0.00	0.00	0.00	4.78	0.0%
131202-3	11-01638-P	February 19, 2014	CREEKSIDE COMMERCE PARK EAST	38.78	22.96	0.00	0.00	0.00	59.2%
131119-13	11-03198-P	February 21, 2014	MARSILEA VILLAS	10.28	10.17	0.00	0.00	0.00	98.9%
140204-7	36-00678-S-39	March 4, 2014	EASTLINKS BUSINESS PARK LOT 4 AT GATEWAY (GARTNER BLDG 2)	7.41	0.00	0.00	0.00	0.00	0.0%
140121-21	11-01821-P	March 5, 2014	SENECA WAY AT TALIS PARK	19.92	0.93	0.00	0.00	0.00	4.7%
140121-5	36-00288-S-28	March 5, 2014	PEBBLE POINTE AT THE BROOKS	38.06	8.23	0.00	0.00	0.00	21.6%
130826-4	11-03522-P	March 7, 2014	MERIDIAN VILLAGE	11.48	10.34	0.00	0.21	1.87	90.1%
140106-12	36-06400-P-02	March 19, 2014	EASTERN METAL SUPPLY	19.97	0.00	0.00	0.23	0.00	0.0%
140127-10	36-06211-P-03	March 19, 2014	B JS RESTAURANT - UNIVERSITY PLAZA	2.22	2.21	0.00	0.00	0.00	99.6%
140128-7	36-00288-S-15	March 19, 2014	AMERICAN HOUSE - ESTERO/COCONUT POINT	14.24	3.88	0.00	0.00	0.00	27.3%
140108-17	36-04499-P	March 28, 2014	HAWTHORNE FKA TESONE	212.62	58.58	0.00	0.00	0.00	27.6%
140204-1	11-01859-P-03	March 28, 2014	CITY MATTRESS AT SUPER TARGET	1.56	0.00	0.00	0.00	0.00	0.0%

APPLICATION ID	PERMIT NO.	APPROVED DATE	NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS
130530-22	36-05188-P	March 31, 2014	F G C U INNOVATION HUB	240.96	240.92	0.00	0.00	0.00	100.0%
140102-8	36-00678-S-18	March 31, 2014	PELICAN PRESERVE NINE HOLES (BASIN 15)	28.36	17.36	0.00	0.00	0.00	61.2%
131220-8	11-00715-S-17	April 3, 2014	PINE AIR LAKES (DICKS SPORTING GOODS NAPLES)	19.59	6.82	0.00	0.00	0.00	34.8%
140110-1	11-01638-P	April 4, 2014	LANDMARK HOSPITALS LONG-TERM ACUTE CARE HOSPITAL AND M O B	4.36	4.25	0.00	0.00	0.00	97.6%
140206-8	11-02603-P	April 4, 2014	MASSEY STREET OUTFALL IMPROVEMENTS	4.12	0.42	0.00	0.00	0.00	10.2%
140214-27	36-07747-P	April 4, 2014	CENTER FOR HOPE	46.53	0.00	0.02	0.00	0.00	0.0%
140218-9	11-01638-P	April 4, 2014	MEMORY CARE FACILITY AT CREEKSIDE EAST (TRACT 3)	6.00	1.81	0.00	0.00	0.00	30.2%
130927-9	36-00575-S-02	April 7, 2014	MARSH LANDING	61.52	16.17	0.00	0.00	0.16	26.3%
121214-4	36-04853-P-05	April 8, 2014	BOTANICA SOUTH	116.39	4.88	0.00	0.00	0.00	4.2%
140129-4	36-02988-P	April 10, 2014	U S 41 TURN LANE IMPROVEMENTS FOR RACETRAC ESTERO	10.02	9.14	0.00	0.00	0.00	91.2%
131206-10	36-08139-P	April 11, 2014	82 PLAZA	3.88	0.00	0.00	0.00	0.00	0.0%
140224-18	36-06211-P-03	April 11, 2014	UNIVERSITY PLAZA WEST - CHILIS LOT A 2	1.79	1.78	0.00	0.00	0.00	99.7%
130716-3	36-03930-P-02	April 14, 2014	RACETRAC ESTERO	10.02	9.14	0.00	0.00	0.00	91.2%
131127-9	11-01683-P	April 14, 2014	CEDAR HAMMOCK GOLF COURSE MODIFICATION	415.29	200.04	0.02	0.00	0.00	48.2%
140307-25	11-00360-S-72	April 17, 2014	THE BROKERAGE L L C	0.25	0.00	0.00	0.00	0.00	0.0%
140226-7	36-01871-S-09	April 18, 2014	UNIVERSITY HIGHLAND - N M DEVELOPMENT	205.57	186.03	0.00	0.00	0.00	90.5%
140312-14	36-01620-S	April 30, 2014	PELICAN COLONY ADDITIONAL 9 HOLE GOLF COURSE	98.57	35.60	0.00	0.00	0.00	36.1%
140312-11	36-02026-S-02	May 2, 2014	NATURA BONITA AT FAIRWAYS	27.17	4.03	0.00	0.00	0.00	14.8%
140306-11	36-05142-P-05	May 7, 2014	COCONUT TRACE RETAIL DEVELOPMENT, PHASE I I	1.53	0.00	0.00	0.00	0.00	0.0%
130916-15	11-02891-P	May 19, 2014	TWIN EAGLES SOUTH (F K A IMMOKALEE ROAD SOUTH)	560.85	647.20	0.00	23.61	143.78	115.4%
140410-7	36-06211-P-10	May 29, 2014	SHOPS AT UNIVERSITY PLAZA	3.42	0.44	0.00	0.00	0.00	12.9%
131218-15	11-01662-P-12	June 21, 2014	EVERGLADES AMMO (LOT 33 - WHITE LAKE CORPORATE PARK PHASE 2)	1.17	0.00	0.00	0.00	0.00	0.0%
140506-13	36-00288-S-02	June 25, 2014	THE BROOKS - OS-1 AND WATER QUALITY REVISIONS	7.71	0.00	0.00	0.00	0.00	0.0%
140106-2	11-02893-P	June 27, 2014	LIVING WORD FAMILY CHURCH	37.50	16.31	0.00	0.00	0.00	43.5%
140516-14	36-08230-P	June 28, 2014	MIRAGE BAY LUXURY APARTMENTS	3.73	0.00	0.00	0.00	0.00	0.0%
140401-12	36-01871-S-12	July 1, 2014	SPRINGS AT ESTERO	21.34	14.91	0.00	0.00	0.00	69.9%
150422-12	26-00143-S	July 1, 2014	DEVILS GARDEN SLOUGH WETLANDS RESTORATION PLAN (W R P)	6651.35	1434.97	0.00	0.00	0.00	21.6%
140227-9	36-00611-S-03	July 3, 2014	WATERSIDE AT BAY BEACH PHASE 6	1.95	0.03	0.00	0.00	0.00	1.5%
140408-2	11-00904-S	July 3, 2014	AMERICAN FARMS 5 A C	52.44	16.53	0.00	0.00	0.00	31.5%
140214-5	11-02654-P	July 9, 2014	SIENNA RESERVE - FKA HAMILTON GREENS	29.63	12.87	0.00	0.00	1.32	43.4%
140214-5	11-02654-P	July 9, 2014	SIENNA RESERVE - FKA HAMILTON GREENS	29.63	14.14	0.40	15.44	1.32	47.7%
140321-13	11-03577-P	July 14, 2014	TEMPLE CITRUS GROVE	131.57	0.00	0.00	0.00	0.00	0.0%
140527-10	11-00737-S-08	July 14, 2014	PROSCAN MEDICAL BUILDING	1.02	0.00	0.00	0.00	0.00	0.0%
140303-1	11-01140-S	July 21, 2014	L A S I P - LELY MANOR BASIN WINGSOUTH AIRPARK IMPROVEMENTS	11.57	0.00	5.97	0.00	0.00	0.0%
140424-13	11-03571-P	July 22, 2014	ORCHID RUN APARTMENTS	21.59	1.17	0.00	0.00	0.00	5.4%
140604-2	11-02234-P	July 22, 2014	QUARRY PHASE 7	7.75	0.02	0.00	0.00	0.00	0.3%
140707-3	11-00360-S-87	July 30, 2014	AGGREGATE SPECIALTIES	3.74	0.00	0.00	0.00	0.00	0.0%
140227-5	36-03254-P	August 1, 2014	CORKSCREW SHORES AMENITY CENTER	12.36	0.00	0.00	0.00	0.00	0.0%

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140516-15	36-01620-S-13	August 15, 2014	DISCOVERY DAY ACADEMY	2.28	0.00	0.00	0.00	0.00	0.0%
140515-2	36-05198-P-03	August 19, 2014	ARBYS ALICO	1.25	0.00	0.00	0.00	0.00	0.0%
140703-12	11-00212-S-135	August 19, 2014	COASTAL BEVERAGE WAREHOUSE AND MAINTENANCE FACILITY	2.38	0.00	0.00	0.00	0.00	0.0%
131226-1	36-05431-P	August 29, 2014	TORTUGA PRESERVE	83.67	63.67	0.00	0.00	0.00	76.1%
140418-4	36-04589-P-08	September 2, 2014	HARLEY DAVIDSON MOTOR SPORTS SOLUTIONS	16.53	0.00	0.00	0.00	0.00	0.0%
130312-17	11-01821-P	September 3, 2014	TALIS PARK TRAIL SYSTEM	463.81	134.52	0.03	0.00	0.00	29.0%
140722-2	11-00212-S-136	September 8, 2014	3706 PROGRESS AVE	1.13	0.00	0.00	0.00	0.00	0.0%
140718-12	36-00678-S	September 10, 2014	HAMPTON PARK PARCEL J (PHASE 7)	294.09	65.24	0.00	0.00	0.00	22.2%
140425-12	11-02031-P	September 15, 2014	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	19.47	18.76	15.97	0.00	0.00	96.4%
140206-9	11-01140-S	September 16, 2014	L A S I P - COUNTY BARN ROAD	18.22	10.77	2.67	0.00	0.00	59.1%
140312-10	36-04753-P	September 19, 2014	ESTERO OAKS M P D	36.88	3.94	0.00	0.00	0.00	10.7%
140328-16	11-00682-S-02	September 19, 2014	WALGREENS - PINE RIDGE AND AIRPORT PULLING	2.62	0.00	0.14	0.00	0.00	0.0%
140723-5	36-01687-S-03	September 19, 2014	L W MARKETING ANNEX	0.60	0.00	0.00	0.00	0.00	0.0%
140702-14	11-01662-P-13	September 23, 2014	HILTON MOVING STORAGE -LOT 21 WHITE LAKE CORPORATE PARK PH 3	1.71	0.00	0.00	0.00	0.00	0.0%
140626-11	11-01821-P	September 25, 2014	CARRARA, VYNE HOUSE, AND GOLF STUDIO MODIFICATION	16.82	1.17	0.00	0.00	0.00	7.0%
140806-14	11-00364-S-11	September 25, 2014	BERKSHIRE PLACE	2.58	0.00	0.00	0.00	0.00	0.0%
140808-7	11-02234-P-04	September 25, 2014	HERITAGE BAY COMMONS TRACT D	11.53	0.00	0.00	0.00	0.00	0.0%
140813-15	36-05142-P-06	October 2, 2014	AUTUMN LEAVES OF ESTERO	3.22	0.00	0.00	0.00	0.00	0.0%
140724-12	36-08256-P	October 9, 2014	HIGH TECH PROPERTIES	4.65	4.13	0.00	0.00	0.00	88.9%
140428-10	11-00396-S	October 13, 2014	I-75 WIDENING FROM S R 951 TO GOLDEN GATE PKWY	16.55	9.53	0.00	0.00	0.00	57.6%
140918-11	36-00909-S-06	October 14, 2014	ALICO INDUSTRIAL CENTER LOT 3 (ALICO CENTER AUTO & TIRE)	1.00	0.00	0.00	0.00	0.00	0.0%
130905-8	26-01188-P	October 16, 2014	S R 82 WIDENING FROM LEE CO LINE TO COLLIER CO LINE	48.25	6.75	4.19	0.00	0.00	14.0%
140911-7	11-02242-P-03	October 20, 2014	MY OTHER PLACE 2	1.43	0.00	0.00	0.00	0.00	0.0%
140306-12	11-02336-P-03	October 27, 2014	DEL WEBB 201-203	164.60	13.55	0.00	0.00	0.00	8.2%
140703-5	36-05198-P-05	October 30, 2014	TWIN PEAKS RESTAURANT	1.63	0.00	0.00	0.00	0.00	0.0%
140529-2	11-02279-P	November 5, 2014	NATIVE POND RESTORATION ON THE FLORIDA PANTHER N W R	4.90	4.90	0.00	4.07	0.00	99.9%
140225-24	26-00617-S	November 6, 2014	ALICO PORT LA BELLE BASIN 15-18	6526.74	591.41	0.00	429.11	0.00	9.1%
140124-10	11-00396-S-03	November 12, 2014	I-75 RECREATIONAL ACCESS SITES AND NORTH REST AREA AT M M 63	9.88	0.00	0.00	0.00	0.32	0.0%
140812-16	36-07447-P	November 12, 2014	DOWNTOWN ESTERO	34.32	5.13	0.00	0.00	0.00	15.0%
140625-7	11-03463-P	November 17, 2014	TUSCANY POINTE (COLLIER 36)	9.29	9.28	0.00	0.00	0.00	99.9%
140815-9	36-03865-P-06	November 19, 2014	COURTYARDS AT ESTERO APARTMENTS	8.58	0.00	0.00	0.00	0.00	0.0%
140723-12	11-00968-S	November 20, 2014	S R 29 WILDLIFE CROSSINGS	31.46	33.36	0.00	0.00	0.00	106.0%
140930-20	11-01662-P-06	November 21, 2014	HERITAGE BUILDERS STORAGE FACILITY	0.56	0.00	0.00	0.00	0.00	0.0%
140620-1	36-03568-P	November 25, 2014	THE PENINSULA PHASE I V	0.57	0.00	0.00	0.00	0.00	0.0%
140826-2	11-01821-P	November 26, 2014	CORSICA WAY AT TALIS PARK	3.07	0.00	0.00	0.00	0.00	0.0%
141113-1	36-03098-P	November 26, 2014	LAUREL OAKS LOTS 31-34	0.98	0.19	0.00	0.00	0.00	19.6%
140904-2	36-08291-P	December 1, 2014	OAKS OF ESTERO	10.17	19.06	0.00	0.00	0.00	187.5%
140528-6	36-04817-P	December 3, 2014	OAK RIDGE SUBDIVISION	7.78	0.00	0.00	0.00	0.00	0.0%
141007-4	11-02748-P	December 3, 2014	AMERIMED CENTER	18.82	0.57	0.00	0.00	0.00	3.0%

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131031-6	11-01714-P	December 8, 2014	GOLF CLUB OF THE EVERGLADES	509.55	311.88	7.54	18.85	13.67	61.2%
141014-9	11-01042-S-02	December 8, 2014	RAILHEAD CROSSING	2.49	2.49	0.00	0.00	0.00	99.8%
141028-2	36-03946-P-03	December 11, 2014	IMPERIAL BONITA PLAZA (A PORTION OF LOT 5)	9.95	0.00	0.00	0.00	0.00	0.0%
141017-2	11-01821-P	December 12, 2014	THE RESIDENCES AT VYNE HOUSE	0.76	0.01	0.00	0.00	0.00	0.8%
141029-14	36-05198-P-06	December 17, 2014	JASONS DELI - GULFCOAST LANDINGS	1.39	0.00	0.00	0.00	0.00	0.0%
141014-7	11-01638-P	December 23, 2014	CREEKSIDE RETAIL CENTER (AKA CREEKSIDE CORNERS) - TRACT 5B	28.91	22.90	0.00	0.00	0.00	79.2%
141031-8	11-00396-S	December 23, 2014	I-75 WIDENING FROM S R 951 TO GOLDEN GATE PKWY	191.13	60.81	0.00	0.00	0.00	31.8%
141103-22	36-03930-P-03	December 24, 2014	COCONUT POINT HONDA	6.02	5.89	0.00	0.00	0.00	97.8%
140812-11	11-02234-P	January 2, 2015	QUARRY PHASE 7	0.47	0.45	0.00	0.00	0.00	95.4%
140507-19	11-01743-P	January 5, 2015	NAPLES MUNICIPAL AIRPORT WEST QUAD POND	11.08	2.23	2.00	0.00	0.00	20.1%
140924-10	36-00478-S-06	January 5, 2015	ESTERO TOWN CENTER	3.71	0.40	0.00	0.00	0.00	10.8%
140520-10	36-06665-P	January 7, 2015	BEACH STORAGE	3.50	1.10	0.00	0.00	0.00	31.5%
141117-10	11-02234-P-08	January 8, 2015	N C H HEALTHCARE- NORTHEAST	3.36	0.12	0.00	0.00	0.00	3.6%
140124-13	36-03568-P-05	January 12, 2015	CENTERPLACE	981.01	137.53	44.49	24.09	1.43	14.0%
141118-2	11-00651-S-04	January 12, 2015	PREMIER AUTO SUITES	16.34	1.94	0.00	0.00	0.00	11.9%
140522-13	11-03651-P	January 27, 2015	WINDWARD ISLE (FKA NAPLES VIEW)	11.32	1.90	0.28	0.00	0.00	16.8%
140331-16	11-00065-S	February 4, 2015	PELICAN BAY COMMONS PARKING LOT MOD AND TRAM STATION	9.41	0.00	0.00	0.00	0.00	0.0%
141003-14	36-01871-S-09	February 16, 2015	TIDEWATER (UNIVERSITY HIGHLAND TRACT 1)	136.50	129.48	0.00	0.00	0.00	94.9%
141205-13	11-02336-P	February 16, 2015	A M MODIFICATION TO BASINS UN 1, UN 4, UN 6, AND IR 5	167.03	27.18	0.00	0.00	0.00	16.3%
150205-1	36-03034-P-08	February 25, 2015	BAY LANDING MEMORY CARE (BAY LANDING-TRACT C)	5.57	0.54	0.00	0.00	0.00	9.7%
130718-23	11-02135-P	March 6, 2015	OFF-ROAD VEHICLE TRAIL STABILIZATION	104.65	84.11	0.00	N/A	N/A	80.4%
150109-21	11-00898-S	March 9, 2015	OLDE FLORIDA GOLF CLUB WETLAND IMPACT	0.06	0.00	0.04	0.00	0.00	0.0%
140730-3	11-00212-S-137	March 13, 2015	LANE PARK	5.29	4.01	0.00	0.00	0.00	75.8%
140919-18	36-08340-P	March 13, 2015	CANTERFIELD VILLAGE	19.16	18.82	0.06	0.37	3.15	98.2%
150116-1	36-06211-P-03	March 13, 2015	PANERA BAKERY CAFE - UNIVERSITY PLAZA	1.24	1.23	0.00	0.00	0.00	99.3%
141121-5	36-07485-P	March 15, 2015	WILD TURKEY STRAND PRESERVE - WOODSTORK FORAGING PILOT PROJ	110.65	19.03	0.00	0.00	0.00	17.2%
141118-16	11-02234-P-09	March 19, 2015	N C H HEALTHCARE- TEMPORARY OFFICE	1.01	0.00	0.00	0.00	0.00	0.0%
141209-6	11-00806-S-04	March 19, 2015	NAPLES GRANDE CLUBHOUSE	4.91	1.34	0.00	0.00	0.00	27.4%
150121-9	11-01821-P	March 19, 2015	CORSICA AT TALIS PARK AND TALIS PARK SPORTS COMPLEX	29.15	0.40	0.00	0.00	0.00	1.4%
141215-18	36-04853-P-06	March 23, 2015	ARBORWOOD PRESERVE- BASIN B3	256.76	20.72	0.00	0.00	0.00	8.1%
141201-5	36-00678-S-40	March 27, 2015	GATEWAY PARCEL 2B-1	17.28	3.35	0.00	0.00	0.00	19.4%
140327-4	11-03661-P	March 30, 2015	WARM SPRINGS	114.11	110.65	53.39	29.35	1.86	97.0%
141126-17	36-06431-P	March 30, 2015	EMERSON VILLAGE	26.44	8.94	0.00	0.00	0.00	33.8%
141010-5	11-01839-P-02	April 3, 2015	LA MORADA (F K A INDIAN HILL ESTATES)	224.54	70.75	0.00	0.00	0.00	31.5%
141223-8	11-01839-P	April 3, 2015	CALUSA PINES	299.27	85.34	0.00	0.00	0.00	28.5%
141112-2	11-03669-P	April 7, 2015	MERCEDES BENZ OF BONITA SPRINGS	7.93	7.88	0.60	0.00	1.20	99.3%
141110-3	36-01620-S	April 8, 2015	BAYSIDE IMPROVEMENT/BAY CREEK COMMUNITY DEVELOPMENT DISTRICT	780.45	260.65	0.00	0.00	0.00	33.4%
150218-2	36-07003-P	April 8, 2015	VILLA MAGNIFICA FKA PRESERVE AT SAN CARLOS PARK	9.28	7.94	0.00	0.00	0.00	85.5%

APPLICATION ID	PERMIT NO.	APPROVED DATE	NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS
140516-6	36-08367-P	April 13, 2015	FRESHMAN DANIELS	44.15	33.65	15.25	0.00	0.00	76.2%
150204-11	36-05188-P-02	April 17, 2015	F G C U EMERGENT TECH INSTITUTE	6.61	6.61	0.00	0.00	0.00	100.1%
150120-24	11-02081-P-02	April 21, 2015	WOODCREST DRIVE - PHASE I I	11.12	4.74	0.00	0.00	0.00	42.6%
150311-9	36-00379-S-16	April 22, 2015	KING BRANDS WAREHOUSE EXPANSION	3.29	0.00	0.00	0.00	0.00	0.0%
150331-4	36-00839-S-09	May 4, 2015	JETPORT LOT 15 - MOTORSPORTS OF FORT MYERS	5.27	0.00	0.00	0.00	0.00	0.0%
140725-8	36-03568-P	May 11, 2015	UNIVERSITY VILLAGE	502.99	448.18	0.00	0.00	0.00	89.1%
150324-23	11-01553-P-07	May 11, 2015	LOT 3 - CREEKSIDE COMMERCE PARK (AESTHETIC SURGERY CENTER)	1.32	0.05	0.00	0.00	0.00	3.6%
150212-7	36-01661-S	May 13, 2015	SUN HARVEST CITRUS	2.33	0.06	0.00	0.00	0.00	2.6%
150302-15	36-03908-P-14	May 13, 2015	LOT 18 ALICO COMMERCIAL PARK (NOUGHTON - DREW CIRCLE)	1.24	0.03	0.00	0.00	0.00	2.3%
150318-5	11-01821-P	May 13, 2015	CORSICA WAY MULTI-FAMILY	14.44	0.00	0.00	0.00	0.00	0.0%
140530-12	36-08369-P	May 14, 2015	BONITA SPRINGS CAR WASH	1.07	0.93	0.58	0.00	0.00	87.0%
150401-8	11-02234-P-05	May 20, 2015	CAMERON COMMONS UNIT 1- TRACT 5	1.05	0.00	0.00	0.00	0.00	0.0%
150403-9	36-06431-P	May 21, 2015	EMERSON VILLAGE	32.10	14.63	0.00	0.00	0.00	45.6%
141126-16	11-02931-P-02	May 29, 2015	ULTIMATE EXPRESS CAR WASH	1.36	1.36	0.00	0.00	0.00	100.0%
150414-6	11-02912-P	May 29, 2015	ALL SEASONS OF NAPLES	9.47	0.00	0.00	0.16	0.00	0.0%
150416-8	11-01644-P-09	May 29, 2015	GROUP PRESIDENT ELECTRONICS U S A	1.90	0.00	0.00	0.00	0.00	0.0%
150309-1	36-00287-S	June 3, 2015	FIDDLESTICKS BIKE PATH	14.91	4.40	0.20	0.00	0.00	29.5%
150107-11	11-03462-P	June 5, 2015	ESTILO (FKA LORDS WAY 30)	106.81	73.21	0.00	3.51	0.00	68.5%
150421-8	11-01638-P	June 16, 2015	CREEKSIDE CORNERS (CREEKSIDE EAST - TRACT 5 B)	7.75	7.62	0.00	0.00	0.00	98.3%
141223-22	11-03692-P	June 19, 2015	MANDALAY PLACE	7.28	7.28	0.00	0.00	0.00	100.0%
150506-12	36-08410-P	June 25, 2015	ESTERO 4.2	4.22	3.79	0.00	0.00	0.00	89.8%
150219-18	11-01714-P	June 29, 2015	GOLF CLUB OF THE EVERGLADES	522.65	321.93	0.00	0.00	0.00	61.6%
150507-12	36-02988-P	July 1, 2015	S R 45 (U S 41) NORTH OF BONITA BEACH ROAD TO U S 41	75.05	0.00	0.00	0.00	0.00	0.0%
150506-14	26-00516-S	July 2, 2015	I P S - RENFROE FARM	476.56	83.18	0.00	0.00	0.00	17.5%
141205-17	11-00999-S	July 8, 2015	IMMOKALEE REGIONAL AIRPORT	817.59	25.45	0.00	0.00	0.00	3.1%
150513-9	36-05136-P-09	July 9, 2015	EXECUTIVE OFFICES AND TRAINING FACILITY	4.04	0.08	0.00	0.00	0.00	1.9%
150414-1	11-00715-S-17	July 15, 2015	PINE AIR LAKES (OUTPARCEL 1) - ALDI NAPLES	1.54	0.00	0.00	0.00	0.00	0.0%
150312-14	36-01327-S-07	July 16, 2015	SIX MILE CYPRESS SENIOR HOUSING FACILITY	8.91	0.00	0.00	0.00	0.00	0.0%
150526-3	36-05142-P-08	July 17, 2015	SHOPPES OF COCONUT TRACE	1.90	0.00	0.00	0.00	0.00	0.0%
150421-13	36-03735-P-03	July 23, 2015	DIAMOND OAKS VILLAGE	8.28	0.12	0.00	0.00	0.00	1.4%
140811-5	11-02603-P-02	July 24, 2015	WOODCREST DRIVE	2.64	1.21	0.91	0.00	0.00	45.7%
140908-6	11-03706-P	July 24, 2015	TREE FARM ROAD EXTENSION	8.55	7.29	3.50	0.00	0.00	85.3%
150611-4	11-03173-P	July 27, 2015	SANDALWOOD VILLAGE	7.79	7.73	0.00	0.00	0.00	99.2%
140516-10	36-05075-P	August 3, 2015	WILDBLUE	3563.89	1853.23	210.92	850.98	484.72	52.0%
150225-8	36-07151-P	August 10, 2015	S R 82 FROM LEE BOULEVARD TO SHAWNEE ROAD	93.42	54.22	1.68	0.00	0.00	58.0%
150514-1	36-00317-S-02	August 12, 2015	ASKAR RETAIL CENTER	0.98	0.00	0.00	0.00	0.00	0.0%
150623-2	36-00142-S	August 19, 2015	S W RECHARGE PROJECT MODIFICATION	1.24	0.30	0.00	0.00	0.00	24.5%
150330-15	36-08425-P	August 21, 2015	PINELAND PRESERVE	17.46	10.34	0.00	0.25	0.20	59.2%
150604-3	36-04753-P	August 21, 2015	ESTERO OAKS M P D	36.88	3.94	0.00	0.00	0.00	10.7%
150710-2	36-00678-S-18	August 25, 2015	PELICAN PRESERVE NINE HOLES (BASINS 12, 14, 15 & 15A)	232.15	145.86	0.00	0.00	0.00	62.8%
150713-4	11-02234-P-02	August 26, 2015	HERITAGE BAY WASTEWATER PUMP STATION	1.56	1.39	0.00	0.00	0.00	88.8%

APPLICATION ID	PERMIT NO.	APPROVED DATE	NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS
150618-1	36-03908-P	September 15, 2015	CAM COURT DON BROOKS	2.08	0.00	0.00	0.00	0.00	0.0%
150707-12	36-06211-P-11	September 24, 2015	DRURY INN AND SUITES AT UNIVERSITY PLAZA WEST	2.64	2.27	0.00	0.00	0.00	86.0%
150702-16	11-02031-P	September 30, 2015	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	21.66	21.64	0.00	0.00	0.00	99.9%
150806-12	11-00360-S-97	September 30, 2015	BONNESS INC	7.86	0.00	0.00	0.00	0.00	0.0%
150813-8	36-01019-S-18	October 2, 2015	MAINLINE IND PARK - E 1/2 OF LOT 8 (TALLOWMASTERS WAREHOUSE)	1.13	0.00	0.00	0.00	0.00	0.0%
150909-8	11-02268-P-09	October 8, 2015	AUTOZONE AT MISSION HILLS SHOPPING CENTER (PARCEL 8)	1.49	0.00	0.00	0.00	0.00	0.0%
150831-16	11-03661-P	October 20, 2015	WARM SPRINGS	99.69	96.24	0.00	0.00	0.00	96.5%
150904-3	11-01821-P	October 30, 2015	VIANSA AT TALIS PARK	15.08	0.88	0.00	0.00	0.00	5.8%
150922-1	11-00212-S-138	November 6, 2015	MERCEDES-BENZ NAPLES PARKING ANNEX (PRODUCTION PARK BASIN 4)	2.82	0.00	0.00	0.00	0.00	0.0%
150803-2	11-00360-S-98	November 10, 2015	VIO CENTER	0.64	0.00	0.00	0.00	0.00	0.0%
150728-9	11-01714-P	November 11, 2015	GOLF CLUB OF THE EVERGLADES	12.77	8.46	0.00	0.00	0.00	66.3%
150811-3	36-04589-P-08	November 12, 2015	HARLEY DAVIDSON - MOTOR SPORTS	16.53	0.00	0.00	0.00	0.00	0.0%
151001-4	36-05142-P-09	November 12, 2015	COCONUT RETAIL CENTER	1.40	0.00	0.00	0.00	0.00	0.0%
150928-3	36-05136-P-10	November 20, 2015	S W INTERNATIONAL TRACT F-3	4.11	0.01	0.00	0.00	0.00	0.2%
151005-17	11-02336-P-09	November 25, 2015	ANTHEM PARKWAY & MAPLE RIDGE PHASES 4 & 5 (BASIN PS1-SOUTH)	327.50	29.80	0.00	0.00	0.00	9.1%
150821-13	36-01303-S	December 3, 2015	LEE CO COMPLETE ST INITIATIVE TIGER GRANT 19 DANIELS PKWY	8.43	1.78	1.28	0.33	0.00	21.1%
150730-1	36-00080-S	December 4, 2015	S W F I A REMEDIATION OF HAZARDOUS WILDLIFE AREAS PH. 2	152.72	82.50	20.21	48.40	0.00	54.0%
151023-7	11-02234-P-07	December 7, 2015	C R-951 EXTENSION (WEATHERED STONE DRIVE - TORRE VISTA LANE)	4.34	0.02	0.00	0.00	0.00	0.5%
151013-11	11-03748-P	December 10, 2015	OUR LADY OF GUADALUPE	8.93	0.00	0.00	0.00	0.00	0.0%
140620-19	11-00182-S	December 11, 2015	BENTLEY VILLAGE - WEST AND EAST CLUB HOUSES	26.07	1.56	0.00	0.00	0.00	6.0%
150915-2	11-01743-P	December 15, 2015	ALLEN HANGAR AND TAXILANE F AT NAPLES MUNICIPAL AIRPORT	3.69	0.00	0.00	0.00	0.00	0.0%
150820-1	11-00418-S-06	December 16, 2015	PUBLIX ORANGETREE	9.98	0.00	0.00	0.00	0.00	0.0%
151102-3	11-03745-P	December 16, 2015	BIZ PARK	3.80	0.00	0.00	0.00	0.00	0.0%
151102-18	11-02234-P-12	December 17, 2015	RACETRAC AT BELLAIRE BAY	1.68	0.00	0.00	0.00	0.00	0.0%
150914-23	36-08230-P	December 18, 2015	MIRAGE BAY LUXURY APARTMENTS	3.71	0.00	0.00	0.00	0.00	0.0%
150720-1	11-01737-P	December 21, 2015	IMMOKALEE-COLLIER INTERSECTION IMPROVEMENTS	17.06	2.51	0.00	0.00	0.00	14.7%
150715-2	36-08487-P	December 23, 2015	H AND E EQUIPMENT SERVICES	8.16	0.00	0.00	0.00	0.00	0.0%
150911-1	36-00080-S	December 23, 2015	TERMINAL ACCESS ROADWAY WIDENING	38.04	0.14	0.00	0.00	0.00	0.4%
151110-12	11-00433-S-14	December 23, 2015	TOLLGATE PUD (LOT 22) - K A M CONCRETE PUMPING 2	2.72	0.00	0.00	0.00	0.00	0.0%
150914-16	36-04234-P-05	December 31, 2015	BONITA NATIONAL	500.27	38.03	0.00	0.00	0.00	7.6%
151116-18	36-03761-P	December 31, 2015	LEELAND HEIGHTS BLVD SIDEWALK	11.54	0.00	0.00	0.00	0.00	0.0%
151012-7	36-08510-P	January 8, 2016	RESTAURANT DEPOT OF FORT MYERS	7.47	0.00	0.00	0.00	0.00	0.0%
150924-5	11-03750-P	January 15, 2016	HADLE NURSERY	36.21	20.74	0.00	0.00	0.00	57.3%
151120-2	36-00288-S-29	January 19, 2016	CITY MATTRESS AT COCONUT POINT	3.37	0.00	0.00	0.00	0.00	0.0%
151202-9	11-03752-P	January 20, 2016	TIDE / STARBUCKS AT 4099 TAMIAMI TRAIL NORTH	3.08	0.00	0.00	0.00	0.00	0.0%
151123-3	11-01662-P-24	January 21, 2016	C & M ASPHALT PAVING CORPORATION	0.96	0.12	0.00	0.00	0.00	12.3%

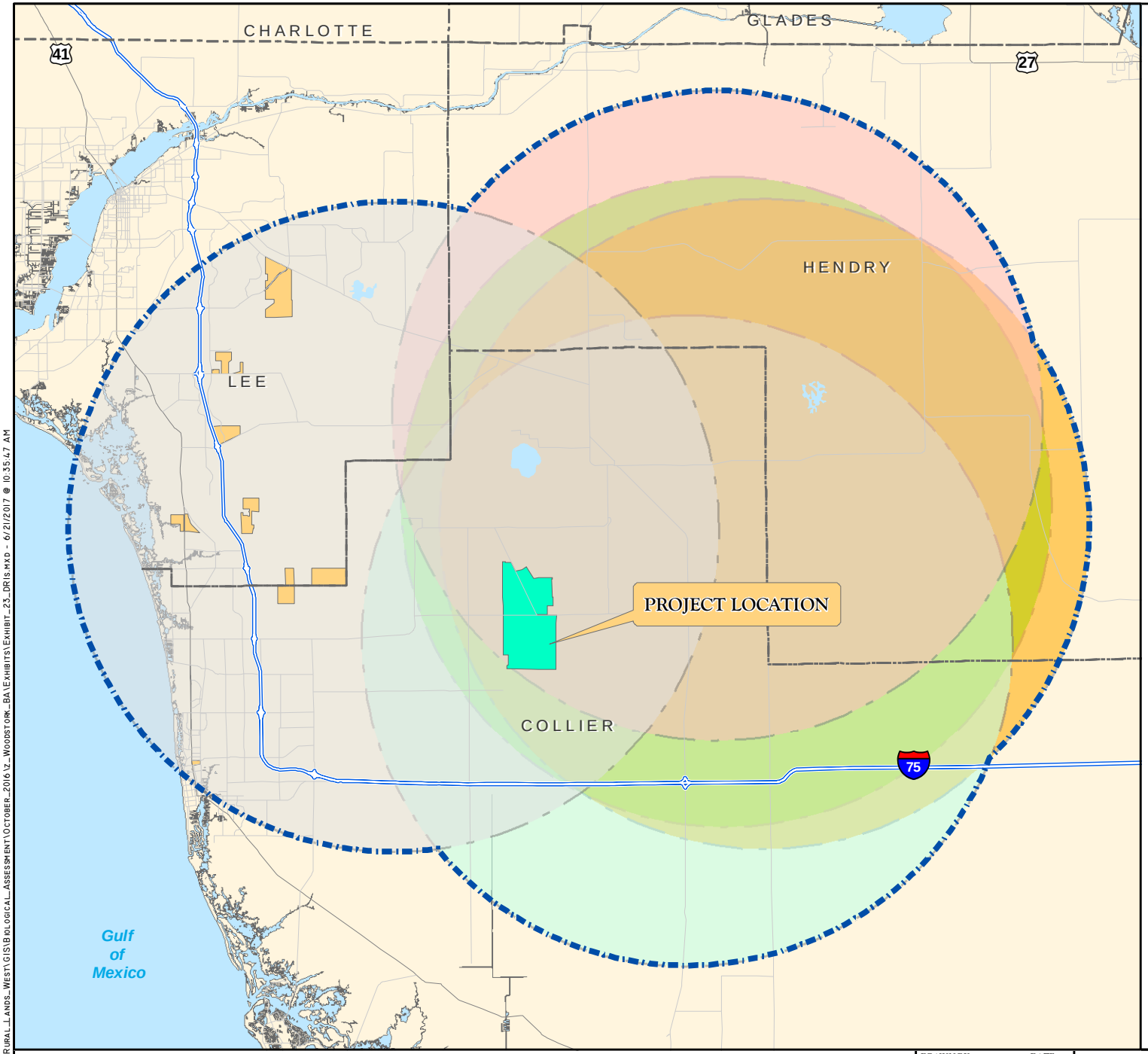
APPLICATION ID	PERMIT NO.	APPROVED DATE	NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS
151015-4	36-04853-P-05	January 29, 2016	MARINA BAY RECREATION TRACT AND PARCELS C AND E	80.74	0.00	0.00	0.00	0.00	0.0%
151015-4	36-04853-P-05	January 29, 2016	MARINA BAY RECREATION TRACT AND PARCELS C AND E	80.47	0.00	0.00	0.00	0.00	0.0%
150917-3	11-01536-S	February 5, 2016	MEMORIAL PATHWAY	8.36	3.41	0.50	0.00	0.00	40.8%
151103-6	11-02061-P-02	February 5, 2016	GERMAIN STORAGE LOT	5.26	0.28	0.00	0.00	0.00	5.3%
151105-7	36-05198-P-07	February 5, 2016	GULF COAST LANDING	1.05	0.00	0.00	0.00	0.00	0.0%
151106-18	36-04585-P-02	February 5, 2016	THE RESIDENCES AT NORTH BAY VILLAGE	23.39	4.12	0.00	0.00	0.00	17.6%
150713-5	11-00737-S	March 1, 2016	COLLIERS RESERVE CLUBHOUSE EXPANSION	8.24	0.27	0.01	0.00	0.00	3.2%
150727-22	11-01521-P-02	March 4, 2016	MILANO LAKES (FKA THE LORDS WAY APARTMENTS)	24.31	2.72	0.00	0.00	0.00	11.2%
151201-6	11-03771-P	March 7, 2016	BUCKLEY PARCEL	22.73	0.00	0.00	0.00	0.00	0.0%
150918-2	36-00678-S-42	March 9, 2016	SALEX PIZZERIA & OFFICE/RETAIL AT GATEWAY	0.72	0.00	0.00	0.00	0.00	0.0%
151112-6	11-03774-P	March 11, 2016	NAPLES BEACH HOTEL AND GOLF COURSE	90.22	5.80	0.00	0.00	0.00	6.4%
160205-5	36-04853-P-06	March 25, 2016	ARBORWOOD AMENITY CENTER	9.03	0.00	0.00	0.00	0.00	0.0%
160209-3	11-01863-P	March 25, 2016	CITY GATE BOULEVARD NORTH EXTENSION (PHASE 2)	5.74	5.74	0.00	0.00	0.00	100.0%
151215-7	36-04978-P-02	April 6, 2016	THE REEF (F K A COASTAL VILLAGES PH 3)	23.38	23.36	0.00	0.00	0.00	99.9%
151217-1	11-03779-P	April 6, 2016	COLLIER CHARTER SCHOOL	13.28	2.81	0.00	1.13	2.48	21.2%
150716-6	11-00347-S	April 8, 2016	COUNTRYSIDE GOLF AND COUNTRY CLUB	9.32	3.70	2.48	12.53	0.00	39.7%
151026-13	36-00080-S-02	April 11, 2016	SKY WALK	10.56	10.32	0.30	0.00	0.00	97.7%
151119-15	36-03946-P	April 13, 2016	ALBERTSONS IMPERIAL BONITA PLAZA ENTRANCE MODIFICATION	2.11	0.00	0.00	0.00	0.00	0.0%
160225-10	11-02234-P-14	April 13, 2016	GOODWILL INDUSTRIES- LOTS 5 AND 5 HERITAGE COMMONS TRACT D	2.01	0.00	0.00	0.00	0.00	0.0%
160218-10	11-01863-P-07	April 14, 2016	CITY GATE SELF STORAGE (LOTS 10-12 OF PHASE 1)	4.33	0.00	0.00	0.00	0.00	0.0%
160204-3	11-00212-S-139	April 20, 2016	FORD DRYWALL	1.25	0.00	0.00	0.00	0.00	0.0%
151102-6	11-01770-P	April 21, 2016	GOLDEN GATE BLVD (C R 876) FROM WILSON BLVD TO 20TH STREET	15.32	1.85	0.00	0.00	0.00	12.1%
160229-15	11-02336-P	April 21, 2016	THE TOWN OF AVE MARIA	1741.30	138.43	0.00	0.00	0.00	7.9%
160310-11	36-04135-P-03	April 22, 2016	ESTERO VETERINARY CLINIC	1.25	0.00	0.00	0.00	0.00	0.0%
151215-2	11-03312-P-05	April 29, 2016	HACIENDA LAKES TRACT B	141.45	59.48	0.00	0.00	0.00	42.0%
150911-8	11-01314-S-03	May 10, 2016	SIERRA MEADOWS SUB (LOTS 6,8, & 9)	16.30	16.11	0.00	0.00	0.00	98.9%
151203-17	36-03568-P-02	May 10, 2016	RAVENNA AT MIROMAR LAKES	13.83	4.12	0.00	0.00	0.00	29.8%
151230-14	36-03568-P-06	May 10, 2016	POSITANO AT MIROMAR LAKES	3.58	0.01	0.00	0.00	0.00	0.2%
160330-6	26-00270-S	May 16, 2016	BETHEA GROVE INTERNAL LATERAL DITCHES	164.14	6.38	0.00	6.38	0.00	3.9%
160401-1	36-04853-P-05	May 20, 2016	MARINA BAY PLAT THREE	27.96	0.34	0.00	0.00	0.00	1.2%
150924-16	36-08561-P	May 23, 2016	THE PLACE	1361.54	125.13	0.41	102.07	27.68	9.2%
160119-25	11-03797-P	June 6, 2016	GERMAIN HONDA	10.40	0.00	0.00	0.00	0.00	0.0%
160309-1	36-02664-S-02	June 10, 2016	RACETRAC AT SIX MILE CYPRESS	1.70	0.00	0.00	0.00	0.00	0.0%
160513-8	11-02242-P-04	June 14, 2016	MY OTHER PLACE 3	0.53	0.00	0.00	0.00	0.00	0.0%
151009-7	11-02654-P	June 23, 2016	SIENNA RESERVE	29.63	27.01	0.15	0.00	0.00	91.2%
160502-12	11-02234-P-15	June 24, 2016	THE WAREHOUSE	0.95	0.00	0.00	0.00	0.00	0.0%
160517-17	36-03962-P	June 29, 2016	HIDDEN HARBOR	54.16	16.31	0.00	0.00	0.00	30.1%
160506-14	36-06202-P-04	June 30, 2016	ROBB & STUCKY DISTRIBUTION CENTER	20.22	0.00	0.00	0.00	0.00	0.0%
160510-1	36-02881-S	June 30, 2016	F G C U NORTH LAKE VILLAGE DINING HALL AND BOARDWALK	6.43	0.04	0.00	0.00	0.00	0.6%
150827-18	36-08589-P	July 1, 2016	LEE CORNERS	2.60	1.02	1.02	0.00	0.00	39.2%

APPLICATION ID	PERMIT NO.	APPROVED DATE	NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS
160408-8	11-02231-P	July 6, 2016	STONECREEK RECREATION TRACT	640.56	328.77	0.00	0.00	0.00	51.3%
160505-17	11-00715-S-18	July 11, 2016	LOT 2 PINE AIR LAKES UNIT SIX (NAPLES INFINITI-VOLVO)	11.35	0.12	0.00	0.00	0.00	1.1%
151130-5	11-01638-P	July 27, 2016	39 ACRE PARCEL - BASINS D A 2 & D A 3 MODIFICATION	12.13	8.28	1.29	0.99	0.00	68.3%

Note: SWFWMD applications from 2013 through 2016 were acquired from the SWFWMD website (http://www.swfwmd.state.fl.us/data/gis/layer_library/category/regulatory) July 2016.

EXHIBIT 23

DRIs 2013 THROUGH 2016 WITHIN WOOD STORK ACTION AREA



LEGEND

- Rural Lands West
- Wood Stork Action Area
- DRIs

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

N
W
E
S

0 5 10
Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

DRIs WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE HTTP://WWW.FGDL.ORG/METADATAEXPLORER/EXPLORER.JSP JULY 2016 AND ARE CURRENT TO FEBRUARY 2015.

J:\2005\05cen\481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016\z_Woodstork_BA\Exhibits\Exhibit_23_DRIs.mxd - 6/21/2017 @ 10:35:47 AM

EXHIBIT 23. DRIs 2013 THROUGH 2016 WITHIN WOOD STORK ACTION AREA
RURAL LANDS WEST

DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

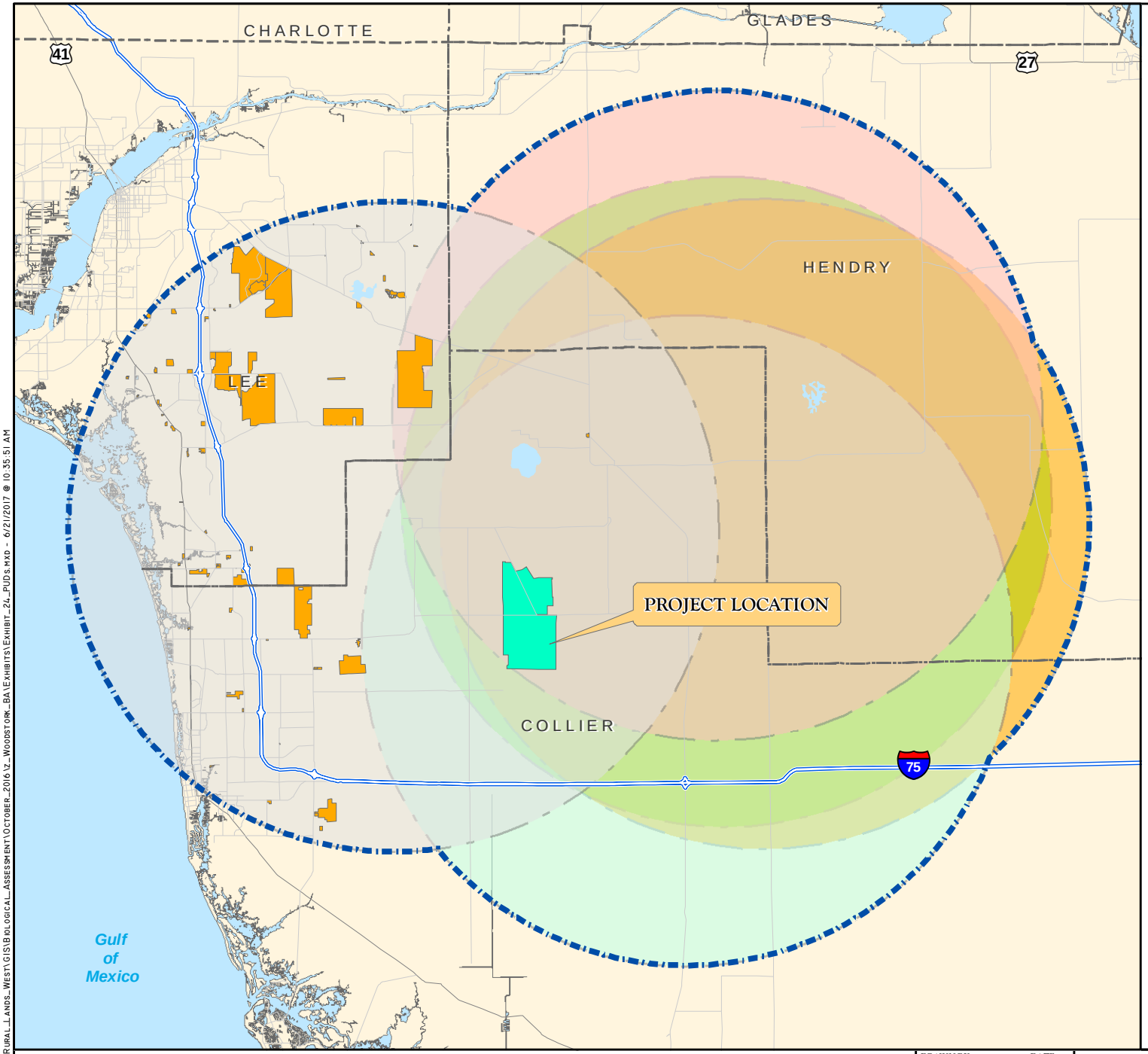
Exhibit 23A. DRIs 2013 through 2016 within 25 Mile Radius within Wood Stork Action Area

PROJECT NAME	PROJECT ACRES	WETLAND ACRES	PERCENT WETLANDS ON PROPERTY	ADA NO.	DATE APPROVED
BONITA BEACH ROAD	1270.41	306.43	24.12%	2001-014	2/23/01
BONITA GRANDE R.V. RESORT, INC.	846.88	19.11	2.23%	1990-029	11/2/89
COASTLAND CENTER MALL	74.85	0.35	0.00%	1992-010	2/17/92
FLORIDA GULF COAST TECHNOLOGY & RESEARCH PARK	627.47	372.66	59.39%	2007-028	4/19/07
PARKLANDS WEST	938.36	355.22	37.86%	1989-003	7/29/88
SPRING CREEK	573.20	112.14	19.56%	1977-002	10/4/76
THE FOUNTAINS	2776.85	1658.07	59.71%	2006-018	1/23/06
TIMBERLAND & TIBURON	781.95	290.48	37.15%	1985-008	7/20/84

Note: DRIs were acquired from the Florida Geographic Data Library website http://www.fgdl.org/metadataexplorer/explorer.jsp in July 2016.

EXHIBIT 24

PUDs 2013 THROUGH 2016 WITHIN WOOD STORK ACTION AREA



LEGEND

- Rural Lands West
- Wood Stork Action Area
- PUDs

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

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NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

COLLIER PUDS WERE ACQUIRED FROM THE COLLIER COUNTY GIS WEBSITE (HTTP://WWW.COLLIERGOV.NET /INDEX.ASPX?PAGE=2713) JULY 2016.

LEE PUDS WERE ACQUIRED FROM THE LEE COUNTY GOVERNMENT WEBSITE (HTTP://LEEGIS.LEEGOV.COM/GISDATA.HTM) JULY 2016.

J:\2005\05cen\481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016 Vz_Woodstork_BA\Exhibits\Exhibit_24_PUDs.mxd - 6/21/2017 @ 10:35:51 AM

EXHIBIT 24. PUDs 2013 THROUGH 2016 WITHIN WOOD STORK ACTION AREA
RURAL LANDS WEST

DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

Exhibit 24A. Lee County PUDs 2013 through 2016 within Woodstork Action Area

NAME	PROPERTY ACRES	WETLAND ACRES	PERCENT WETLANDS ON PROPERTY	INITIAL APPLICATION	STATUS	ZONING CATEGORY	MASTER NO.	INITIAL RESOLUTION
ARROYAL PLACE RPD	1.48	0.74	50.26%		Approved	RPD	10BOS-PD00003	
Barbara Court	5.16	1.40	27.07%	Pend	Pending	RPD	DCI2007-00077	
Bonita 75 CPD	21.00	0.04	0.20%	Pend	Pending	CPD	DCI2004-00061	
Bonita Commons (Maranda's Catering CPD)	0.23	0.00	0.00%	Pend	Approved/Pending	CPD	DCI2001-00081	ZO0208
Bonita Exchange	23.68	14.38	60.72%	Pend	Pending	CPD	DCI2006-00082	<Null>
Bonita River Walk RPD	10.49	1.76	16.75%		Pending	RPD	DCI2006-00057	
Canterfield Village	19.11	18.83	98.54%	Pend	Pending	RPD	DCI2013-00011	
Cemex, Alico Rd Quarry PH3C	262.58	262.13	99.83%	2014	Approved	MEPD	DCI2010-00012	Z-13-026
Centerplace	885.99	98.41	11.11%	2015	Approved	CCPD	DCI2013-00023	Z-14-021
Central Park (fka Village on the Park)	21.62	0.00	0.00%	1994	Approved/Pending	CPD	DCI940048	Z94065
Coastline Tree Service	26.12	0.00	0.00%	2014	Approved	IPD	DCI2013-00022	Z-14-019
Coastline Tree Service	3.30	0.00	0.00%	2014	Approved	CPD	DCI2013-00022	Z-14-019
Coconut Cove	17.73	10.16	57.32%	Pend	Pending	RPD	DCI2015-00012	
Corkscrew Farms	1360.99	123.66	9.09%	2015	Approved	RPD	DCI2015-00004	Z-15-025
Daniels Preserve	308.77	177.17	57.38%	2002	Approved/Pending	MPD	DCI2000-00084	Z02036
Daniels Rd Showroom Warehouse	6.11	2.80	45.79%	Pend	Pending	IPD		
Dean St MPD	6.65	0.06	0.93%	Pend	Pending	MPD	DCI2006-00086	
Dean Street RPD	10.91	7.90	72.39%	Pend	Approved/Pending	RPD	DCI8952	Z89045
Delaware Road Market	0.89	0.00	0.00%	Pend	Pending	CPD	DCI2010-00010	
Dogwood CPD	3.70	0.00	0.00%	Pend	Pending	CPD	DCI2006-00093	
Dogwood IPD	7.38	0.00	0.00%	Pend	Pending	IPD	DCI2006-00093	
Eagle Bay RPD	20.07	9.10	45.31%	Pend	Pending	RPD	DCI2007-00055	
East Country Water Control District H	5.36	0.00	0.00%	Pend	Pending	CPD	DCI2003-00031	
East Country Water Control District H	3.19	0.00	0.00%	2004	Approved/Pending	CPD	DCI2003-00031	Z03069
Estero Grande	29.60	16.06	54.25%	2015	Approved	MPD	DCI2014-00004	Z-14-028
Estero Oaks	36.27	3.94	10.87%	2014	Approved	MPD	DCI2013-00020	Z-14-011
Estero Place	57.41	0.00	0.00%	2013	Approved	RPD	DCI2013-00007	Z13024
Executive Plaza	1.19	0.00	0.00%	Pend	Pending	CPD	DCI2007-00067	
Florida Gulf Coast Technology	726.75	457.75	62.99%		Pending	MPD	DRI2007-00002	
Freshman Daniels	44.38	33.65	75.83%	2015	Approved	MPD	DCI2014-00006	Z14035
Gateway DRI and PUD Amendment	2485.09	698.64	28.11%	Pend	Approved	PUD	DRI2011-00004	
Gator-Domestic Industrial Center	88.16	62.58	70.98%	2013	Approved	IPD	DCI2013-00004	Z13010
Gionfriddo Six	1.25	0.00	0.00%	2013	Approved	CPD	DCI2012-00043	Z13011
Golden Ponds Motor Coach (fka Lee County Fill Dirt IPD)	54.44	23.29	42.77%	1990	Approved/Pending	IPD	DCI890154	Z90010
Goodwill HUD Project	1.02	1.02	100.00%	Pend	Pending	RPD	DCI2007-00059	
Greenmeadow Mine Expansion	79.39	26.71	33.65%	Pend	Approved	IPD	960721903Z	Z88210
Health Park Luxury Apartments	3.62	0.00	0.00%	Pend	Approved	CPD	DCI2013-00013	Z-14-003
Homestead 30 MPD	30.00	0.00	0.00%	Pend	Pending	MPD	DCI2011-00013	
HOPE LUTHERAN CHURCH REZONING	9.31	0.00	0.00%		Pending	RPD	09BOS-PD00003	

NAME	PROPERTY ACRES	WETLAND ACRES	PERCENT WETLANDS ON PROPERTY	INITIAL APPLICATION	STATUS	ZONING CATEGORY	MASTER NO.	INITIAL RESOLUTION
International Centre FQD	43.48	6.55	15.06%	1991	Pending	CPD	DRI900041	Z90117
International Centre FQD	15.00	0.00	0.00%	1991	Pending	CPD	DRI900041	Z90117
Iron Horse Commerce Park CPD	5.60	0.00	0.00%	Pend	Approved	CPD	DCI920181	Z93055
Lakeside San Carlos CPD	7.80	7.18	92.07%	1987	Pending	CPD	DCI910264	Z87156
Las Brisas RPD	173.77	22.31	12.84%	1995	Approved/Pending	RPD	DCI1999-00027	Z95004
Lee Corners CPD	0.02	0.00	0.00%	Pend	Pending	CPD	DCI2007-00048	
Livingston Oaks (fka Arlington Golf Club	283.79	49.48	17.44%	1999	Approved/Pending	RPD	DCI960646	Z99083
Lowe's Home Center Inc	22.53	19.89	88.27%	Pend	Pending	CPD	DCI2006-00099	
Marni Fields	16.38	0.00	0.00%	Pend	Pending	CFPD	DCI2007-00044	
Midway Promenade	80.84	44.12	54.57%	2005	Approved/Pending	MPD	DCI2004-00030	Z04069
Miror Lakes CPD	175.87	13.23	7.53%	Pend	Approved	CPD	DCI2002-00053	Z02062
Old Corkscrew Plantation	4202.46	1246.62	29.66%	Pend	Pending	IPD	DCI2011-00007	Pending
Olympia Development Group CPD	1.95	0.00	0.00%	2000	Approved/Pending	CPD	DCI2000-00006	Z00041
Parklands East RPD/CPD DRI	626.88	98.12	15.65%	1985	Approved/Pending	CPD	DRI961291	Z85131
Phil Pugh/Pelican Landing Business Park	6.89	0.00	0.00%	1988	Approved/Pending	CPD	DCI958355	Z88325
Riverview Center (FKA Freeman Harrelson) CPD	23.50	0.05	0.21%	EXP	Approved	CPD	DCI890245	Z90038
Royal Woods Phase II	12.53	0.02	0.14%	Pend	Pending	RPD	DCI2010-00003	
San Carlos Self Storage CPD	5.58	0.49	8.86%	2000	Approved/Pending	CPD	DCI2000-00011	Z00074
Shariati CPD	1.77	1.44	81.13%	Pend	Pending	CPD	DCI2007-00033	
Southwest Florida International Airport	1.51	0.00	0.00%	1976	Approved/Pending	AOPD	DRI900136	765013
ST MATTHEWS HOUSE CFPD	2.42	0.00	0.00%		Pending	CFPD	10BOS-PD00004	
Sunshine 23 CPD	1.74	0.00	0.00%	2014	Approved	CPD	DCI2014-00008	Z-14-025
The Fountains	2768.49	1652.21	59.68%	Pend	Pending	MPD	DCI2006-00029	
THE MANORS AT ORANGE CREEK	25.22	0.10	0.39%		Pending	RPD	10BOS-PD00001	
Three Oaks Marketplace	40.10	9.56	23.85%	Pend	Pending	MPD	DCI2015-00033	
Treeline Distribution Center	22.49	0.00	0.00%	2015	Approved	IPD	DCI2014-00011	Z-14-034
Via Coconut	18.53	0.00	0.00%	Pend	Pending	MPD	DCI2014-00023	
Villas at Hidden Harbour Marina	5.29	0.42	7.90%	Pend	Pending	RPD	DCI2005-00019	
Wildblue	2960.03	1789.67	60.46%	2015	Approved	MPD	DCI2014-00009	Z-15-021

Note: Lee PUDs were acquired from the Lee County government website (http://leegis.leegov.com/gisdata.htm) July 2016.

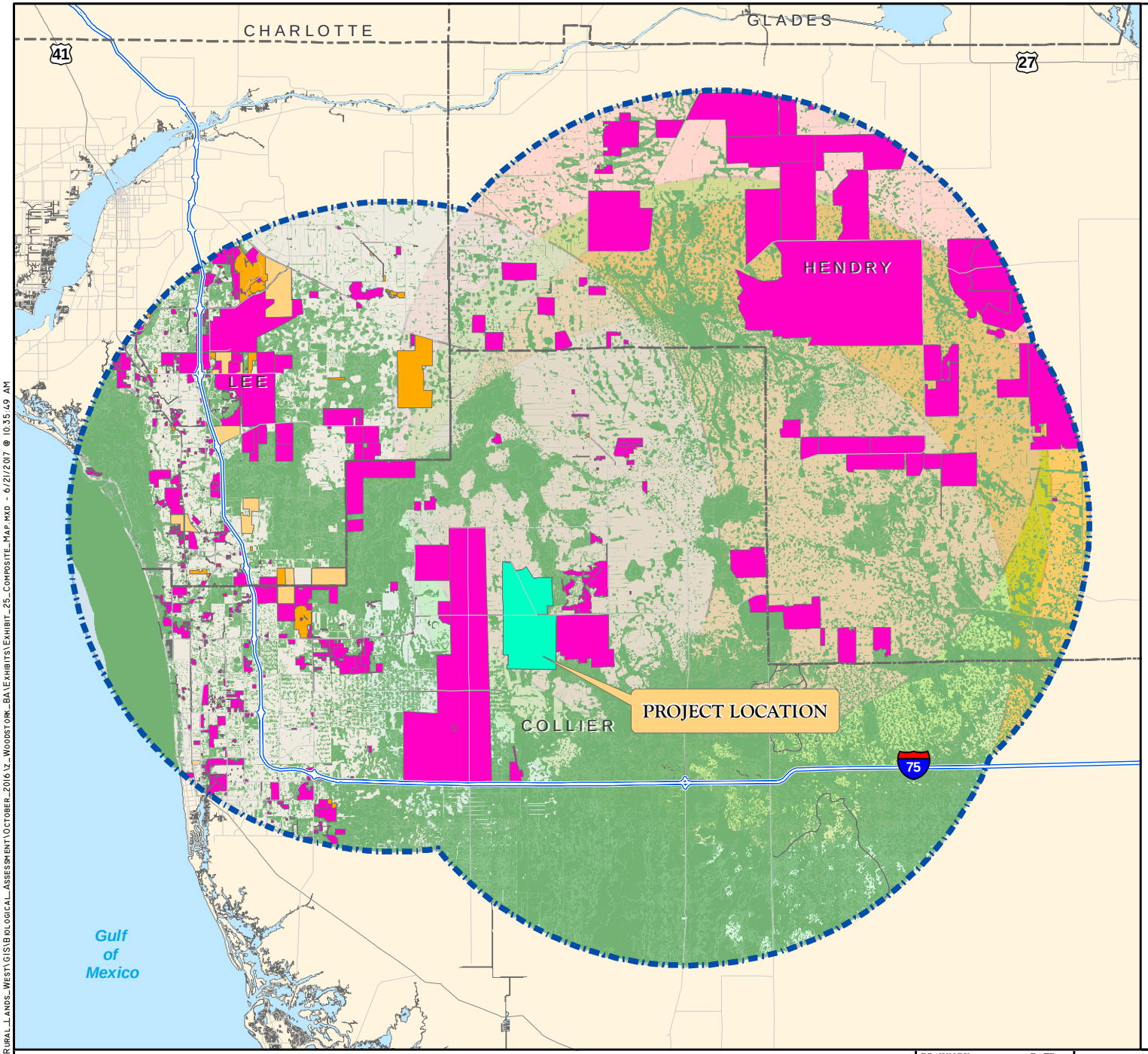
Exhibit 24B. Collier County PUDs 2013 through 2016 within 25 Mile Radius and Woodstork Action Area

NAME	PROJECT ACRES	WETLAND ACRES	PERCENT WETLANDS ON PROPERTY	PETITION	STATUS	SYS PUD NU	ORDINANCE NUMBER	DATE APPROVED
7-FOODMART	1.03	0.00	0.00%	PUDZ-PL2013-1352	ACTIVE		14-06	02/25/14
AVALON OF NAPLES	23.42	22.28	95.12%	PUDZ-PL2014-1179	ACTIVE		15-31	5/12/15
BAY HOUSE CAMPUS CPUD	8.66	5.62	64.97%	R-87-35	ACTIVE		88-30	12/10/13
COLLIER 36 RPUD	8.77	0.02	0.21%	PUDZ-PL20140000340	ACTIVE		15-01	1/13/15
ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	1660.56	1610.67	97.00%	PUD-99-10	ACTIVE	AR-9124	01-20; 14-36	10/14/14
GERMAIN HONDA	10.30	0.00	0.00%	PUDZ-2014-1326	ACTIVE		15-43	7/7/15
GOLF CLUB OF THE EVERGLADES	851.97	478.90	56.21%	PUDZ-PL2013-1374	ACTIVE		14-21	6/10/14
LIDO ISLES	24.03	22.92	95.39%	RPUD-PUDZ-PL2014-393	ACTIVE		15-35	6/23/15
LIVING WORD FAMILY CHURCH	35.22	15.55	44.16%	PUDZ-2011	ACTIVE	PL11-0762	13-60	10/22/13
RMC-ENCLAVE RPUD	28.21	27.92	98.98%	PUDZ-PL2012-1981	ACTIVE		14-34	9/9/14
SOUTHBROOKE	5.14	4.63	90.17%	PUDZ-PL2014-2077	ACTIVE		15-63	11/10/15
SR29	24.80	17.65	71.20%	PUDZ-PL2013-1241	ACTIVE		15-23	3/10/15
TEMPLE CITRUS GROVE RPUD	131.57	0.00	0.00%	PUDZ-PL2012-2779	ACTIVE		14-10	3/11/14
THE LANDINGS AT BEARS PAW	10.64	7.92	74.47%	RZ-PL2012-2095	ACTIVE		13-66	12/10/13
THE LORD'S WAY 30 ACRE RPUD	30.17	0.00	0.00%	PUDZ-PL2013-827	ACTIVE		14-11	3/11/14
TOP HAT AUTO	11.35	1.21	10.71%	PUDZ-12	ACTIVE	PL 12-726	13-24	3/12/13
TUSCANY POINTE RPUD	29.67	0.02	0.06%	PUD-2005-	ACTIVE	AR-8379	07-55; 13-53	9/24/13
WILLOW RUN	560.46	0.00	0.00%	RPUD-PUDZ-PL2013-682	ACTIVE		14-35	9/23/14

Note: Collier PUDs were acquired from the Collier County GIS website (http://www.colliergov.net/index.aspx?page=2713) August 2016.

EXHIBIT 25

SFWMD APPLICATIONS, DRIs, PUDs, AND NWI MAPPING WITHIN WOOD STORK ACTION AREA



LEGEND

- Rural Lands West
- Wood Stork Action Area
- DRIs
- PUDs
- SFWMD ERP Applications
- National Wetlands Inventory

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

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Miles

NOTES:

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COLLIER PUDS WERE ACQUIRED FROM THE COLLIER COUNTY GIS WEBSITE (HTTP://WWW.COLLIERGOV.NET/INDEX.ASPX?PAGE=2713) JULY 2016.

LEE PUDS WERE ACQUIRED FROM THE LEE COUNTY GOVERNMENT WEBSITE (HTTP://LEEGIS.LEEGOV.COM/GISDATA.HTM) JULY 2016.

NATIONAL WETLANDS INVENTORY WAS ACQUIRED FROM THE USFWS WEBSITE HTTP://WWW.FWS.GOV/GIS/DATA/NATIONAL/INDEX.HTML JULY 2016.

SFWMD ERP APPLICATIONS FROM 2013 THROUGH 2016 WERE ACQUIRED FROM THE SFWMD WEBSITE (HTTP://MY.SFWMD.GOV/GISAPPS/SFWMDXWEBDC/DATAVIEW.ASP?QUERY=UNQ_ID=1128) JULY 2016.

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EXHIBIT 25. SFWMD APPLICATIONS, DRIs, PUDs, AND NWI MAPPING WITHIN WOOD STORK ACTION AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

EXHIBIT 26

PROJECTS WITH LESS THAN 5 PERCENT WETLANDS IN WOOD STORK ACTION AREA

Exhibit 26. Projects Within the 25 Mile Radius and Woodstork Focus Area Having Less Than Five Percent Wetlands

PROJECT NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	DRI	PUD	DISTRICT
10060 BAVARIA ROAD - LOTS 5 A AND 5 B BLOCK D	0.83	0.00	0.00%			2014
1075 CENTRAL AVENUE	2.59	0.00	0.00%			2015
1600 INDUSTRIAL CENTER	3.02	0.00	0.00%			2015
2575 NORTHBROOKE	1.23	0.00	0.00%			2015
3706 PROGRESS AVE	1.13	0.00	0.00%			2014
4500 EXCHANGE BLVD	6.74	0.00	0.00%			2016
720 COMMONS BUILDING	2.52	0.00	0.00%			2015
7-ELEVEN	1.39	0.00	0.00%			2015
7-ELEVEN 32794	1.51	0.00	0.00%			2014
7-ELEVEN NO. 34816	1.72	0.00	0.00%			2014
7-ELEVEN PELICAN LANDING	1.06	0.00	0.00%			2015
7-ELEVEN STORE 34856	1.25	0.00	0.00%			2014
7-FOODMART	1.03	0.00	0.00%		2014	
800 F L P IMPROVEMENTS	3.69	0.00	0.00%			2014
82 PLAZA	3.88	0.00	0.00%			2013
8TH ST SW AT GUNNERY ROAD	1.73	0.00	0.00%			2013
A C I - LOT 35	135.69	4.33	3.19%			2015
AGGREGATE SPECIALTIES	3.74	0.00	0.00%			2014
AIRBORNE EXPRESS - LOT 2 BLOCK A	1.89	0.00	0.00%			2015
AIRPORT-PULLING ROAD NORTH IMPROVEMENTS	23.45	0.45	1.92%			2016
ALBERTSONS IMPERIAL BONITA PLAZA ENTRANCE MODIFICATION	2.11	0.00	0.00%			2015
ALICO 254 PARCEL R	11.85	0.00	0.00%			2015
ALICO CROSSINGS (BEEF OBRADYS)	0.54	0.00	0.00%			2014
ALICO FAMILY GOLF CENTER L L C	30.18	0.00	0.00%			2013
ALICO INDUSTRIAL CENTER LOT 3 (ALICO CENTER AUTO & TIRE)	1.00	0.00	0.00%			2014
ALICO ROAD BUSINESS PARK TRACTS A AND B	23.38	0.00	0.00%			2014
ALL AMERICAN PET RESORT EXPANSION	2.56	0.00	0.00%			2016
ALL SEASONS IN NAPLES	9.47	0.00	0.00%			2013
ALL SEASONS OF NAPLES	9.47	0.00	0.00%			2014
ALL SEASONS OF NAPLES	9.47	0.00	0.00%			2015
ALLEN HANGAR AND TAXILANE F AT NAPLES MUNICIPAL AIRPORT	3.69	0.00	0.00%			2015
ALOHA - 1892 TRADE CENTER WAY	0.66	0.00	0.00%			2014
ALTA RESOURCES PARKING LOT EXPANSION	10.12	0.11	1.11%			2013
ALTAIRA AT THE COLONY	4.90	0.24	4.92%			2015
ALTAIRA AT THE COLONY	4.90	0.24	4.92%			2016
AMERICAN AUTO REPAIR (FKA ACCURATE AUTO)	0.31	0.00	0.00%			2014
AMERICAN HOUSE - BONITA SPRINGS	25.05	0.09	0.36%			2013
AMERICAN HOUSE BONITA SPRINGS PH I I I	4.48	0.00	0.00%			2014
AMERICAN HOUSE- BONITA SPRINGS PH I I I	4.48	0.00	0.00%			2015
AMERIMED CENTER	18.82	0.57	3.05%			2014
AQUATERRA	2.23	0.00	0.00%			2013
ARBORWOOD AMENITY CENTER	9.03	0.00	0.00%			2016
ARBYS ALICO	1.25	0.00	0.00%			2014
ARGUMOSA	0.34	0.00	0.00%			2015
ARMSTRONG RIP RAP ON IMPERIAL	0.82	0.00	0.00%			2016
ARTHREX AT AVE MARIA FINISHING FACILITY	14.86	0.00	0.00%			2013
ARTHREX BUILDING EXPANSION	50.91	0.00	0.00%			2015
ASKAR RETAIL CENTER	0.98	0.00	0.00%			2015
ASKAR RETAIL CENTER	0.98	0.00	0.00%			2015
AUTOZONE AT MISSION HILLS SHOPPING CENTER (PARCEL 8)	1.49	0.00	0.00%			2015
AUTOZONE STORE 6311	0.53	0.00	0.00%			2013
AUTUMN LEAVES OF ESTERO	3.22	0.00	0.00%			2014
AUTUMN LEAVES OF ESTERO	3.22	0.00	0.00%			2014
AUTUMN LEAVES OF ESTERO	6.14	0.00	0.00%			2015
AUTUMN LEAVES OF ESTERO	6.14	0.00	0.00%			2015
AUTUMN LEAVES OF ESTERO	3.48	0.00	0.00%			2016
AVE MARIA - DEL WEBB ROAD CROSSING	1.13	0.00	0.00%			2015
AVE MARIA LAKE NUMBER 5C	1.74	0.00	0.00%			2015
AVE MARIA UNIVERSITY PRESS BOX	1.45	0.00	0.00%			2013
B S U WEST WATER RECLAMATION FACILITY - REJECT PONDS	5.70	0.00	0.00%			2016
BAY FOREST	5.45	0.04	0.76%			2015
BAY LANDINGS (TIDE - STARBUCKS BUILDING)	1.19	0.00	0.00%			2013
BAYWINDS - KAYAK LAUNCH AREA AT THE COLONY	0.53	0.00	0.00%			2014
BENTLEY VILLAGE SALES CENTER	1.17	0.04	3.56%			2013
BERKSHIRE COMMONS PARCEL C	1.01	0.00	0.00%			2014
BERKSHIRE PLACE	2.58	0.00	0.00%			2014
BERKSHIRE PLACE	2.58	0.00	0.00%			2015
BERKSHIRE PLACE	2.58	0.00	0.00%			2016
BERKSHIRE RESERVES TOWNHOMES	11.42	0.00	0.00%			2014
BERNWOOD PARK OF COMMERCE - WALDROP CENTER	2.50	0.00	0.00%			2013
BIZ PARK	3.80	0.00	0.00%			2015
BOCCI BALL COURT ADDITION	9.21	0.00	0.00%			2013
BONITA 75 C P D	20.00	0.03	0.15%			2016
Bonita 75 CPD	21.00	0.04	0.20%		Pend	
BONITA BEACH ROAD - BUS STOP B S 11	0.23	0.00	0.00%			2015
Bonita Commons (Maranda's Catering CPD)	0.23	0.00	0.00%		Pend	
BONITA DINER	1.25	0.00	0.00%			2014
BONITA GRANDE COMMERCIAL OUTPARCELS #2 AND #3	2.46	0.00	0.00%			2016
BONITA GRANDE R.V. RESORT, INC.	846.88	19.11	2.23%	1989		
BONITA SPRINGS UTILITIES ADMINISTRATION FACILITY EXPANSION	18.47	0.00	0.00%			2015
BONNESS INC	7.86	0.00	0.00%			2015
BOTANICA SOUTH	237.67	6.26	2.63%			2014
BOTANICA SOUTH	237.67	6.26	2.63%			2015

PROJECT NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	DRI	PUD	DISTRICT
BOTANICA SOUTH	116.39	4.88	4.19%			2015
BRENDAN COVE DREDGE - MSOH INC	0.25	0.00	1.16%			2016
BRENDAN COVE DREDGE - RANKIN	0.25	0.00	0.61%			2016
BRENDAN COVE DREDGE - REINERT	0.26	0.00	0.05%			2016
BRIDGE REHABILITATION TO CR 858 BRIDGE OVER OBIE CANAL	0.04	0.00	0.00%			2014
BRIDGETOWN	6.10	0.08	1.39%			2015
BRIDGETOWN AT THE PLANTATION RE-USE LAKE	1.83	0.00	0.00%			2014
BRIDGETOWN PARCEL B-13	28.95	0.00	0.00%			2014
BRIDGETOWN PARCEL B5	14.30	0.02	0.11%			2013
BRIDGETOWN PARCELS B-12 AND B-19	23.53	0.03	0.12%			2013
BROOKS PETROLEUM	1.32	0.00	0.00%			2014
BROOKS VILLAGE	22.74	0.00	0.00%			2014
BROOKS VILLAGE - MEDEXPRESS	1.06	0.00	0.00%			2016
BUCKLEY PARCEL	22.73	0.00	0.00%			2015
BUETE PROJECT	1.20	0.00	0.00%			2014
C AND C TIRE - FORT MYERS - LOT 7	0.83	0.00	0.00%			2016
C R 951 (COLLIER BOULEVARD) FIBER RELOCATION	0.40	0.00	0.00%			2015
C R-951 EXTENSION (WEATHERED STONE DRIVE - TORRE VISTA LANE)	4.58	0.02	0.44%			2015
CAM COURT	2.08	0.00	0.00%			2015
CAMERON COMMONS RETAIL CENTER	4.86	0.00	0.00%			2013
CAMERON COMMONS UNIT 1- TRACT 5	1.05	0.00	0.00%			2015
CAMINETTO AT MEDITERRA	7.00	0.09	1.34%			2015
CAPE HICKORY DOCKING FACILITY	0.17	0.00	0.00%			2014
CAPE HICKORY DOCKING FACILITY	1.52	0.00	0.00%			2014
CARDINAL CENTER	1.12	0.00	0.00%			2015
CARILLON AUTO SPA CENTER - TR A	2.79	0.00	0.00%			2015
CARING HEARTS PEDIATRIC EXTENDED CARE CENTER	0.46	0.00	0.00%			2015
CASCIO LOT RIP RAP INSTALLATION	0.29	0.01	2.45%			2016
CENTER FOR HOPE	46.53	0.00	0.00%			2014
CENTER OF BONITA SPRINGS CHASE BANK (REF: A#160325-12)	1.49	0.00	0.00%			2016
CENTRAL AVENUE STREETSCAPE AND DRAINAGE IMPROVEMENTS	0.61	0.00	0.00%			2015
Central Park (fka Village on the Park)	21.62	0.00	0.00%		1994	
CHILIS RESTAURANT - EAST NAPLES	1.76	0.00	0.00%			2014
CHURCH ROAD GROVE CULVERT CROSSING	0.94	0.00	0.00%			2015
CITY GATE SELF STORAGE (LOTS 10-12 OF PHASE 1)	4.33	0.00	0.00%			2016
CITY MATTRESS AT COCONUT POINT	3.37	0.00	0.00%			2015
CITY MATTRESS AT SUPER TARGET	1.56	0.00	0.00%			2014
CITY OF BONITA SPRINGS DOWNTOWN IMPROVEMENT PROJECT	7.12	0.11	1.50%			2015
CITY OF NAPLES RECYCLE TRANSFER FACILITY	24.94	0.00	0.00%			2014
COASTAL BEVERAGE FACILITY EXPANSION	8.39	0.00	0.00%			2014
COASTAL BEVERAGE WAREHOUSE AND MAINTENANCE FACILITY	2.38	0.00	0.00%			2014
COASTLAND CENTER MALL	74.85	0.35	0.00%	1992		
Coastline Tree Service	26.12	0.00	0.00%		2014	
Coastline Tree Service	3.30	0.00	0.00%		2014	
COCKLESHELL DRIVE SIDEWALK	1.09	0.00	0.00%			2016
COCO PLUM DEVELOPMENT SELF STORAGE	3.01	0.00	0.00%			2013
COCO PLUM DEVELOPMENT SELF STORAGE	3.01	0.00	0.00%			2013
COCONUT RETAIL CENTER	1.40	0.00	0.00%			2015
COCONUT TRACE BUS STOP	3.09	0.00	0.00%			2014
COCONUT TRACE RETAIL BUILDING	1.31	0.00	0.00%			2014
COCONUT TRACE RETAIL DEVELOPMENT PHASE I I	1.53	0.00	0.00%			2015
COCONUT TRACE RETAIL DEVELOPMENT, PHASE I I	1.53	0.00	0.00%			2014
COLLIER 36 RPUD	8.77	0.02	0.21%		2015	
COLLIER ATHLETIC CLUB	4.15	0.00	0.00%			2014
COLLIERS RESERVE	8.24	0.27	3.22%			2016
COLLIERS RESERVE CLUBHOUSE EXPANSION	8.24	0.27	3.22%			2015
COMCAST PARKING LOT EXPANSION	5.67	0.00	0.00%			2014
COMMONS PROFESSIONAL PARK - COMMONS V MEDICAL OFFICE	3.64	0.02	0.47%			2015
COMMONS PROFESSIONAL PARK - PHASE III	2.01	0.00	0.00%			2015
COMPLETE DENTISTRY OF ESTERO	1.13	0.00	0.00%			2013
CONSERVANCY OF SOUTHWEST FLORIDA	19.90	0.81	4.05%			2014
CONSTITUTION CENTER (REF: A# 030103-8)	13.85	0.00	0.00%			2014
COPPER OAKS TOWNHOMES BUILD-OUT	3.60	0.00	0.00%			2015
COPPERLEAF AT THE BROOKS GOLF CLUB	5.73	0.00	0.00%			2015
COPPERLEAF GOLF CLUB	5.73	0.00	0.00%			2014
COPPERLEAF GOLF CLUB	5.73	0.00	0.00%			2014
CORKSCREW RD LEE CO COMPLETE STREETS INITIATIVE TIGER GRA	32.47	0.28	0.87%			2015
CORKSCREW ROAD INTERSECTION IMPROVEMENTS AT WILDCAT DRIVE	11.56	0.00	0.00%			2016
CORKSCREW SHORES AMENITY CENTER	12.36	0.00	0.00%			2014
CORKSCREW SHORES AMENITY CENTER	26.91	0.00	0.00%			2014
CORKSCREW VILLAGE SELF STORAGE - LOT 6	8.47	0.00	0.00%			2014
CORPORATE CENTER AT VANDERBILT	2.43	0.00	0.00%			2014
CORSICA AT TALIS PARK AND TALIS PARK SPORTS COMPLEX	29.15	0.40	1.38%			2015
CORSICA WAY AT TALIS PARK	3.07	0.00	0.00%			2014
CORSICA WAY MULTI-FAMILY	14.44	0.00	0.00%			2015
COURTSIDE COMMONS CARPORTS	5.90	0.00	0.00%			2015
COURTYARDS AT ESTERO APARTMENTS	8.58	0.00	0.00%			2014
COX WAREHOUSE (REF: A#970523-12)	1.15	0.00	0.00%			2014
CREATIVE KITCHENS	1.15	0.00	0.00%			2014
CROSSPOINTE MEDICAL BUILDING	1.02	0.00	0.00%			2014
CRYSTAL LAKE R V RESORT STORAGE AREA	10.71	0.15	1.35%			2015
CRYSTAL LAKE R V RESORT STORAGE AREA	10.94	0.33	3.06%			2014
CULVERS OF BONITA SPRINGS	1.19	0.00	0.00%			2016
CULVERS OF ESTERO	1.84	0.00	0.00%			2014
CVS (FKA ECKERDS) AT PELICANS COVE BONITA SPRINGS	1.83	0.00	0.00%			2015

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CYPRESS WAY EAST SIDEWALK IMPROVEMENTS	5.53	0.02	0.29%			2015
DANIELS MARKETPLACE	66.49	0.60	0.90%			2014
DE LASALLE ACADEMY OF FORT MYERS	5.27	0.00	0.00%			2014
Dean St MPD	6.65	0.06	0.93%		Pend	
DEL WEBB CONSOLIDATED SALES AND MODEL CENTER	10.80	0.01	0.07%			2015
Delaware Road Market	0.89	0.00	0.00%		Pend	
DELNOR-WIGGINS PASS STATE PARK	25.12	0.34	1.34%			2014
DIAMOND OAKS VILLAGE	8.28	0.12	1.44%			2015
DISCOVERY DAY ACADEMY	2.28	0.00	0.00%			2014
Dogwood CPD	3.70	0.00	0.00%		Pend	
Dogwood IPD	7.38	0.00	0.00%		Pend	
DOLLAR GENERAL AT 701 GRETCHEN AVENUE SOUTH	1.54	0.00	0.00%			2013
DOWNTOWN ESTERO/F D O T TURN LANES	52.77	2.00	3.79%			2014
DUNKIN DONUTS AIRPORT ROAD PLAZA TR B PARCEL C	0.68	0.00	0.00%			2015
EAGLE FARM WEST	55.62	1.80	3.23%			2015
EAGLE VIEW (RETINA CONSULTANTS)	6.15	0.00	0.00%			2014
East Country Water Control District H	5.36	0.00	0.00%		Pend	
East Country Water Control District H	3.19	0.00	0.00%		2004	
EAST CYPRESS VIEW	4.74	0.00	0.00%			2013
EAST CYPRESS VIEW	4.74	0.00	0.00%			2014
EAST CYPRESS VIEW	4.74	0.00	0.00%			2016
EAST CYPRESS VIEW	4.74	0.00	0.00%			2016
EASTERN METAL SUPPLY	19.97	0.00	0.00%			2014
EASTLINKS BUSINESS PARK LOT 4 AT GATEWAY (GARTNER BLDG 2)	7.41	0.00	0.00%			2014
EL CONDOR	0.59	0.00	0.00%			2014
ESTERO 41 SELF STORAGE	5.14	0.00	0.00%			2014
ESTERO GAS STATION	1.38	0.00	0.00%			2014
ESTERO INTERSTATE COMMERCE PARK	2.73	0.01	0.41%			2014
ESTERO OAKS M P D - 7-ELEVEN	1.24	0.00	0.00%			2015
ESTERO PLACE	48.21	0.00	0.00%			2013
Estero Place	57.41	0.00	0.00%		2013	
ESTERO VETERINARY CLINIC	1.25	0.00	0.00%			2016
EVERGLADES AMMO (LOT 33 - WHITE LAKE CORPORATE PARK PHASE 2)	1.17	0.00	0.00%			2013
EVERGLADES AMMO (LOT 33 - WHITE LAKE CORPORATE PARK PHASE 2)	1.17	0.00	0.00%			2014
EXECUTIVE OFFICES AND TRAINING FACILITY	4.04	0.08	1.92%			2015
Executive Plaza	1.19	0.00	0.00%		Pend	
F G C U OFF-SITE UTILITY IMPROVEMENTS	12.58	0.14	1.13%			2014
F G C U ACADEMIC CORE RECREATIONAL FIELDS	11.43	0.02	0.15%			2016
F G C U LINK EXPANSION	0.21	0.00	0.00%			2016
F G C U NORTH LAKE VILLAGE DINING HALL AND BOARDWALK	6.43	0.04	0.57%			2016
F G C U OFF-SITE UTILITY IMPROVEMENTS	16.83	0.08	0.48%			2014
F G C U OFFSITE UTILITY IMPROVEMENTS-B H G P PORTION	16.83	0.08	0.48%			2014
F G C U PUBLIC RELATIONS MODULAR BLDG	0.75	0.02	3.05%			2015
F P L GOLDEN GATE SERVICE CENTER REDEVELOPMENT PROJECT	12.32	0.05	0.37%			2016
FAIRWAYS TRADE VILLAGE	4.27	0.00	0.00%			2014
FIDDLESTICKS COUNTRY CLUB POOL AREA IMPROVEMENTS	6.43	0.09	1.40%			2014
FIFTH THIRD BANK - BERKSHIRE COMMONS BRANCH (F K A SUN BANK)	0.89	0.00	0.00%			2014
FIRST BANK - IMMOKALEE	1.41	0.00	0.00%			2015
FIRST FRUIT FARMS CORKSCREW FARM	1173.90	42.62	3.63%			2014
FLAMINGO ISLAND FLEA MARKET	9.15	0.00	0.00%			2015
FLORIDA COMMUNITY BANK NAPLES	1.26	0.00	0.00%			2015
FLORIDA GULF COAST UNIVERSITY - PARKING LOT/ACCESS ROAD	0.71	0.00	0.00%			2015
FORD DRYWALL	1.25	0.00	0.00%			2016
FOXFIRE GOLF AND COUNTRY CLUB	2.46	0.00	0.00%			2015
GASTION INC - BERKSHIRE	1.06	0.00	0.00%			2014
GATEWAY GOLF & COUNTRY CLUB - CLUBHOUSE & FITNESS CENTER	0.11	0.00	0.00%			2013
GENOVA	17.53	0.00	0.00%			2016
GERMAIN AUTO IMAGES	1.48	0.00	0.00%			2014
GERMAIN HONDA	10.40	0.00	0.00%			2016
GERMAIN HONDA	10.30	0.00	0.00%		2015	
Gionfriddo Six	1.25	0.00	0.00%		2013	
GOLDEN GATE INN AND COUNTRY CLUB	5.82	0.00	0.00%			2015
GOMEZ TENNIS ACADEMY	5.21	0.00	0.00%			2015
GOODLETTE ARMS OFFICE BUILDING	11.84	0.07	0.59%			2014
GOODLETTE-FRANK ROAD TURN LANES FOR CREEKSIDE	3.17	0.07	2.27%			2014
GOODWILL INDUSTRIES- LOTS 5 AND 5 HERITAGE COMMONS TRACT D	2.01	0.00	0.00%			2016
GOODWILL INDUSTRIES- LOTS 5 AND 6 HERITAGE COMMONS TRACT D	2.01	0.00	0.00%			2016
GREY OAKS CLUBHOUSE EAST EXPANSION	16.04	0.52	3.24%			2015
GREY OAKS CLUBHOUSE EAST EXPANSION	16.02	0.52	3.25%			2015
GREY OAKS CLUBHOUSE WELLNESS CENTER	1.04	0.00	0.00%			2016
GREY OAKS MAINTENANCE FACILITY	2.89	0.00	0.00%			2015
GROUP PRESIDENT ELECTRONICS U S A	1.90	0.00	0.00%			2015
GULF COAST HIGH SCHOOL-CHILLER TANK	0.30	0.00	0.00%			2015
GULF COAST LANDING	1.05	0.00	0.00%			2015
H AND E EQUIPMENT SERVICES	8.16	0.00	0.00%			2015
HABITAT FOR HUMANITY OF COLLIER COUNTY - LEGACY LAKES	10.44	0.03	0.28%			2015
HAMPTON INN NAPLES I-75	3.50	0.00	0.00%			2014
HAMPTON PARK AT GATEWAY LAKE #10/GRIFFIN ROAD SIDEWALK	23.55	0.01	0.04%			2014
HARLEY DAVIDSON - MOTOR SPORTS	16.53	0.00	0.00%			2015
HARLEY DAVIDSON MOTOR SPORTS SOLUTIONS	16.53	0.00	0.00%			2014
HARRIS MORAN RESEARCH FACILITY	6.32	0.00	0.00%			2013
HARRIS MORAN RESEARCH FACILITY	7.63	0.00	0.00%			2014
Health Park Luxury Apartments	3.62	0.00	0.00%		Pend	
HERITAGE BAY CLUBHOUSE	10.82	0.00	0.00%			2015
HERITAGE BAY COMMONS TRACT D	11.53	0.00	0.00%			2014

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HERITAGE BAY TRACT D	11.53	0.00	0.00%			2013
HERITAGE BAY TRACT D	11.53	0.00	0.00%			2013
HERITAGE BUILDERS STORAGE FACILITY	0.56	0.00	0.00%			2014
HERTZ GLOBAL HEADQUARTERS	34.25	0.00	0.00%			2013
HIDDEN LAKE RESIDENTIAL	6.04	0.29	4.74%			2014
HIGH POINT COUNTRY CLUB (REF: A# 150526-1)	41.35	0.48	1.15%			2015
HIGH POINT COUNTRY CLUB GROUP 11	41.35	0.48	1.15%			2015
HILTON MOVING STORAGE -LOT 21 WHITE LAKE CORPORATE PARK PH 3	1.71	0.00	0.00%			2014
HIWASSE	12.55	0.00	0.00%			2015
HOME DEPOT OUTPARCEL 4 (REF: A# 160126-16)	1.19	0.00	0.00%			2016
Homestead 30 MPD	30.00	0.00	0.00%		Pend	
HOMESTEAD RD FROM S OF SUNRISE BLVD TO N OF ALABAMA RD	30.54	0.01	0.04%			2016
HOPE LUTHERAN CHURCH	9.31	0.00	0.00%			2016
HOPE LUTHERAN CHURCH REZONING	9.31	0.00	0.00%			
HUFF MOVING AND STORAGE	2.26	0.00	0.00%			2016
HUFF MOVING AND STORAGE	2.26	0.00	0.00%			2016
HUMANE SOCIETY OF NAPLES	2.71	0.00	0.00%			2016
HYATT REGENCY AT COCONUT POINT - AMENITY EXPANSION	1.00	0.00	0.00%			2015
HYATT REGENCY AT COCONUT POINT - OUTFALL RELOCATION	1.00	0.00	0.00%			2016
I-75 AT GOLDEN GATE PARKWAY	12.01	0.00	0.00%			2013
I-75 CONTRAFLOW AT COLLIER BLVD (C R 951)	3.26	0.00	0.00%			2014
I-75 RECREATIONAL ACCESS SITES AND NORTH REST AREA AT M M 63	9.88	0.00	0.00%			2014
IBERIABANK	1.18	0.00	0.00%			2014
IMMOKALEE AGRICOM PARK PHASE 2 LOTS 11 AND 12	5.50	0.07	1.31%			2013
IMMOKALEE MIDDLE SCHOOL	23.36	0.00	0.00%			2014
IMMOKALEE RD CR 951 TO 43RD AVE N E (BASIN 4)	85.32	1.87	2.19%			2013
IMMOKALEE REGIONAL AIRPORT	817.58	25.45	3.11%			2014
IMMOKALEE REGIONAL AIRPORT - RUNWAY 9-27 REHABILITATION	167.76	1.23	0.73%			2013
IMMOKALEE ROAD CHLORAMINE BOOSTER STATION	85.32	1.87	2.19%			2014
IMMOKALEE STORMWATER IMPROVEMENTS PHASE II - IMMOKALEE DRIVE	9.35	0.00	0.00%			2013
IMPERIAL BONITA PLAZA (A PORTION OF LOT 5)	9.90	0.00	0.00%			2014
IMPERIAL BONITA PLAZA (A PORTION OF LOT 5)	9.90	0.00	0.00%			2016
International Centre FQD	15.00	0.00	0.00%		1991	
INTERNATIONAL DESIGN	0.70	0.00	0.00%			2014
Iron Horse Commerce Park CPD	5.60	0.00	0.00%		Pend	
J AND C BOULEVARD OUTFALL DRAINAGE IMPROVEMENTS PHASE I I-A	1.26	0.00	0.00%			2015
J&C BOULEVARD PHASE I I I OUTFALL IMPROVEMENTS	11.29	0.00	0.00%			2014
JAMAICA BAY SEWAGE TREATMENT PLANT REMOVAL	6.77	0.00	0.00%			2015
JASONS DELI - GULFCOAST LANDINGS	1.39	0.00	0.00%			2014
JETPORT LOOP EXTENSION	0.93	0.00	0.00%			2016
JETPORT LOT 15 - MOTORSPORTS OF FORT MYERS	5.27	0.00	0.00%			2015
K BOB GROVE	15.13	0.38	2.49%			2014
KATHYS QUALITY CLEANING	0.38	0.00	0.00%			2014
KILPATRICK WAREHOUSE/LOT 47 TRADE CTR OF NAPLES	0.64	0.00	0.00%			2014
KING BRANDS WAREHOUSE EXPANSION	3.29	0.00	0.00%			2015
L A S I P - LELY MANOR BASIN WINGSOUTH AIRPARK IMPROVEMENTS	11.57	0.00	0.00%			2014
L C E C SERVICE CTR-CARPORT ADD LOTS 2-3, IMMOKALEE PHASE 1	5.05	0.00	0.00%			2014
L W MARKETING ANNEX	0.60	0.00	0.00%			2014
LA MORADA MULTI-FAMILY TRACTS	25.68	0.17	0.65%			2015
LAKE TRAFFORD ROAD AND N 19TH STREET	1.83	0.00	0.00%			2014
LASIP PHASE 19 B - CROWN POINTE WEIR	0.89	0.00	0.00%			2015
LEE CO COMPLETE ST INITIATIVE TIGER GRANT 19 DANIELS PKWY	39.52	0.00	0.00%			2015
LEE CORNERS	0.02	0.00	0.00%			2015
Lee Corners CPD	0.02	0.00	0.00%		Pend	
LEE COUNTY COMPLETE STREETS INITIATIVE, TIGER GRANT NO. 19	12.55	0.03	0.23%			2015
LEE COUNTY IND PARK LOT 2 BLOCK B	1.86	0.00	0.00%			2014
LEE HEALTH VILLAGE AT COCONUT POINT	6.28	0.00	0.00%			2016
LEE INDUSTRIAL PARK	38.78	0.00	0.00%			2016
LEELAND HEIGHTS BLVD SIDEWALK	11.54	0.00	0.00%			2015
LEGACY LAKES	10.44	0.03	0.28%			2016
LIFE CARE CENTER OF ESTERO	9.60	0.00	0.00%			2014
LONGVIEW CENTER	4.63	0.00	0.00%			2015
LOT 13 A - ENTERPRISE CAR RENTAL	2.13	0.10	4.48%			2015
LOT 155 J AND C INDUSTRIAL PARK	0.57	0.00	0.00%			2014
LOT 16 JETPORT INTERSTATE COMMERCE PK JETPORT CENTER	7.90	0.00	0.00%			2016
LOT 18 ALICO COMMERCIAL PARK (NOUGHTON - DREW CIRCLE)	1.24	0.03	2.26%			2015
LOT 2 PINE AIR LAKES UNIT SIX (NAPLES INFINITI-VOLVO)	11.35	0.12	1.05%			2016
LOT 3 - CREEKSIDE COMMERCE PARK (AESTHETIC SURGERY CENTER)	1.32	0.05	3.62%			2015
LOT 33 AND 34 JETPORT INTERSTATE COMMERCE PARK	1.88	0.00	0.00%			2016
LOT 46 TRADE CENTER WAY - SIGL BLDG	0.82	0.00	0.00%			2014
LOT 78 TRADE CENTER WAY	0.66	0.00	0.00%			2014
LOTS 10 AND 11 JETPORT INTERSTATE PARK	3.07	0.00	0.00%			2015
LOTS 13 AND 14 TRADE CENTER OF NAPLES	1.24	0.00	0.00%			2014
LOTS 148 & 149 - J & C INDUSTRIAL PARK	1.26	0.00	0.00%			2014
LOTS 36 AND 37 - SHANCO INDUSTRIAL BUILDING	1.85	0.00	0.00%			2015
LOTS 43-45 WHITE LAKE CORPORATE PARK - WOODSPRING SUITES	2.97	0.00	0.00%			2016
LOWES OF NAPLES	14.94	0.00	0.00%			2015
MAINLINE IND PARK - E 1/2 OF LOT 8 (TALLOWMASTERS WAREHOUSE)	1.13	0.00	0.00%			2015
MAPLE RIDGE AT AVE MARIA PHASE 2	25.30	0.00	0.00%			2013
MAPLE RIDGE ESTATE MODEL LOTS	6.45	0.00	0.00%			2014
MARINA BAY PLAT THREE	27.96	0.34	1.20%			2016
MARINA BAY PLAT TWO (PARCELS C AND E)	80.84	0.00	0.01%			2015
MARINA BAY RECREATION TRACT AND PARCELS C AND E	80.74	0.00	0.01%			2015
MARJAM SUPPLY COMPANY / STORAGE YARD	10.94	0.00	0.00%			2015
Marni Fields	16.38	0.00	0.00%		Pend	

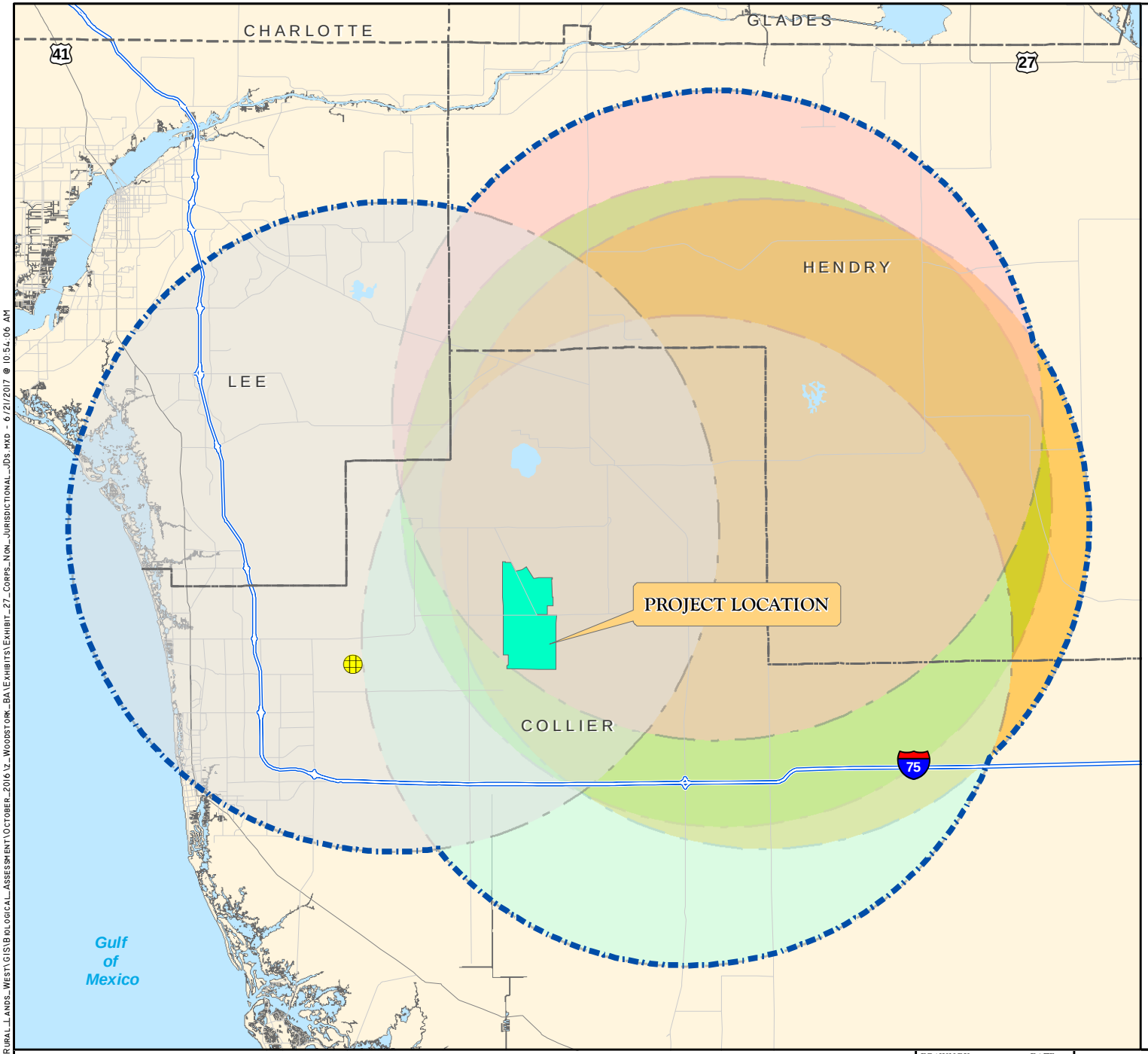
PROJECT NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	DRI	PUD	DISTRICT
MAX HASSEE COMMUNITY PARK - MONOPOLE TOWER	0.23	0.00	0.00%			2016
MC CABE HANGAR AT NAPLES AIRPORT AUTHORITY	1.23	0.00	0.00%			2015
MC DONALDS RESTAURANT - LOT 4	1.05	0.00	0.00%			2015
MCCABE HANGAR PHASES 1 AND 2 AT NAPLES AIRPORT	2.27	0.00	0.00%			2015
MEDITERRA FITNESS CENTER	1.18	0.00	0.00%			2016
MEDITERRA VILLAGE CENTER	23.43	0.00	0.00%			2014
MERCEDES-BENZ NAPLES PARKING ANNEX (PRODUCTION PARK BASIN 4)	2.82	0.00	0.00%			2015
MERIDIAN MARKET PLACE	10.19	0.00	0.00%			2015
MERIDIAN PLACE	12.33	0.00	0.00%			2013
MIDWAY EXPANSION	0.71	0.00	0.00%			2014
MIRAGE BAY LUXURY APARTMENTS	3.73	0.00	0.00%			2014
MIRAGE BAY LUXURY APARTMENTS	3.71	0.00	0.00%			2015
MIROMAR LAKES BOAT STORAGE FACILITY	2.04	0.00	0.00%			2016
MOORINGS PARK BOX CULVERT	12.71	0.00	0.00%			2015
MOORINGS PARK BOX CULVERT	12.71	0.00	0.00%			2015
MOORINGS PARK BUILDING L M AND N EXPANSION	12.71	0.00	0.00%			2015
MOORINGS PARK GARDEN APARTMENTS	7.92	0.28	3.47%			2015
MURPHY U S A	0.78	0.00	0.00%			2015
MY OTHER PLACE 2	1.43	0.00	0.00%			2014
MY OTHER PLACE 3	0.53	0.00	0.00%			2016
N C H HEALTHCARE- NORTHEAST	3.36	0.12	3.58%			2014
N C H HEALTHCARE- TEMPORARY OFFICE	1.01	0.00	0.00%			2014
NAA MAINTENANCE FACILITY EXPANSION	2.82	0.00	0.00%			2013
NAPLES ACURA	2.49	0.00	0.00%			2016
NAPLES AIRPORT OBSERVATION PLATFORM RESTROOM	0.02	0.00	0.00%			2016
NAPLES BEACH AND GOLF CLUB	1.58	0.00	0.00%			2016
NAPLES HERITAGE TENNIS CENTER	8.21	0.07	0.89%			2015
NAPLES PRODUCTION PARK (4774 MARKET AVENUE)	0.53	0.00	0.00%			2015
NORTHBROOKE MEDICAL	0.91	0.00	0.00%			2013
OAK RIDGE SUBDIVISION	7.78	0.00	0.00%			2014
OAK RIDGE SUBDIVISION (REF: A# 140528-6)	8.30	0.00	0.00%			2014
OLDE FLORIDA GOLF CLUB WETLAND IMPACT	0.06	0.00	0.00%			2015
Olympia Development Group CPD	1.95	0.00	0.00%		2000	
ORANGE BLOSSOM RANCH	510.75	24.15	4.73%			2014
ORANGE TREE SHERIFFS SUBSTATION	5.91	0.12	2.10%			2015
OUR LADY OF GUADALUPE	8.93	0.00	0.00%			2015
OUR LADY OF LIGHT CATHOLIC COMMUNITY CHURCH	14.49	0.00	0.00%			2015
P D Q - GULF COAST TOWN CENTER	1.14	0.00	0.00%			2014
P D Q GULF COAST TOWN CENTER	1.14	0.00	0.00%			2015
P F HOLDING	1.26	0.00	0.00%			2014
P V A OFFICE BUILDING	2.24	0.00	0.00%			2014
PACIFIC LAND COMPANY INDUSTRIAL PARK	65.09	2.04	3.13%			2014
PALAZZO AT NAPLES (FKA PALAZZO VILLAGE)	21.70	0.00	0.00%			2014
PALAZZO AT NAPLES (FKA PALAZZO VILLAGE)	21.70	0.00	0.00%			2015
PALAZZO VILLAGE REF: 140113-7	21.70	0.00	0.00%			2014
PARADISE ROAD SIDEWALK ADDITION	4.96	0.10	1.98%			2014
PARK SHORE SHOPPING CENTER	22.25	0.00	0.00%			2015
PELICAN BAY SERVICES M P S 109	1.55	0.00	0.00%			2014
PELICAN MARSH COMMUNITY CENTER - BOCCE COURT ADDITION	5.62	0.00	0.00%			2014
PELICAN MARSH PHASE 4 ECKERD @ VANDERBILT GALLERIA PARCEL 1	1.50	0.00	0.00%			2015
PELICANS NEST RECLAIMED WATER MAIN EXTENSION	3.05	0.03	0.99%			2015
PEZZETTINO DI CIELO	17.52	0.00	0.00%			2016
Phil Pugh/Pelican Landing Business Park	6.89	0.00	0.00%		1988	
PINBOYZ (LOT S 108.53 OF G-2, LOT G-3 & LOT N 87 OF G-4)	4.10	0.00	0.00%			2013
PINE AIR LAKES (OUTPARCEL 1) - ALDI NAPLES	1.54	0.00	0.00%			2015
PINECREST ELEMENTARY SIDEWALKS	44.08	0.00	0.00%			2015
PIZZA HUT RESTAURANT- SPRINGS PLAZA	0.98	0.00	0.00%			2015
POINCIANA ELEMENTARY SCHOOL	17.38	0.00	0.00%			2013
PONZA	5.30	0.00	0.00%			2014
POSITANO AT MIROMAR LAKES	3.58	0.01	0.24%			2015
PROPOSED SIDEWALK IMPROVEMENTS ON NEW MARKET ROAD	26.46	0.54	2.02%			2014
PROSCAN MEDICAL BUILDING	1.02	0.00	0.00%			2014
PUBLIX 604 SHOPPES AT PELICAN LANDING	13.29	0.00	0.00%			2015
PUBLIX NO 604 - SHOPPES AT PELICAN LANDING	13.29	0.00	0.00%			2014
PUBLIX ORANGETREE	9.98	0.00	0.00%			2015
QUAIL WEST HUFF BULKHEAD	0.03	0.00	0.00%			2014
QUARRY PHASE 7	7.75	0.02	0.31%			2014
RACE TRAC AT ARBORWOOD	1.92	0.00	0.00%			2014
RACETRAC AT ARBORWOOD	1.92	0.00	0.00%			2014
RACETRAC AT BELLAIRE BAY	1.68	0.00	0.00%			2015
RACETRAC AT POWERS COURT	2.05	0.00	0.00%			2015
RACETRAC AT SIX MILE CYPRESS	1.70	0.00	0.00%			2016
RADIATION THERAPY REGIONAL CENTER	1.96	0.01	0.26%			2015
RENAISSANCE CENTER PARCEL A	2.11	0.00	0.00%			2013
RESERVE AT SILVERSTONE	194.73	0.53	0.27%			2013
RESTAURANT DEPOT OF FORT MYERS	7.47	0.00	0.00%			2015
RIGHT TURN LANE ON ESTERO PARKWAY AT THREE OAKS PARKWAY	29.42	0.57	1.93%			2014
RIVERVIEW CENTER	23.50	0.05	0.22%			2014
Riverview Center (FKA Freeman Harrelson) CPD	23.50	0.05	0.21%		EXP	
RIVERWOODS PLANTATION RV RESORT	5.54	0.00	0.00%			2013
ROBB & STUCKY DISTRIBUTION CENTER	20.22	0.00	0.00%			2016
Royal Woods Phase II	12.53	0.02	0.14%		Pend	
RUNWAY 14 - 32 SAFETY AREA DRAINAGE IMPROVEMENTS	68.91	0.00	0.00%			2014
S R 45 (U S 41) NORTH OF BONITA BEACH ROAD TO U S 41	75.04	2.92	3.88%			2015
S R 84 COUNTY BARN-SANTA BARBARA BLVD F P I D 433173-1-32-01	15.92	0.44	2.76%			2015

PROJECT NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	DRI	PUD	DISTRICT
S W F I A SECURITY GATE 64 RELOCATION	1.41	0.00	0.00%			2015
S W F INVESTMENTS	8.78	0.00	0.00%			2013
S W INTERNATIONAL TRACT F2	3.88	0.11	2.81%			2014
S W INTERNATIONAL TRACT F-2	3.88	0.11	2.81%			2014
S W INTERNATIONAL TRACT F-3	4.11	0.01	0.22%			2015
S W INTERNATIONAL TRACT K	6.55	0.07	1.05%			2014
SALEX PIZZERIA & OFFICE/RETAIL AT GATEWAY	0.72	0.00	0.00%			2015
SAN CARLOS TOWN CENTER	9.21	0.00	0.00%			2014
SANDERS LABORATORIES FACILITY - PART OF LOT 6 BLOCK D	0.73	0.00	0.00%			2015
SCHNEIDER WAREHOUSE	1.55	0.00	0.00%			2013
SEAGLASS (F K A ESPERIA NORTH)	3.41	0.00	0.00%			2016
SEAGLASS (FKA ESPERIA NORTH AT BONITA BAY)	3.41	0.00	0.00%			2015
SENECA WAY AT TALIS PARK	19.92	0.96	4.83%			2014
SHANGRI LA ROAD SIDEWALK ADDITION	2.70	0.01	0.34%			2014
SHANGRI-LA ROAD EXTENSION	4.72	0.04	0.84%			2014
SHAW DEVELOPMENT FACILITY EXPANSION (BERNWOOD BUSINESS PARK)	5.49	0.00	0.00%			2014
SHELTERING PINES DRAINAGE IMPROVEMENTS	23.60	0.07	0.28%			2014
SHIRLEY STREET (6301)	1.36	0.00	0.00%			2016
SHIRLEY STREET CONCRETE BATCH PLANT	2.01	0.00	0.00%			2016
SHOPPES AT GRANDE OAK - LOT 2 (DUNKIN DONUTS - VALVOLINE)	21.22	0.00	0.00%			2016
SHOPPES OF COCONUT TRACE	1.90	0.00	0.00%			2015
SHOPS AT ESTERO TOWN COMMONS	6.32	0.00	0.00%			2016
SILVER LAKES	1.61	0.00	0.00%			2015
SIX MILE CYPRESS LEE CO COMPLETE STREETS INITIATIVE TIGER	47.01	0.86	1.83%			2015
SIX MILE CYPRESS PARKWAY AND METRO PARKWAY INTERSECTION IMPR	6.80	0.00	0.00%			2016
SIX MILE CYPRESS SENIOR HOUSING FACILITY	8.91	0.00	0.00%			2015
SMITH AND DESHIELDS - LOTS 36 AND 37 INDUSTRIAL PARK	2.01	0.00	0.00%			2014
SOLNIC	0.33	0.00	0.00%			2015
SOMERSET PHASE 4 B	13.97	0.00	0.00%			2014
SOMERSET PHASE 4A	72.68	0.00	0.00%			2013
SOMERSET PHASE 5	51.98	0.03	0.06%			2015
SORRENTO - PHASE II	3.93	0.00	0.00%			2013
Southwest Florida International Airport	1.51	0.00	0.00%		1976	
SPECIALIZED VETERINARY SERVICES	1.70	0.00	0.00%			2015
SPEEDWAY NO 06570	0.82	0.00	0.00%			2015
SPEEDWAY NO 06570	0.82	0.00	0.00%			2015
SPONGE SPA	1.31	0.00	0.00%			2016
SPRING RUN AT THE BROOKS	0.04	0.00	0.00%			2015
ST MATTHEWS HOUSE CFPD	2.42	0.00	0.00%			
STATE ROAD 82 AT CORKSCREW ROAD (CR 850) INTERSECTION	10.67	0.50	4.73%			2016
STUDENT HEALTH SERVICES MODULAR BLDG	0.56	0.00	0.00%			2014
SUN HARVEST CITRUS	2.33	0.06	2.77%			2015
SUN HARVEST CITRUS	2.33	0.06	2.77%			2015
SUNCOAST ACURA / SAAB / SUZUKI	7.19	0.00	0.00%			2016
Sunshine 23 CPD	1.74	0.00	0.00%		2014	
SUNSHINE BLVD AND 12TH STREET WEST INTERSECTION IMPROVEMENTS	0.23	0.00	0.00%			2016
SUNTRUST BANK AT COCONUT TRACE	1.33	0.00	0.00%			2015
SW REGIONAL COMMERCE AND TRADE CENTER LOTS 15 AND 16	1.99	0.00	0.00%			2014
TACO BELL - GULF COAST TOWN CENTER	1.11	0.00	0.00%			2016
TAYLOR-1 OFFICE AND WAREHOUSE BUILDINGS	1.26	0.00	0.00%			2014
TEMPLE CITRUS GROVE	131.57	0.00	0.00%			2014
TEMPLE CITRUS GROVE	131.57	0.00	0.00%			2015
TEMPLE CITRUS GROVE RPUD	131.57	0.00	0.00%		2014	
TERMINAL ACCESS ROADWAY WIDENING	38.04	0.14	0.37%			2015
TESONE BASIN 12	15.15	0.00	0.00%			2013
THE ARISTOCRAT	10.52	0.00	0.00%			2016
THE BROKERAGE L L C	0.25	0.00	0.00%			2014
THE BROOKS - OS-1 AND WATER QUALITY REVISIONS	7.71	0.00	0.00%			2014
THE CLUBHOUSE AT QUAIL WEST	14.51	0.01	0.04%			2016
THE COMMONS AT THE BROOKS - PICKLEBALL COURTS	3.74	0.00	0.00%			2015
THE IMPERIAL HEALTH CARE CENTER	4.00	0.00	0.11%			2016
THE LORD'S WAY 30 ACRE RPUD	30.17	0.00	0.00%		2014	
THE LORDS WAY/HACIENDA LAKES BUSINESS PARK	1.93	0.00	0.00%			2016
THE MANORS AT ORANGE CREEK	25.22	0.10	0.39%			
THE MERCATO	11.06	0.00	0.00%			2014
THE MOORINGS AT GREY OAKS	15.55	0.00	0.00%			2013
THE MOORINGS AT GREY OAKS	15.62	0.00	0.00%			2016
THE PLAZA AT PARKER COMMONS	3.86	0.00	0.00%			2014
THE QUARRY BEACH CLUB EXPANSION	7.60	0.06	0.81%			2015
THE RESIDENCES AT VYNE HOUSE	0.76	0.01	0.82%			2014
THE SHOPPES AT GRANDE OAK - PERKINS RESTAURANT - LOT 5	2.08	0.00	0.00%			2015
THE WAREHOUSE	0.95	0.00	0.00%			2016
THREE OAKS PARKWAY DRAINAGE CONVEYANCE	7.71	0.00	0.00%			2014
THREE OAKS TOWN CENTER - 7-ELEVEN	0.20	0.00	0.00%			2015
THREE OAKS TOWN CENTER - 7-ELEVEN	5.69	0.06	1.02%			2015
THREE OAKS TURN LANES FOR ESTERO PLACE	1.10	0.00	0.00%			2014
THREE OAKS W W T P - OXIDATION DITCH IMPROVEMENTS PHASE I I	17.62	0.00	0.00%			2014
TIDE / STARBUCKS AT 4099 TAMIAMI TRAIL NORTH	3.08	0.00	0.00%			2015
TIMBERWALK SOUTH APARTMENTS	16.94	0.00	0.00%			2016
TOLL GATE COMMERCIAL CENTER - TRACT 5	0.97	0.00	0.00%			2015
TOLL GATE COMMERCIAL CENTER (REF: A# 150708-13)	5.82	0.00	0.00%			2015
TOLLGATE PUD (LOT 22) - K A M CONCRETE PUMPING 2	2.72	0.00	0.00%			2015
TOWER DRIVE DRAINAGE MODIFICATIONS AT NAPLES AIRPORT	0.50	0.00	0.00%			2016
TRACT B AT 3500 CORPORATE PLAZA	2.59	0.00	0.00%			2016
TRACT M-M	5.13	0.01	0.21%			2015

PROJECT NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	DRI	PUD	DISTRICT
TRADE CENTER OF NAPLES - LOT 50	0.65	0.00	0.00%			2014
TREE FARM P U D	52.02	1.89	3.62%			2014
TREELINE DISTRIBUTION CENTER	22.21	0.00	0.00%			2014
TREELINE DISTRIBUTION CENTER	22.21	0.00	0.00%			2015
Treeline Distribution Center	22.49	0.00	0.00%		2015	
TREELINE PLAZA - LOT 1 BLOCK C AIRPORT WOODS COMMERCE CTR	1.93	0.00	0.03%			2015
TURKUOISE TRADING WAREHOUSE	0.68	0.00	0.00%			2013
TUSCANY POINTE	29.45	0.49	1.65%			2014
TUSCANY POINTE RPUD	29.67	0.02	0.06%		2013	
TWIN PEAKS RESTAURANT	1.63	0.00	0.00%			2014
TWINEAGLES - BLOCK 111	17.99	0.00	0.00%			2014
TWINEAGLES - BLOCK 109	23.74	0.00	0.00%			2014
TWINEAGLES GRAND ARBORS (BLOCK 110)	11.04	0.00	0.00%			2015
U S 41 (DOWNTOWN ESTERO F D O T IMPROVEMENTS)	2.97	0.00	0.00%			2015
U S 41 ESTERO - LEETRAN BUS SHELTERS	0.04	0.00	0.00%			2015
U S 41 FROM ALICO ROAD TO DANIELS PARKWAY BUS PADS 434939-1	43.58	1.63	3.75%			2016
U S 41 FROM PELICAN BAY BLVD TO C R 862 - SIDEWALK	9.68	0.00	0.00%			2014
UNIVERSITY CONTROLLER MODULAR	0.88	0.02	1.92%			2014
US 41 ROW IMPROVEMENTS FOR COCONUT HONDA DEALERSHIP	0.14	0.00	0.00%			2015
US 41 SIDEWALK - PINE RIDGE RD. TO PELICAN BAY BLVD. (NORTH)	53.17	0.00	0.00%			2016
US 41 SIDEWALK - PINE RIDGE RD. TO PELICAN BAY BLVD. (SOUTH)	53.17	0.00	0.00%			2016
VALENCIA GOLF AND COUNTRY CLUB PHASE 3	6.08	0.20	3.30%			2014
VANDERBILT CONNERS SUBDIVISION	104.25	2.35	2.26%			2015
VASARI	1.48	0.00	0.00%			2015
VETERANS COMMUNITY PARK	0.18	0.00	0.00%			2015
VETERANS PARK ACADEMY FOR THE ARTS	0.04	0.00	0.00%			2016
Via Coconut	18.53	0.00	0.00%		Pend	
VILLAGES AT MONTEREY - CLUBHOUSE RENOVATION	2.88	0.00	0.05%			2016
VINEYARDS ELEMENTARY	18.02	0.00	0.00%			2016
VIO CENTER	0.64	0.00	0.00%			2015
WAGON TRAIL TO CAFE OF LIFE SIDEWALK ADDITION	4.88	0.00	0.00%			2014
WAL MART STORE 2237 - LIQUOR BOX ADDITION	18.85	0.00	0.00%			2014
WALGREENS - PINE RIDGE AND AIRPORT PULLING	2.62	0.00	0.00%			2014
WALGREENS - PINE RIDGE AND AIRPORT PULLING	1.79	0.00	0.00%			2015
WALMART STORE 1957	1.96	0.02	1.02%			2014
WALMART STORE 5055 - LIQUOR BOX ADDITION	23.95	0.00	0.00%			2014
WAL-MART STORE 5391 - LIQUOR BOXADDITION	23.75	0.00	0.00%			2014
WATERSIDE AT BAY BEACH PHASE 6	1.95	0.03	1.35%			2016
WATERSIDE AT BAY BEACH PHASE 6	1.95	0.03	1.51%			2014
WEST CYPRESS VIEW	10.84	0.00	0.00%			2013
WEST CYPRESS VIEW	10.84	0.00	0.00%			2014
WEST CYPRESS VIEW	10.76	0.00	0.00%			2016
WEST CYPRESS VIEW	4.66	0.00	0.00%			2016
WEST LAKE COURT	9.57	0.34	3.57%			2014
WEST TERRY STREET SIDEWALK	0.70	0.00	0.00%			2016
WILLIAMS ROAD RIGHT TURN LANE AT U S 41	0.64	0.00	0.00%			2013
WILLOW RUN	560.46	0.00	0.00%		2014	
WYNDEMERE COUNTRY CLUB PHASE 2	1.04	0.00	0.00%			2015
YAHL STREET INDUSTRIAL PROJECT	2.17	0.01	0.58%			2014
YMCA - WALGREENS (BERM)	2.62	0.00	0.00%			2014
ZAXBYS GULF COAST TOWN CENTER	1.25	0.00	0.00%			2015
TOTALS/AVERAGES	**10,555.42**	**170.67**	**0.39%**			

EXHIBIT 27

COE NON-JURISDICTIONAL DETERMINATIONS ISSUED 2009 THROUGH 2012 WITHIN WOOD STORK ACTION AREA



NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

J:\2005\05cen\481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016 Vz_Woodstork_BA\Exhibits\Exhibit_27_Corps_Non_Jurisdictional_JDs.mxd - 6/21/2017 @ 10:54:06 AM

EXHIBIT 27. CORPS NON-JURISDICTIONAL DETERMINATIONS ISSUED 2009 THROUGH 2012 WITHIN WOOD STORK ACTION AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

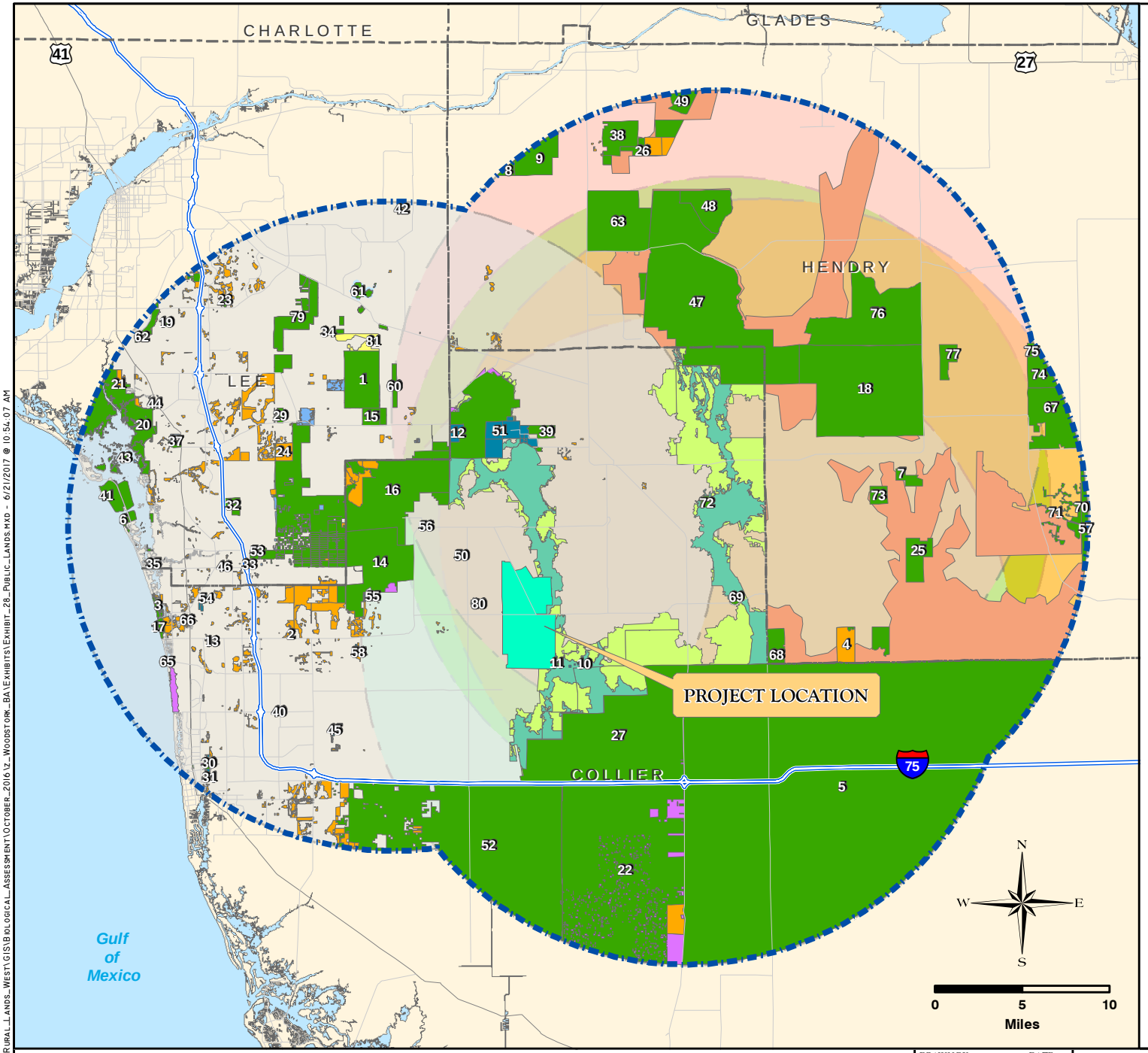
Exhibit 27A. Corps Non-Jurisdictional Determinations from 2009 through 2012 within Wood Stork Action Area

Map ID	Project	COE Application No.	Date	Location	Project Acreage	Isolated Wetland Acreage
1	Olde Florida Golf Club Phase II	SAJ-1993-31697	5/24/2011	Lat 26.251956 / Long 81.651793	258	30.88

Note: Corps non-jurisdictional information was obtained on January 28, 2012 and March 4, 2012 from Freedom of Information Act Request No. 12-189.

EXHIBIT 28

CUMULATIVE CONSERVATION LANDS WITHIN WOOD STORK ACTION AREA



LEGEND

- Rural Lands West
- Wood Stork Action Area
- Florida Managed Areas
- Florida Rock FDEP Conservation Easement
- Conservation Collier Land Acquisition
- Collier County Conservation Designation FLU
- Hendry County Preserve FLU
- Lee County Conservation Lands FLU
- Lee 2020
- Flowway Stewardship Area
- Habitat Stewardship Area
- SFWMD Conservation Easements

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

NOTES:

Florida Managed Areas were acquired from the Florida Natural Areas Inventory website http://www.fnai.org/gisdata.cfm July 2016.

Conservation Collier Land Acquisition was acquired from the Collier County Government website http://www.colliergov.net/index.aspx?page=2713 July 2016.

Collier FLU was acquired from the Collier County GIS website http://gis.colliergov.net/website/downloadnet/download.aspx July 2016.

Hendry FLU was acquired from the Southwest Florida Regional Planning Council website http://www.swfrpc.org/maps.htm#future%20land%20use Regional Future Land 2020 use map July 2016 and is current to 2001.

Lee FLU was acquired from the Lee County Government website http://leegis.leegov.com/gisdata.htm July 2016.

Lee 2020 was acquired from the Lee County Government website http://www.leegov.com/gis July 2016.

FSA and HSA areas were acquired from the Collier County Government website http://www.colliergov.net/index.aspx?page=2713 July 2016.

SFWMD Conservation Easements were acquired from the SFWMD website http://my.sfwmd.gov/gisapps/sfwmdxwebdc/ July 2016.

EXHIBIT 28. CUMULATIVE CONSERVATION LANDS WITHIN WOOD STORK ACTION AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	11/9/16
REVIEWED BY	DATE
S.R.	11/9/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

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Exhibit 28A. Conservation Lands within Wood Stork Action Area

MAP ID	NAME	MANAGING AGENCY	OWNER	COUNTY	TOTAL ACRES
1	Airport Mitigation Park	Lee County	Lee County	LEEX	4,154.70
2	Alligator Flag Preserve	Collier County	Collier County	COLL	18.71
3	Barefoot Beach Preserve County Park	Collier County	Collier County	COLL	200.58
4	Big Cypress Mitigation Bank	Earthmark Southwest Florida Mitigation, LLC	Private Individual(s)	HEND	2,193.68
5	Big Cypress National Preserve	US Dept. of the Interior, National Park Service	US Dept. of the Interior, National Park Service	BROW, COLL, DADE, MONR	164,395.07
6	Big Hickory Island Preserve	Lee County	Lee County	LEEX	269.64
7	BR Bar Ranch Conservation Easement	FL Dept. of Environmental Protection, Div. of State Lands	Private Individual(s)	HEND	562.25
8	C-43 Basin Storage Reservoir - Part 1	South Florida Water Management District	South Florida Water Management District	HEND	288.38
9	Caloosahatchee Basin Water Storage Reservoir	South Florida Water Management District	South Florida Water Management District	HEND	2,554.89
10	Camp Keais Strand	Collier County	Collier County	COLL	32.96
11	Camp Keais Strand (SFWMD)	South Florida Water Management District	South Florida Water Management District	COLL	53.32
12	Caracara Prairie Preserve	Collier County	Collier County	COLL	380.34
13	Cocohatchee Creek Preserve	Collier County	Collier County	COLL	3.78
14	Corkscrew Regional Ecosystem Watershed	South Florida Water Management District	South Florida Water Management District	COLL, LEEX	28,108.87
15	Corkscrew Regional Mitigation Bank	South Florida Water Management District	South Florida Water Management District	LEEX	643.54
16	Corkscrew Swamp Sanctuary	National Audubon Society, Inc.	National Audubon Society, Inc.	COLL, LEEX	13,117.90
17	Delnor-Wiggins Pass State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks	Trustees of the Internal Improvement Trust Fund	COLL	201.05
18	Dinner Island Ranch Wildlife Management Area	FL Fish and Wildlife Conservation Commission	Trustees of the Internal Improvement Trust Fund	HEND	21,706.00
19	Eagle Lake Preserve	Lee County	Lee County	LEEX	41.05
20	Estero Bay Preserve State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks	Trustees of the Internal Improvement Trust Fund	LEEX	5,905.02
21	Estero Marsh Preserve	Lee County	Lee County	LEEX	243.86
22	Fakahatchee Strand Preserve State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks	Trustees of the Internal Improvement Trust Fund	COLL	40,900.01
23	Flag Pond Preserve	Lee County	Lee County	LEEX	66.92
24	Flint Pen Strand	Lee County	Lee County	LEEX	989.54
25	Florida Panther Conservation Bank Conservation Easement	US Dept. of the Interior, Fish and Wildlife Service	Florida Panther Conservation, LLC	HEND	1,933.00
26	Florida Panther Conservation Bank II Conservation Easement	US Dept. of the Interior, Fish and Wildlife Service	Florida Panther Conservation, LLC	HEND	462.83
27	Florida Panther National Wildlife Refuge	US Dept. of the Interior, Fish and Wildlife Service	US Fish & Wildlife Service	COLL	26,355.26
28	Freedom Park	Collier County	Collier County	COLL	12.53
29	Gator Hole Preserve	Lee County	Lee County	LEEX	174.99
30	Gordon River Greenway Park	Collier County	Collier County	COLL	83.87
31	Gordon River Greenway Preserve	Collier County	Collier County	COLL	41.61
32	Hidden Cypress Preserve	Lee County	Lee County	LEEX	428.52
33	Imperial Flowway	South Florida Water Management District	Trustees of the Internal Improvement Trust Fund	LEEX	12.82
34	Imperial Marsh Preserve	Lee County	Lee County	LEEX	522.44
35	Imperial River Preserve	Lee County	Lee County	LEEX	46.19
36	Koreshan Preserve	Lee County	Lee County	LEEX	37.67
37	Koreshan State Historic Site	FL Dept. of Environmental Protection, Div. of Recreation and Parks	Trustees of the Internal Improvement Trust Fund	LEEX	196.15
38	LaBelle Ranch, Inc. Conservation Easement	FL Dept. of Environmental Protection, Div. of State Lands	Private Individual(s)	HEND	3,018.28
39	Lake Trafford Impoundment	South Florida Water Management District	South Florida Water Management District	COLL	634.64
40	Logan Woods Preserve	Collier County	Collier County	COLL	6.82
41	Lovers Key State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks	Lee County	LEEX	1,442.44
42	Meadowbrook Park	Lee County East County Water Control District	Lee County	LEEX	34.18
43	Mound Key Archaeological State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks	Trustees of the Internal Improvement Trust Fund	LEEX	119.95
44	Mullock Creek Preserve	Lee County	Lee County	LEEX	4.30
45	Nancy Payton Preserve	Collier County	Collier County	COLL	72.00
46	Oak Creek Preserve	City of Bonita Springs	Lee County	LEEX	3.73
47	Okaloacoochee Slough State Forest	FL Dept. of Agriculture and Consumer Services, Florida Forest Service	South Florida Water Management District	COLL, HEND	32,346.82
48	Okaloacoochee Slough Wildlife Management Area	FL Fish and Wildlife Conservation Commission	Trustees of the Internal Improvement Trust Fund	HEND	2,992.60
49	Panther Passage Conservation Bank Conservation Easement	FL Fish and Wildlife Conservation Commission	Floraland Dairy, Inc.	HEND	915.09
50	Panther Walk Preserve	Collier County	Collier County	COLL	9.54
51	Pepper Ranch Preserve	Collier County	Collier County	COLL	2,460.28
52	Picayune Strand State Forest	FL Dept. of Agriculture and Consumer Services, Florida Forest Service	Trustees of the Internal Improvement Trust Fund	COLL	42,402.74
53	Pine Lake Preserve	Lee County	Lee County	LEEX	174.52

MAP ID	NAME	MANAGING AGENCY	OWNER	COUNTY	TOTAL ACRES
54	Railhead Scrub Preserve	Collier County	Collier County	COLL	136.41
55	Red Maple Swamp Preserve	Collier County	Collier County	COLL	202.90
56	Redroot Preserve	Collier County	Collier County	COLL	8.97
57	River of Grass	South Florida Water Management District	South Florida Water Management District	GLAD, HEND, PALM	1,108.06
58	Rivers Road Preserve	Collier County	Collier County	COLL	75.66
59	Riverside Circle Wetland Area	City of Naples	City of Naples	COLL	5.25
60	Sam Galloway Tract at Imperial Marsh Preserve	Lee County	Lee County	LEEX	400.03
61	Savannah Lakes	Lee County East County Water Control District	Lee County	LEEX	389.98
62	Six Mile Cypress Slough Preserve	Lee County	Lee County	LEEX	712.68
63	Spirit of the Wild Wildlife Management Area	FL Fish and Wildlife Conservation Commission	Trustees of the Internal Improvement Trust Fund	HEND	7,647.99
64	The Naples Preserve	City of Naples	City of Naples	COLL	9.73
65	Vanderbilt Beach County Park	Collier County	Collier County	COLL	4.97
66	Wet Woods Preserve	Collier County	Collier County	COLL	25.58
67	Wetlands Reserve Program Easement #101	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	4,929.52
68	Wetlands Reserve Program Easement #120	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	COLL, HEND	1,263.85
69	Wetlands Reserve Program Easement #133	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	COLL	151.68
70	Wetlands Reserve Program Easement #150	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	400.18
71	Wetlands Reserve Program Easement #151	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	743.99
72	Wetlands Reserve Program Easement #169	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	COLL	217.05
73	Wetlands Reserve Program Easement #171	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	646.65
74	Wetlands Reserve Program Easement #188	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	1,508.23
75	Wetlands Reserve Program Easement #192	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	248.00
76	Wetlands Reserve Program Easement #193	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	11,592.16
77	Wetlands Reserve Program Easement #198	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	983.05
78	Wetlands Reserve Program Easement #199	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	COLL	42.31
79	Wild Turkey Strand Preserve	Lee County	Lee County	LEEX	3,136.78
80	Winchester Head	Collier County	Collier County	COLL	77.25
	Collier County FLU	-	-	-	265,077.06
-	Lee County FLU	-	-	-	29,027.06
-	Hendry County FLU	-	-	-	133,033.98
-	Flowway Stewardship Area	-	-	-	38,660.10
-	Habitat Stewardship Area	-	-	-	45,781.84
-	SFWMD Conservation Easements	-	-	-	24,004.31
-	Florida Rock FDEP Conservation Easement	-	-	-	800.17
-	Conservation Collier	-	-	-	3,493.35

Note: Collier FLU was acquired from the Collier County GIS website http://gis.colliergov.net/website/downloadnet/download.aspx August 2016. Lee FLU was acquired from the Lee County Government website http://leegis.leegov.com/gisdata.htm August 2016. FSA and HSA areas were acquired per email from the Collier County Government website http://www.colliergov.net/index_aspx?page=2713 August 2016. Florida managed areas were acquired from the Florida Natural Areas Inventory website http://www.fnai.org/gisdata.cfm August 2016. SFWMD conservation easements were acquired from the SFWMD website http://my.sfwmd.gov/gisapps/sfwmdxwebdc/ August 2016. Glades and Hendry FLU was aquired from the SWFRPC website http:www.swfrpc.org/maps.htm#future%20land%use . Conservation Collier land acquisition was acquired from the Collier County facilities department August 2016. Florida Rock conservation easement data acquired from Hole Montes, Inc. Charlotte FLU was acquired from the Charlotte County GIS website http://www.ccgis.com/gis/ftp_download_page.html August 2016.

Exhibit 28B. SFWMD Conservation Easements within Wood Stork Action Area

APPLICATION NUMBER	EASEMENT ID	ACRES
020806-14	020806-14-CE2	0.58
950703-5	950703-5-CE17	0.30
940615-13	940615-13-CE3	1.37
09111-B	09111-B-CE10	5.50
950210-5	950210-5-CE4	158.23
130816-20	130816-20-CE4	0.51
130816-20	130816-20-CE6	1.91
081022-16	081022-16-CE3	17.97
991026-16	991026-16-CE4	1.79
011218-4	011218-4-CE1	45.49
981029-8	981029-8-CE3	0.51
020917-17	020917-17-CE1	50.63
990707-12	990707-12-CE2	28.60
000301-23	000301-23-CE2	51.46
121212-13	121212-13-CE1	17.56
120926-1	120926-1-CE5	0.02
090427-12	090427-12-CE1	0.13
121127-3	121127-3-CE1	10.77
010917-5	010917-5-CE3	1.45
051031-17	051031-17-CE1	10.36
02038-L	02038-L-CE1	17.90
020614-7	020614-7-CE2	12.63
020327-6	020327-6-CE1	4.63
020314-8	020314-8-CE2	1.89
960227-8	960227-8-CE33	7.45
970519-17	970519-17-CE1	9.71
990407-8	990407-8-CE9	1.95
140725-8	140725-8-CE3	34.05
140725-8	140725-8-CE5	104.91
041018-13	041018-13-CE3	1.44
990805-11	990805-11-CE2	0.71
970509-9	970509-9-CE3	26.70
960802-8	960802-8-CE4	0.20
980218-9	980218-9-CE1	10.44
070831-20	070831-20-CE3	0.13
070705-12	070705-12-CE1	0.13
960516-6	960516-6-CE7	1.21
010427-5	010427-5-CE4	15.14
000124-5	000124-5-CE1	71.67
09111-B	09111-B-CE3	0.28
991001-11	991001-11-CE4	0.56
100521-23	100521-23-CE2	15.52
940307-5	940307-5-CE1	22.53
990413-9	990413-9-CE4	12.41
111118-9	111118-9-CE2	36.36
020410-6	020410-6-CE2	53.70
011121-7	011121-7-CE1	7.71
960816-3	960816-3-CE9	0.16
130205-6	130205-6-CE3	11.40

APPLICATION NUMBER	EASEMENT ID	ACRES
030418-19	030418-19-CE1	2.86
971208-11	971208-11-CE3	100.92
991008-7	991008-7-CE2	0.35
020614-7	020614-7-CE1	13.16
121009-11		56.81
121009-11		56.81
020806-14	020806-14-CE3	2.53
990805-11	990805-11-CE20	0.12
09111-B	09111-B-CE2	16.27
960227-8	960227-8-CE8	2.22
960516-6	960516-6-CE3	20.12
950703-5	950703-5-CE2	39.67
070110-1	070110-1-CE1	3.20
040130-20	040130-20-CE2	0.36
101105-7	101105-7-CE1	29.22
960312-2	960312-2-CE1	30.62
950703-5	950703-5-CE23	0.05
09111-B	09111-B-CE5	0.50
030326-4	030326-4-CE3	2.65
031001-18	031001-18-CE8	5.12
971208-11	971208-11-CE10	8.94
900731-2	900731-2-CE2	24.21
000329-16	000329-16-CE12	10.50
120113-5	120113-5-CE2	4.54
110112-5	110112-5-CE1	1.32
021108-4	021108-4-CE2	6.33
030617-5	030617-5-CE2	0.97
000329-16	000329-16-CE5	2.06
950703-5	950703-5-CE21	0.08
06173-A	06173-A-CE3	1.00
950607-4	950607-4-CE8	14.97
960816-3	960816-3-CE8	1.73
960816-3	960816-3-CE15	1.21
961121-3	961121-3-CE1	51.44
980911-12	980911-12-CE1	25.95
030326-4	030326-4-CE1	6.70
000222-31	000222-31-CE1	7.03
910212-3	910212-3-CE1	5.84
120113-5	120113-5-CE1	17.31
971208-11	971208-11-CE11	7.37
080611-11	080611-11-CE4	10.33
991026-16	991026-16-CE2	6.00
030731-16	030731-16-CE1	3.44
921208-2	921208-2-CE7	30.35
090204-11	090204-11-CE2	1.60
960816-3	960816-3-CE2	2.41
060606-2	060606-2-CE1	11.83
950817-2	950817-2-CE1	18.25
050119-15	050119-15-CE1	2.27
001004-11	001004-11-CE4	0.84
900118-7	900118-7-CE4	2.79

APPLICATION NUMBER	EASEMENT ID	ACRES
971212-16	971212-16-CE1	0.24
900221-19	900221-19-CE4	0.22
961212-1	961212-1-CE4	0.36
010110-5	010110-5-CE1	6.11
980825-16	980825-16-CE4	0.50
981029-8	981029-8-CE7	22.48
951222-3	951222-3-CE3	0.24
06036-C	06036-C-CE4	7.25
011218-4	011218-4-CE2	53.49
031001-18	031001-18-CE3	55.82
010917-5	010917-5-CE5	1.91
900731-2	900731-2-CE3	17.48
980513-8	980513-8-CE1	10.15
960516-6	960516-6-CE6	2.19
971121-9	971121-9-CE1	5.10
960227-8	960227-8-CE21	61.34
940908-4	940908-4-CE2	5.87
960716-9	960716-9-CE1	13.03
991102-20	991102-20-CE1	0.09
020614-7	020614-7-CE3	0.46
960227-8	960227-8-CE6	2.51
960227-8	960227-8-CE1	0.17
940615-13	940615-13-CE5	4.68
021029-21	021029-21-CE1	5.36
001011-1	001011-1-CE2	7.53
921208-2	921208-2-CE2	59.05
040820-19	040820-19-CE11	85.28
050208-14	050208-14-CE6	0.25
050208-14	050208-14-CE3	2.51
960828-4	960828-4-CE6	1.04
960828-4	960828-4-CE3	3.40
110112-5	110112-5-CE2	2.86
960227-8	960227-8-CE42	1.83
940922-17	940922-17-CE7	0.22
950703-5	950703-5-CE6	2.22
031001-18	031001-18-CE9	4.51
951122-7	951122-7-CE3	65.77
101112-8	101112-8-CE3	3.40
040503-24	040503-24-CE1	1.06
000614-12	000614-12-CE1	11.35
970509-9	970509-9-CE1	1.05
990126-4	990126-4-CE6	10.31
981029-8	981029-8-CE5	0.84
981029-8	981029-8-CE6	1.61
06036-C	06036-C-CE6	2.39
060606-2	060606-2-CE2	3.85
000922-12	000922-12-CE1	13.96
031001-18	031001-18-CE11	3.56
990512-22	990512-22-CE1	65.29
000627-5	000627-5-CE1	1.86
981224-7	981224-7-CE1	3.59

APPLICATION NUMBER	EASEMENT ID	ACRES
950202-10	950202-10-CE1	0.54
980825-16	980825-16-CE10	1.06
960716-9	960716-9-CE5	2.05
040804-18	040804-18-CE4	2.21
960227-8	960227-8-CE50	8.88
040804-18	040804-18-CE3	0.81
010605-17	010605-17-CE1	33.63
961121-3	961121-3-CE2	16.45
130205-6	130205-6-CE2	198.49
021108-4	021108-4-CE3	3.97
040823-13	040823-13-CE6	7.79
111228-11	111228-11-CE2	4.70
950202-10	950202-10-CE7	6.65
990730-17	990730-17-CE1	4.94
971208-11	971208-11-CE5	3.06
960227-8	960227-8-CE47	1.69
960816-3	960816-3-CE5	28.08
020411-6	020411-6-CE1	5.63
940714-1	940714-1-CE3	4.65
971212-16	971212-16-CE4	1.80
980727-6	980727-6-CE3	3.26
970218-10	970218-10-CE1	13.46
040804-18	040804-18-CE5	0.11
020412-1	020412-1-CE4	2.44
020412-1	020412-1-CE5	1.22
040820-19	040820-19-CE10	1.39
000222-31	000222-31-CE4	33.08
050124-10	050124-10-CE7	0.74
050124-10	050124-10-CE8	1.08
050124-10	050124-10-CE10	0.72
101217-5	101217-5-CE7	3.75
06036-C	06036-C-CE2	7.61
980825-16	980825-16-CE2	6.60
070705-12	070705-12-CE3	0.11
070705-12	070705-12-CE4	0.35
990126-4	990126-4-CE5	3.44
950703-5	950703-5-CE18	0.27
920709-3	920709-3-CE1	38.68
030103-8	030103-8-CE2	0.97
010605-17	010605-17-CE5	13.26
990805-11	990805-11-CE15	0.85
900118-7	900118-7-CE1	5.62
970418-4	970418-4-CE1	3.87
960227-8	960227-8-CE41	4.78
000329-16	000329-16-CE10	3.95
020703-14	020703-14-CE1	1.36
030731-16	030731-16-CE2	7.45
040326-28	040326-28-CE9	2.36
960716-9	960716-9-CE3	9.53
990805-11	990805-11-CE4	5.59
070831-20	070831-20-CE1	0.18

APPLICATION NUMBER	EASEMENT ID	ACRES
110908-7	110908-7-CE2	17.21
020523-16	020523-16-CE3	658.15
040130-17	040130-17-CE1	5.66
990805-11	990805-11-CE1	81.50
991214-14	991214-14-CE1	20.46
930202-4	930202-4-CE2	3.00
010917-5	010917-5-CE9	1.37
981021-10	981021-10-CE4	163.88
040823-13	040823-13-CE5	19.43
100907-58	100907-58-CE1	1.25
991004-7	991004-7-CE8	4.04
980824-9	980824-9-CE3	7.64
960718-16	960718-16-CE5	4.70
040820-19	040820-19-CE7	28.08
970509-9	970509-9-CE2	24.04
050825-12	050825-12-CE2	3.81
980716-12	980716-12-CE2	1.97
960227-8	960227-8-CE17	76.86
960816-3	960816-3-CE6	1.35
960227-8	960227-8-CE14	60.25
960816-3	960816-3-CE3	24.55
991001-11	991001-11-CE5	6.75
060223-4	060223-4-CE1	0.23
990111-11	990111-11-CE1	47.04
100521-23	100521-23-CE3	1.43
101130-5	101130-5-CE1	10.08
960718-16	960718-16-CE2	5.04
030702-1	030702-1-CE1	3.00
940321-2	940321-2-CE2	0.30
990707-12	990707-12-CE4	0.12
960718-16	960718-16-CE1	76.79
031001-18	031001-18-CE7	5.86
940922-17	940922-17-CE5	2.65
991004-7	991004-7-CE2	24.52
060721-3	060721-3-CE2	0.21
990407-8	990407-8-CE3	0.49
950703-5	950703-5-CE16	0.31
960227-8	960227-8-CE22	1.10
110112-5	110112-5-CE3	0.61
060512-18	060512-18-CE1	15.76
960227-8	960227-8-CE2	2.24
940526-2	940526-2-CE3	0.97
980903-19	980903-19-CE1	2.34
020701-10	020701-10-CE3	10.18
050706-20	050706-20-CE1	13.06
020614-7	020614-7-CE4	10.87
110112-5	110112-5-CE4	1.22
020412-1	020412-1-CE3	23.99
040326-28	040326-28-CE4	1.32
070831-20	070831-20-CE5	0.18
031001-18	031001-18-CE10	3.96

APPLICATION NUMBER	EASEMENT ID	ACRES
030121-15	030121-15-CE1	1.53
120511-11	120511-11-CE1	1.94
980825-16	980825-16-CE11	1.48
080611-11	080611-11-CE5	0.24
09111-B	09111-B-CE9	2.23
111228-11	111228-11-CE1	157.38
961212-1	961212-1-CE5	0.61
040823-13	040823-13-CE4	3.38
981029-8	981029-8-CE15	0.08
950817-2	950817-2-CE3	4.63
950703-5	950703-5-CE11	0.99
981029-8	981029-8-CE1	6.33
000719-2	000719-2-CE1	1.25
001004-11	001004-11-CE3	2.51
980825-16	980825-16-CE12	9.19
950703-5	950703-5-CE22	0.07
020412-1	020412-1-CE6	6.19
020701-10	020701-10-CE1	3.45
991108-9	991108-9-CE2	4.98
110908-7	110908-7-CE1	1.54
981021-10	981021-10-CE2	209.65
021108-4	021108-4-CE5	1.05
971208-11	971208-11-CE2	0.66
951114-5	951114-5-CE1	10.41
010917-5	010917-5-CE8	3.94
951012-2	951012-2-CE1	4.18
980727-6	980727-6-CE1	90.41
040803-19	040803-19-CE6	25.02
960718-16	960718-16-CE3	5.03
050124-10	050124-10-CE1	23.93
991001-11	991001-11-CE7	1.04
040804-18	040804-18-CE1	43.77
931022-2	931022-2-CE1	6.53
931022-2	931022-2-CE3	2.44
991026-16	991026-16-CE3	0.08
120425-11	120425-11-CE1	9.91
000531-20	000531-20-CE1	1.62
940615-13	940615-13-CE4	27.09
940526-2	940526-2-CE4	0.61
000329-16	000329-16-CE11	5.45
050124-10	050124-10-CE6	9.47
101217-5	101217-5-CE3	121.76
001011-1	001011-1-CE4	4.84
990308-7	990308-7-CE2	1274.97
080611-11	080611-11-CE1	32.44
040618-27	040618-27-CE1	8.37
09111-B	09111-B-CE7	40.20
021108-4	021108-4-CE1	21.63
971208-11	971208-11-CE4	10.86
951211-6	951211-6-CE2	17.46
050208-14	050208-14-CE4	39.12

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070830-18	070830-18-CE1	619.69
990805-11	990805-11-CE3	107.41
001026-3	001026-3-CE1	14.12
001011-1	001011-1-CE3	6.04
010427-5	010427-5-CE2	6.66
010418-7	010418-7-CE1	0.75
010917-5	010917-5-CE1	30.09
040804-18	040804-18-CE2	3.26
101029-5	101029-5-CE1	4.78
930209-6	930209-6-CE3	1.86
010416-9	010416-9-CE3	0.40
120808-24	120808-24-CE1	4.17
130816-20	130816-20-CE1	4.00
120615-22	120615-22-CE1	0.20
131226-1	131226-1-CE1	4.33
131226-1	131226-1-CE2	7.71
990805-11	990805-11-CE17	0.04
100423-17	100423-17-CE2	325.89
000124-5	000124-5-CE2	2.48
040820-19	040820-19-CE12	49.58
960919-1	960919-1-CE1	5.27
971208-11	971208-11-CE9	24.08
960802-8	960802-8-CE3	1.73
101105-7	101105-7-CE2	311.64
100521-23	100521-23-CE1	2.36
120113-5	120113-5-CE6	0.38
120113-5	120113-5-CE10	0.77
120113-5	120113-5-CE13	0.03
010831-5	010831-5-CE1	2.02
960516-6	960516-6-CE2	3.29
981021-10	981021-10-CE5	757.29
121009-11		158.38
990805-11	990805-11-CE18	0.04
000324-12	000324-12-CE2	88.63
950703-5	950703-5-CE19	0.26
961212-1	961212-1-CE2	4.69
940615-13	940615-13-CE1	10.79
990803-12	990803-12-CE1	3.74
980825-16	980825-16-CE13	1.17
130927-9	130927-9-CE1	0.12
140919-18	140919-18-CE2	2.60
140725-8	140725-8-CE6	5.06
140520-10	140520-10-CE1	4.40
150706-14	150706-14-CE1	1.21
150330-15	150330-15-CE1	0.46
961121-7	961121-7-CE2	0.05
991004-7	991004-7-CE7	12.32
970612-6	970612-6-CE1	1.38
950703-5	950703-5-CE8	1.74
06036-C	06036-C-CE5	3.58
06173-A	06173-A-CE1	4.65

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040130-20	040130-20-CE1	1.43
010917-5	010917-5-CE7	2.56
971212-16	971212-16-CE2	1.94
921208-2	921208-2-CE3	24.79
001004-12	001004-12-CE1	0.31
960516-6	960516-6-CE1	5.81
000324-12	000324-12-CE3	7.57
010110-5	010110-5-CE2	4.54
981029-8	981029-8-CE2	1.22
070705-12	070705-12-CE2	0.22
940307-5	940307-5-CE2	17.25
000301-23	000301-23-CE3	9.51
041005-12	041005-12-CE1	161.94
930209-6	930209-6-CE4	2.91
001011-1	001011-1-CE1	69.31
110606-6	110606-6-CE1	2.31
100521-23	100521-23-CE4	2.42
030429-18	030429-18-CE1	0.90
990715-10	990715-10-CE2	19.67
000922-12	000922-12-CE2	4.56
080506-13	080506-13-CE1	4.76
960816-3	960816-3-CE16	6.02
981029-8	981029-8-CE11	6.37
900731-2	900731-2-CE4	62.98
030430-14	030430-14-CE1	13.19
031010-7	031010-7-CE1	0.59
130205-6	130205-6-CE4	3.78
940615-13	940615-13-CE8	12.72
040820-19	040820-19-CE1	8.06
960227-8	960227-8-CE43	13.65
991001-11	991001-11-CE2	2.69
080604-8	080604-8-CE1	1.28
961212-1	961212-1-CE1	1.32
970701-2	970701-2-CE1	1.36
991026-16	991026-16-CE5	0.77
060614-19	060614-19-CE1	126.36
000912-11	000912-11-CE1	5.80
940728-2	940728-2-CE2	0.03
100521-23	100521-23-CE5	0.42
940307-5	940307-5-CE7	0.88
031001-18	031001-18-CE2	86.54
030903-6	030903-6-CE1	0.95
900731-2	900731-2-CE1	26.87
981021-10	981021-10-CE3	253.20
990503-2	990503-2-CE1	1.12
970307-7	970307-7-CE2	107.45
040803-19	040803-19-CE9	1.09
940307-5	940307-5-CE3	47.69
940307-5	940307-5-CE4	26.87
040326-28	040326-28-CE8	2.36
940922-17	940922-17-CE6	1.11

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990126-4	990126-4-CE4	0.72
030505-23	030505-23-CE2	21.26
080611-11	080611-11-CE2	1.93
020717-2	020717-2-CE1	0.79
050124-10	050124-10-CE2	11.86
940203-11	940203-11-CE1	8.56
050124-10	050124-10-CE9	0.62
101217-5	101217-5-CE4	4.90
990126-4	990126-4-CE1	4.40
970428-2	970428-2-CE1	0.14
051216-27	051216-27-CE1	1.92
010330-16	010330-16-CE1	1.02
010625-1	010625-1-CE1	21.73
990805-11	990805-11-CE6	1.13
970509-9	970509-9-CE4	5.11
000922-12	000922-12-CE5	1.36
980821-2	980821-2-CE5	32.75033044
991001-11	991001-11-CE3	1.779762751
020107-2	020107-2-CE1	0.850986021
930209-6	930209-6-CE1	0.551826823
950607-4	950607-4-CE11	0.545611063
080915-9	080915-9-CE1	4.180864515
030725-18	030725-18-CE1	16.33380953
991001-11	991001-11-CE6	1.565873725
101112-8	101112-8-CE2	0.730049762
121009-11		101.6016564
121009-11		23.16657009
960828-4	960828-4-CE4	1.252215087
980402-5	980402-5-CE1	7.530481282
000628-2	000628-2-CE1	22.50027453
951211-6	951211-6-CE4	26.87303053
120425-8	120425-8-CE6	12.16525369
991105-27	991105-27-CE3	13.1949132
080602-11	080602-11-CE3	0.011742213
080602-11	080602-11-CE4	0.001076763
080602-11	080602-11-CE5	0.004929515
080602-11	080602-11-CE6	0.001303433
080602-11	080602-11-CE7	0.042208889
080602-11	080602-11-CE8	0.044073121
010416-9	010416-9-CE1	11.70350525
990407-8	990407-8-CE7	38.16314699
100426-16	100426-16-CE1	19.52482446
960726-4	960726-4-CE3	10.43765323
121009-11		160.9685511
980825-16	980825-16-CE5	0.13212085
031010-6	031010-6-CE2	28.42483119
991008-7	991008-7-CE1	0.267291861
031209-16	031209-16-CE1	0.598432539
020819-16	020819-16-CE3	25.59750165
921118-3	921118-3-CE2	10.38793551
031001-18	031001-18-CE1	163.5182996

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991108-9	991108-9-CE1	2.826056616
000922-12	000922-12-CE3	20.95438057
110509-20	110509-20-CE2	2.075144578
120808-24	120808-24-CE3	3.753022
081022-16	081022-16-CE2	37.12471245
940714-1	940714-1-CE1	45.05143032
951122-7	951122-7-CE2	43.13816252
070405-4	070405-4-CE1	28.88834875
020819-16	020819-16-CE1	17.05919142
971007-1	971007-1-CE1	5.307961211
09111-B	09111-B-CE6	41.24403152
040820-19	040820-19-CE4	9.200822624
070507-23	070507-23-CE2	20.68477733
991027-15	991027-15-CE3	5.40642923
100521-23	100521-23-CE9	2.0842265
010306-4	010306-4-CE1	3.208258974
000414-14	000414-14-CE2	4.554401777
120113-5	120113-5-CE5	0.72756568
120113-5	120113-5-CE8	0.156123592
120113-5	120113-5-CE9	1.00875147
120113-5	120113-5-CE12	0.074914139
050825-12	050825-12-CE3	5.223236107
09111-B	09111-B-CE4	15.98357309
940615-13	940615-13-CE7	25.14280396
900118-7	900118-7-CE5	24.29085993
980617-2	980617-2-CE1	8.362498219
990412-8	990412-8-CE1	1.429426709
020107-2	020107-2-CE5	10.23687255
930202-4	930202-4-CE1	0.07676102
040820-19	040820-19-CE9	2.061457457
931022-2	931022-2-CE2	105.8371487
060721-3	060721-3-CE1	1.093332462
991027-15	991027-15-CE2	6.538425574
960816-3	960816-3-CE10	0.363710341
951211-6	951211-6-CE1	62.99948414
120926-1	120926-1-CE4	0.000283509
140919-18	140919-18-CE1	1.099969362
950321-3	050321-3-CE1	44.52289292
020409-7	020409-7-CE1	0.938953541
950703-5	950703-5-CE15	0.392887448
961121-7	961121-7-CE1	14.34204693
08257-1	08257-1-CE3	0.705890123
09111-B	09111-B-CE1	46.06267776
980821-2	980821-2-CE8	21.64789064
080611-11	080611-11-CE6	1.01969455
09111-B	09111-B-CE11	13.77787479
110908-7	110908-7-CE4	17.23713709
970325-1	970325-1-CE2	0.551794841
960816-3	960816-3-CE12	0.261021125
010917-5	010917-5-CE4	4.637710499
040618-27	040618-27-CE2	12.19369177

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090421-10	090421-10-CE1	0.508060039
060908-1	060908-1-CE1	6.062442558
020410-6	020410-6-CE5	7.531152202
040823-13	040823-13-CE7	38.78942648
960802-8	960802-8-CE1	3.932033044
990805-11	990805-11-CE10	20.23720373
960227-8	960227-8-CE25	5.968382347
950607-4	950607-4-CE12	0.176548284
950703-5	950703-5-CE1	98.10081098
020806-14	020806-14-CE1	4.565096472
950607-4	950607-4-CE10	1.288764175
991001-11	991001-11-CE8	0.638184902
010605-17	010605-17-CE6	15.86827902
980825-16	980825-16-CE14	7.516069644
040820-19	040820-19-CE3	1.122449661
020701-10	020701-10-CE2	67.32434677
971208-11	971208-11-CE12	0.269538446
000713-3	000713-3-CE1	19.67277704
030708-17	030708-17-CE1	1015.096296
070705-12	070705-12-CE5	0.420797358
070416-15	070416-15-CE1	0.574316045
960304-3	960304-3-CE1	0.441585426
020107-2	020107-2-CE4	16.78836361
960227-8	960227-8-CE18	4.944255236
020107-2	020107-2-CE3	12.56718493
050706-20	050706-20-CE2	0.695010944
031001-18	031001-18-CE13	1.485734717
020410-6	020410-6-CE1	1.921715376
950703-5	950703-5-CE3	4.841528588
971211-13	971211-13-CE1	269.1978844
900326-6	900326-6-CE1	1.800221586
960227-8	960227-8-CE46	0.777688838
080523-11	080523-11-CE1	0.056967017
001027-4	001027-4-CE11	334.8020785
010607-9	010607-9-CE1	10.03621507
940527-5	940527-5-CE1	8.753319324
960227-8	960227-8-CE3	0.178224174
981029-8	981029-8-CE13	0.08345701
990707-12	990707-12-CE3	15.29834778
990805-11	990805-11-CE5	5.902442245
970219-9	970219-9-CE1	2.270661348
990805-11	990805-11-CE7	32.48951786
940922-17	940922-17-CE2	0.152271761
980825-16	980825-16-CE8	0.603644619
000309-8	000309-8-CE2	6.651224211
950607-4	950607-4-CE2	7.016761483
111219-3	111219-3-CE1	7.719750256
980716-12	980716-12-CE1	0.196531725
940908-4	940908-4-CE1	2.058901754
950703-5	950703-5-CE12	0.621172767
040326-28	040326-28-CE2	2.849737396

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111118-9	111118-9-CE1	36.35880003
950202-10	950202-10-CE3	2.459581336
990126-4	990126-4-CE2	80.04825088
010605-17	010605-17-CE4	2.211806972
031015-25	031015-25-CE1	3.900865314
040823-13	040823-13-CE1	50.35080297
070507-23	070507-23-CE3	7.854584751
960227-8	960227-8-CE23	3.927166315
960716-9	960716-9-CE4	3.305421997
020314-8	020314-8-CE1	14.35031637
060816-7	060816-7-CE1	12.32987083
941109-4	941109-4-CE4	3.743959794
960304-4	960304-4-CE1	0.705909095
940922-17	940922-17-CE4	7.523497471
991108-9	991108-9-CE3	4.994861085
100521-23	100521-23-CE8	12.70822907
981009-22	981009-22-CE2	23.88199849
050208-14	050208-14-CE1	8.289138778
080303-14	080303-14-CE1	0.555660649
950703-5	950703-5-CE9	1.667933754
000309-8	000309-8-CE1	31.12926369
040820-19	040820-19-CE8	26.15970175
991027-15	991027-15-CE1	9.568891742
960816-3	960816-3-CE4	0.523197587
060912-3	060912-3-CE3	6.282377091
020523-16	020523-16-CE4	54.3842091
990413-9	990413-9-CE3	15.11022356
080317-16	080317-16-CE2	10.48946407
960516-6	960516-6-CE4	7.357889337
991108-9	991108-9-CE4	5.231125972
950202-10	950202-10-CE2	0.80938444
030328-10	030328-10-CE1	5.363456366
060912-3	060912-3-CE2	12.17709036
031001-18	031001-18-CE6	7.489065741
991101-14	991101-14-CE2	29.36269061
960802-8	960802-8-CE2	7.445742978
960227-8	960227-8-CE16	1.667613927
990805-11	990805-11-CE13	1.118858675
960304-4	960304-4-CE3	14.44273689
990805-11	990805-11-CE12	0.259317823
960816-3	960816-3-CE1	0.134388972
940615-13	940615-13-CE12	139.1032164
061222-4	061222-4-CE2	7.311602063
921208-2	921208-2-CE1	18.15590802
030326-4	030326-4-CE2	8.745557833
990413-9	990413-9-CE1	31.55696687
031205-16	031205-16-CE1	2.804276745
06036-C	06036-C-CE1	13.3079515
021108-4	021108-4-CE4	66.3023716
040326-28	040326-28-CE1	2.079046025
960412-5	960412-5-CE1	11.57754778

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020423-7	020423-7-CE1	10.87175757
080827-6	080827-6-CE1	1.977664011
900118-7	900118-7-CE3	4.386375646
990518-9	990518-9-CE1	166.2859433
150107-11	150107-11-CE1	99.88572606
940526-2	940526-2-CE2	0.19827441
980824-9	980824-9-CE2	0.169559483
030103-8	030103-8-CE1	2.255699581
120425-8	120425-8-CE4	3.777451662
031001-18	031001-18-CE4	46.43941651
980825-16	980825-16-CE1	13.42675796
001011-1	001011-1-CE5	2.917814983
940307-5	940307-5-CE5	5.913795205
08257-1	08257-1-CE2	13.22450086
970325-1	970325-1-CE5	0.133727558
980513-8	980513-8-CE5	9.691098873
040820-19	040820-19-CE13	3.57104801
050208-14	050208-14-CE5	2.263803963
050418-28	050418-28-CE2	2.920692323
040326-28	040326-28-CE7	2.41251069
020819-16	020819-16-CE4	133.9135154
001004-11	001004-11-CE1	46.36507648
890503-21	890503-21-CE1	0.092871418
000821-7	000821-7-CE1	4.159809791
010802-6	010802-6-CE1	7.200967031
040823-13	040823-13-CE2	1.611292906
050705-24	050705-24-CE1	7.313996508
040820-19	040820-19-CE2	2.272434191
940922-17	940922-17-CE8	0.163536336
960509-2	960509-2-CE1	1.305784447
940728-2	940728-2-CE1	7.193547029
950703-5	950703-5-CE4	3.36033491
000414-14	000414-14-CE1	1.726911148
040326-28	040326-28-CE5	1.430532671
990126-4	990126-4-CE3	13.81812401
061222-4	061222-4-CE3	13.08462238
070330-12	070330-12-CE1	10.21898363
040730-16	040730-16-CE1	9.216926305
940901-11	940901-11-CE1	33.85397354
061222-4	061222-4-CE1	4.882539934
970325-1	970325-1-CE3	0.51987576
040326-28	040326-28-CE6	15.51223006
971007-1	971007-1-CE2	6.068289832
980825-16	980825-16-CE6	1.052306931
130205-6	130205-6-CE1	896.9935313
941212-3	941212-3-CE1	4.356434653
100423-17	100423-17-CE1	151.6869541
101217-5	101217-5-CE2	160.0041579
890503-21	890503-21-CE2	28.4458448
940615-13	940615-13-CE6	81.55615062
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970501-8	970501-8-CE1	0.634520607
050119-15	050119-15-CE2	2.258875256
940615-13	940615-13-CE2	21.36919252
921208-2	921208-2-CE5	6.355886021
010917-5	010917-5-CE2	6.48927732
960718-16	960718-16-CE6	27.48264763
981029-8	981029-8-CE10	2.923817093
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080317-16	080317-16-CE1	95.98477721
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990805-11	990805-11-CE14	0.042189278
020410-6	020410-6-CE3	1.320374975
020410-6	020410-6-CE6	1.316190545
010917-5	010917-5-CE6	0.35256519
960828-4	960828-4-CE5	3.96859249
970418-5	970418-5-CE1	0.855622586
031001-18	031001-18-CE12	3.054968976
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930209-6	930209-6-CE5	2.832516525
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040326-28	040326-28-CE3	12.71200085
980903-19	980903-19-CE2	0.120825155
981029-8	981029-8-CE9	0.029042947
980821-2	980821-2-CE1	251.0460382
010405-2	010405-2-CE1	8.499014998
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970307-7	970307-7-CE1	50.1553901
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960227-8	960227-8-CE54	0.865260491
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960119-4	960119-4-CE2	4.710913099
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921118-3	921118-3-CE1	5.090470897
971210-21	971210-21-CE1	9.296796429
990805-11	990805-11-CE9	0.02534707
000324-12	000324-12-CE1	0.079513545
931112-11	931112-11-CE1	2.396390591
940922-17	940922-17-CE3	1.075431837
940615-13	940615-13-CE10	24.1426053
950202-10	950202-10-CE5	0.514714095
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APPLICATION NUMBER	EASEMENT ID	ACRES
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100809-1	100809-1-CE2	5.072051413
990414-11	990414-11-CE1	2.048209455
961202-3	961202-3-CE1	2.795191028
09111-B	09111-B-CE12	11.40632337
090626-14	090626-14-CE1	2.910195009
000331-9	000331-9-CE3	1.795763145
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040823-13	040823-13-CE3	2.09143797
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020329-4	020329-4-CE1	1.541584457
950210-5	950210-5-CE5	15.18791443
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971208-11	971208-11-CE1	5.013823364
030326-8	030326-8-CE2	1.741085656
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040803-19	040803-19-CE3	26.02024244
080602-11	080602-11-CE2	0.111609763
001011-1	001011-1-CE19	14.75361889
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040820-19	040820-19-CE15	4.452381383
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060721-3	060721-3-CE3	5.201438427
100604-10	100604-10-CE2	48.51433044
130816-20	130816-20-CE2	1.718919288
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040820-19	040820-19-CE14	2.058918807
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940615-13	940615-13-CE9	13.16033551
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950703-5	950703-5-CE10	1.556900389
120425-8	120425-8-CE2	198.4901013
950607-4	950607-4-CE3	0.531048347
040820-19	040820-19-CE22	2.783080603
980821-2	980821-2-CE2	7.7737891
081022-16	081022-16-CE1	22.96145625
110617-17	110617-17-CE1	44.83828374
930202-4	930202-4-CE4	1.735238984
930714-1-D	930714-1-D-CE1	1.432645147
891219-12	891219-12-CE1	2.280358694
050225-38	050225-38-CE1	6.194363879
950210-5	950210-5-CE3	0.827271516
000301-23	000301-23-CE1	44.64588573
070831-20	070831-20-CE4	0.111807678
961121-7	961121-7-CE3	0.037671802
020523-16	020523-16-CE2	110.1847532
980825-16	980825-16-CE7	0.045275468
050208-14	050208-14-CE2	1.853652494
120113-5	120113-5-CE11	0.031642387
120926-1	120926-1-CE1	0.038574889
120926-1	120926-1-CE2	0.030210661
120926-1	120926-1-CE3	0.000500039
130927-9	130927-9-CE2	0.021680159
120511-11	120511-11-CE1	1.800036852
981009-22	981009-22-CE1	110.9559317
000811-3	000811-3-CE2	0.200949083
030707-9	030707-9-CE1	2.444330251
09111-B	09111-B-CE8	62.00951669
960710-1	960710-1-CE1	56.31132022
980821-2	980821-2-CE7	16.60539083
980629-8	980629-8-CE1	1.561230898
950703-5	950703-5-CE5	3.249063419
981029-8	981029-8-CE12	7.122214184
950202-10	950202-10-CE4	3.124328905
040820-19	040820-19-CE5	91.91533162
990805-11	990805-11-CE19	0.159651747
951222-3	951222-3-CE2	13.73202073
960227-8	960227-8-CE51	2.602422787
950607-4	950607-4-CE7	0.37967353
981029-8	981029-8-CE8	0.231595141
950607-4	950607-4-CE13	0.250137551
061121-4	061121-4-CE1	1.212310711
990407-8	990407-8-CE8	4.752099989

APPLICATION NUMBER	EASEMENT ID	ACRES
150304-15	150304-15-CE1	25.59750165
140718-6	140718-6-CE1	41.69376622
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111228-11	111228-11-CE3	645.7213265
140718-10	140718-10-CE1	41.69376622
140718-10	140718-10-CE2	41.31570138
140725-8	140725-8-CE1	3.581338653
140725-8	140725-8-CE2	13.20244196
140725-8	140725-8-CE4	2.000736332
140725-8	140725-8-CE7	0.174195257
141201-5	141201-5-CE1	1.159648867
950321-3	950321-3-CE1	3.485431266
950321-3	950321-3-CE2	6.048907877
021122-3	021122-3-CE1	0.363323857
950202-10	950202-10-CE6	5.076302581
120425-8	120425-8-CE1	896.9935313
980821-2	980821-2-CE6	1.51153189
020122-20	020122-20-CE1	3.694464393
06036-C	06036-C-CE3	1.921472894
980825-16	980825-16-CE3	2.568330926
980821-2	980821-2-CE3	4.758182201
990707-12	990707-12-CE1	16.03351601
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931022-2	931022-2-CE4	5.4350344
050706-20	050706-20-CE3	16.1667537
940307-5	940307-5-CE6	0.382291715
990315-6	990315-6-CE1	27.45287611
950607-4	950607-4-CE9	0.138493856
960816-3	960816-3-CE7	0.180157947
950607-4	950607-4-CE4	15.98582581
960718-16	960718-16-CE4	77.48865201
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960828-4	960828-4-CE2	0.893271674
991229-9	991229-9-CE1	0.543591755
070417-15	070417-15-CE1	1.201562265
020227-11	020227-11-CE1	0.28849812
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950607-4	950607-4-CE5	9.043120325
030326-8	030326-8-CE1	2.827217797
951012-2	951012-2-CE2	0.726646192
991026-16	991026-16-CE1	1.502475284
100521-23	100521-23-CE7	2.849154578
960516-6	960516-6-CE5	10.17252514
980702-5	980702-5-CE1	0.31987535
950607-4	950607-4-CE1	11.53966553
981029-8	981029-8-CE4	0.611760804
041018-13	041018-13-CE1	0.456414123

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010917-5	010917-5-CE10	2.321818552
980824-9	980824-9-CE1	0.21260682
101112-8	101112-8-CE1	0.775368626
960227-8	960227-8-CE52	5.813118507
960816-3	960816-3-CE17	9.137184117
960227-8	960227-8-CE39	4.063607072
980513-8	980513-8-CE4	1.014731596
070507-23	070507-23-CE1	25.08785794
980428-3	980428-3-CE1	1.568732145
940922-17	940922-17-CE1	7.86390724
110621-4	110621-4-CE1	0.821021892
031031-27	031031-27-CE1	11.15075287
020819-16	020819-16-CE2	44.02479319
050208-14	050208-14-CE7	0.746672558
991001-11	991001-11-CE1	3.748330484
960227-8	960227-8-CE45	1.425169586
960227-8	960227-8-CE48	3.174044231
110908-7	110908-7-CE3	10.39605574
100521-23	100521-23-CE6	1.316732842
020523-16	020523-16-CE1	38.06407461
980113-6	980113-6-CE1	19.81980834
941109-4	941109-4-CE2	8.332300912
980727-6	980727-6-CE4	40.6775389
980727-6	980727-6-CE2	303.8260651
110608-7	110608-7-CE1	12.901596
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040803-19	040803-19-CE10	10.65485171
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960828-4	960828-4-CE1	11.69971176
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991004-7	991004-7-CE5	0.68173455
940729-3	940729-3-CE1	7.460833022
900118-7	900118-7-CE2	12.28067041
040803-19	040803-19-CE1	17.73428048
120808-24	120808-24-CE2	3.905232172
120808-24	120808-24-CE4	0.222987015
080827-7	080827-7-CE1	9.091186706
981029-8	981029-8-CE14	6.469060722
980911-12	980911-12-CE2	3.078042399
120113-5	120113-5-CE7	0.463684592
930624-6	930624-6-CE1	0.187011776
001004-11	001004-11-CE2	0.846676665

APPLICATION NUMBER	EASEMENT ID	ACRES
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011121-7	011121-7-CE2	4.049405033
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951211-6	951211-6-CE3	24.21491899
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110509-20	110509-20-CE3	1.38200898
950703-5	950703-5-CE20	0.154260345
960816-3	960816-3-CE11	0.765745132
941109-4	941109-4-CE3	6.849391448
050411-27	050411-27-CE1	1.296420192
000329-16	000329-16-CE7	0.35261085
941109-4	941109-4-CE1	17.59626153
960227-8	960227-8-CE26	16.81377351
950607-4	950607-4-CE6	2.933742958
960816-3	960816-3-CE14	0.204823078
960816-3	960816-3-CE18	3.822211538
940321-2	940321-2-CE1	0.779656694
990805-11	990805-11-CE11	11.27442029
960227-8	960227-8-CE15	3.999222683
070508-27	070508-27-CE1	2.858474684
020228-13	020228-13-CE1	0.895145661
960227-8	960227-8-CE37	9.9745919
020410-6	020410-6-CE4	3.897064128
120806-8	120806-8-CE1	3.485060028
051118-16	051118-16-CE1	96.53249588
000922-12	000922-12-CE4	1.309873764
031001-18	031001-18-CE5	10.18224053
980824-9	980824-9-CE4	0.856086367
000811-3	000811-3-CE1	0.131272786
960227-8	960227-8-CE19	1.618453546
970428-2	970428-2-CE2	0.001310718
950703-5	950703-5-CE14	0.579976365
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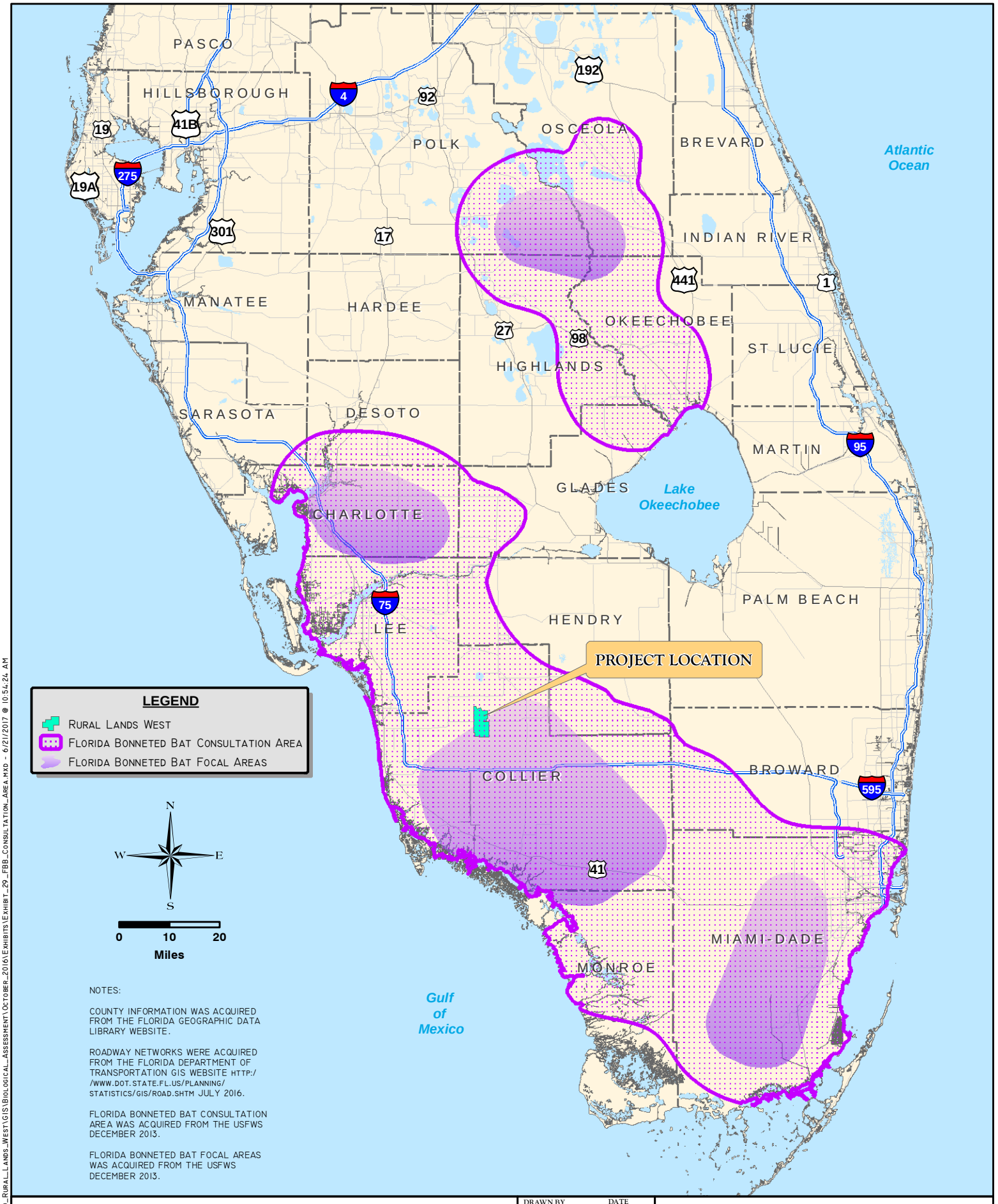
EXHIBIT 29

FLORIDA BONNETED BAT CONSULTATION AREA AND FOCAL AREAS MAP



NOTES:

COUNTY INFORMATION WAS ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA DEPARTMENT OF TRANSPORTATION GIS WEBSITE HTTP://WWW.DOT.STATE.FL.US/PLANNING/STATISTICS/GIS/ROAD.SHTM JULY 2016.

FLORIDA BONNETED BAT CONSULTATION AREA WAS ACQUIRED FROM THE USFWS DECEMBER 2013.

FLORIDA BONNETED BAT FOCAL AREAS WAS ACQUIRED FROM THE USFWS DECEMBER 2013.

J:\2005\05CEN1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_29_FBB_CONSULTATION_AREA.MXD - 6/21/2017 @ 10:54:24 AM

EXHIBIT 29. FLORIDA BONNETED BAT CONSULTATION AREA AND FOCAL AREAS MAP RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

EXHIBIT 30

TOWN OF BIG CYPRESS
FLORIDA BONNETED BAT ACOUSTIC SURVEY REPORT

TOWN OF BIG CYPRESS
FLORIDA BONNETED BAT SURVEY

August 2008

Prepared For:

Collier Enterprises Management, Inc.
3003 Tamiami Trail North, Suite 400
Naples, Florida 34103
(239) 261-4455

Prepared By:

Passarella & Associates, Inc.
13620 Metropolis Avenue, Suite 200
Fort Myers, Florida 33912
(239) 274-0067

Project No. 05CEM1481

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INTRODUCTION

The following report documents the Florida bonneted bat (*Eumops floridanus*) surveys conducted by Passarella & Associates, Inc. on the Town of Big Cypress Development of Regional Impact (DRI) (Project). The bonneted bat surveys were conducted for six nights on November 29 and 30, 2007 and December 4, 5, 6, and 13, 2007.

The Project totals 3,699.10± acres and is located Sections 14, 15, 22, 23, 26, 27, 34, and 35; Township 48 South; Range 28 East; Collier County (Figure 1). The Project site is located along the eastern boundary of Golden Gate Estates. Oil Well Road (County Road (CR) 858) bisects the northern third of the Project site. The Camp Keais Strand is to the east.

The survey was conducted to determine the utilization of the Project by Florida bonneted bats. There are no known records of Florida bonneted bats occurring on-site. The Florida bonneted bat is listed as endangered by the Florida Fish and Wildlife Conservation Commission (FWCC). There is no current listing of this species by the U.S. Fish and Wildlife Service (USFWS).

BIOLOGY

This information regarding the biology of the Florida bonneted bat was obtained from "Bats of Florida" (Marks 2006) and from personal communication with George and Cynthia Marks.

Description

The Florida bonneted bat is the largest bat species in Florida, with a wing span averaging 490-530 millimeters (20 inches) and total length averaging 130-165 millimeters (6 inches). It is in the family Molossidae, and like other free-tailed bats in this family, the Florida bonneted bat has a tail that extends well beyond its short tail membrane. Also similar to other bats within this family, the Florida bonneted bat has small eyes, large upper lips, and long, narrow wings. The fur varies in color from dark gray to brownish gray or cinnamon brown on its dorsal side, with lighter, grayish fur underneath. The Florida bonneted bat is characterized by its large size and by its large, broad ears that slant forward over the eyes and are joined together at the midline of the head. Their big ears protrude over their head like a bonnet, giving them the characteristic name of "bonneted bat."

Range

The current range of the Florida bonneted bat is known to include both the east and the west coasts of the southern portion of the Florida peninsula (excluding the Keys). Specimens have been discovered in very few areas, including the Miami area in 1936; Coral Gables, Coconut Grove, and Miami in the 1950's; Punta Gorda in 1979; Fakahatchee Strand in 2000; and North Fort Myers in 2003. No other locations have been reported to date.

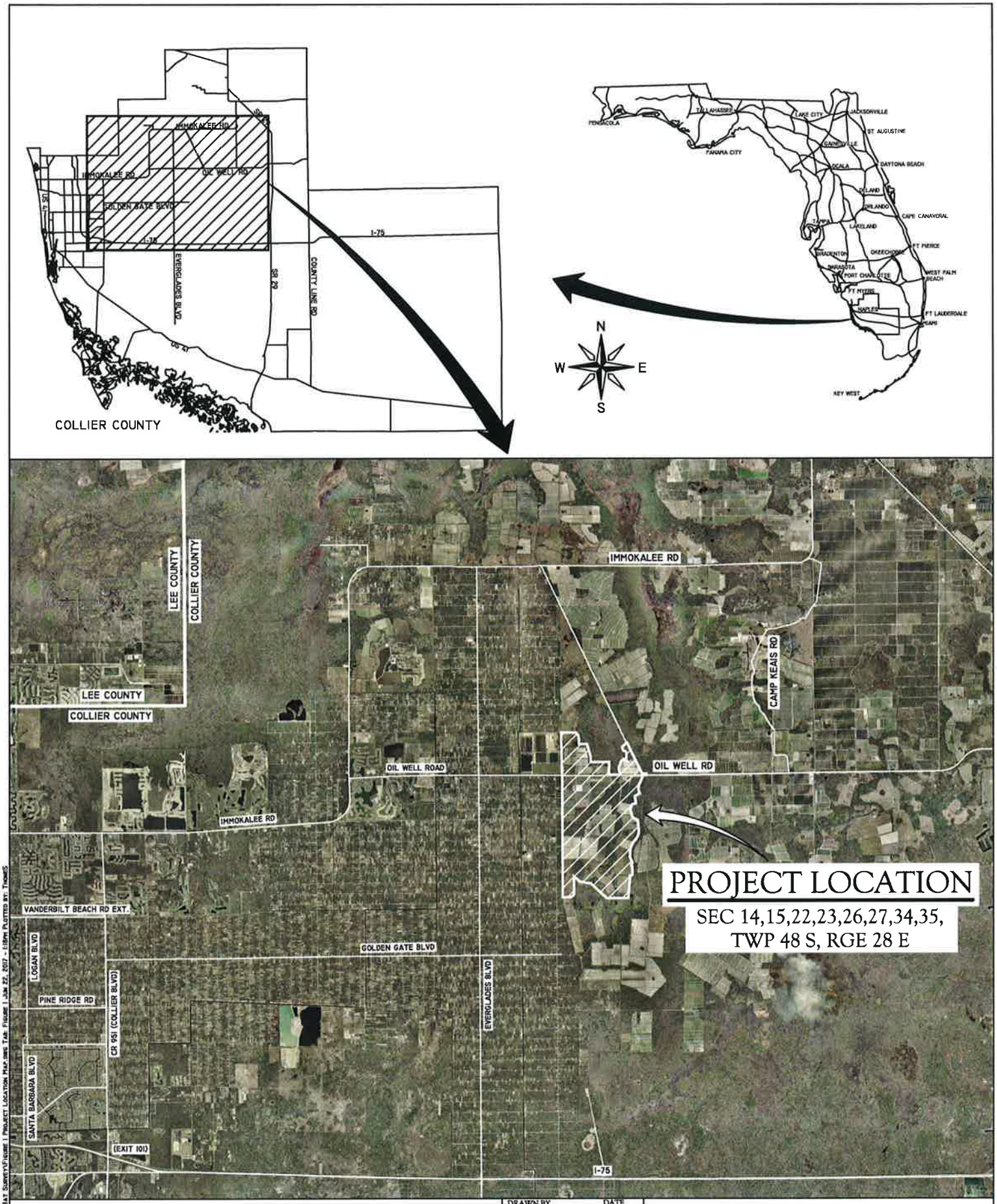


FIGURE 1. PROJECT LOCATION MAP
TOWN OF BIG CYPRESS

DRAWN BY	DATE
P.F.	10/24/07
REVIEWED BY	DATE
D.T.	10/24/07
REVISED	DATE

PASSARELLA & ASSOCIATES, INC. Consulting Ecologists

Habitat

Florida bonneted bats have been found roosting in both urban and forested areas. They are known to roost in rock crevices, tree cavities, buildings, and bat boxes. Their preferred roost site is under barrel tile roofs. Foraging habitat include areas over water such as ponds, wetlands, streams, canals, ditches, or over open ground such as forest edges, tree lines, corridors, prairies, pastures, golf courses, and croplands.

Life History and Ecology

Bats of the family Molossidae are found primarily in the tropical and subtropical regions of the world, but can also be found in the warmer portions of temperate regions. At one time the Florida bonneted bat was known as Wagner's mastiff bat (*Eumops glaucinus*), and was considered a single species throughout its extensive range. In 1971, the Florida population was recognized as a separate subspecies by Karl Koopman and was given the scientific name of *Eumops glaucinus floridanus*. Taxonomic research completed by Robert Timm and Hugh Genoways in 2004 proved that the Florida population is a distinct species, thus its reclassification as *Eumops floridanus*.

Little information is known about the ecology of Florida bonneted bats. They are colonial and appear to roost in small colonies of approximately 8 to 12 individuals. Findings from two known colonies suggest that the bats may roost in a "harem" structure consisting of one male with a group of females. Females give birth to a single pup, but are believed to have two birthing seasons during the year. It has been speculated that one birthing period may occur in June and July and a second in late summer. It is unknown whether the females will produce an offspring during both birthing periods. Pregnant females have been found in June, July, August, and September. Mating behavior, length of gestation, and information about weaning of the young is unknown.

All molossid species are insectivorous and guano from one Florida bonneted bat roost included the remains of insects such as beetles, flies, and true bugs. The Florida bonneted bat emerges later in the evening than most Florida species (approximately 40 minutes after sunset). They are high, fast flyers and are often observed flying at 30 feet or higher, foraging above treetops and over open areas. Very little insect activity occurs if temperatures fall into the 50's (ºF), and bat foraging activity drops off significantly when temperatures fall this low. Little else is known about their diet.

Like most all bats, the Florida bonneted bat uses echolocation. Echolocation is used by bats to determine how far away an object is, its size, shape, texture, whether it is approaching or receding, and how fast it is moving. A frequently used term in describing bat echolocation calls is hertz (Hz), which is defined as one cycle (vibration) per second. A thousand cycles per second is referred to as a kilohertz (kHz). The Florida bonneted bat is the only bat in Florida that uses a low frequency in the 10-16 kHz range (occasional extended call range from 16-25 kHz), thus distinguishing their call from all other bats in Florida.

METHODOLOGY

Determination of presence for Florida bonneted bats was based on systematic field surveys conducted by qualified ecologists. The field survey methodology included an inventory of habitats on the Project site and identification of preferred Florida bonneted bat habitat types. Field surveys were conducted on six nights on November 29 and 30, 2007 and December 4, 5, 6, and 13, 2007. Surveys were conducted each night beginning at or before sunset. Surveys were not conducted in rain, high winds, or if temperatures dropped below 55 degrees Fahrenheit.

Fixed survey stations were established within 300 feet of potential foraging and roost locations (Exhibit A). Potential roost locations included buildings and structures. Surveys were conducted for a period of approximately one hour near the building/structure locations to detect roost chatter and calls that may be emitted as bats leave the roost. If little to no bat activity was detected within one hour of sunset at the building/structure location, the observation station was relocated to areas that might provide potential foraging habitat.

Potential foraging habitat included open bodies of water, wetlands, open land, and along tree lines on the Project site.

Bats are nocturnal and fly fast, and are often difficult to identify by sight. Because humans cannot hear ultrasonic bat echolocation calls, an acoustic bat detector was used to determine the presence or absence of bats on the Project. Using an acoustic bat detector gave observers the opportunity to identify which species of bats were being detected, without having to capture them. Acoustic observations gave the observer information about the types of calls produced by any bats that were flying within 300 feet of the equipment, with the most basic parameters being the frequency of the call (its pitch), the shape of the call (how the frequency changes in time), and the rate at which calls are produced (Titley Electronics 2006). This information was plotted on a graph referred to as a sonogram. The AnaBat SD1 Compact Flash Bat Detector (AnaBat) was used to record bat calls emitted within the Project.

RESULTS

No Florida bonneted bats were observed or were detected by the AnaBat system on the Project during six nights of acoustic surveys conducted on November 29 and 30, 2007 and December 4, 5, 6, and 13, 2007. Weather conditions during the survey events are presented in Table 1. Field observations recorded during the Florida bonneted bat survey events are presented as Exhibit B.

Table 1. Weather Conditions

Date	Time	Start Temperature	End Temperature	Wind	Cloud Cover
November 29, 2007	1715-2015	High 70's	Low 70's	0-5 mph	Most cloudy to overcast with rain
November 30, 2007	1735-2300	Mid 70's	Mid 70's	Calm	Partly cloudy
December 4, 2007	1750-2255	Mid 60's	Low 50's	0-3 mph WNW	Clear

Table 1. (Continued)

Date	Time	Start Temperature	End Temperature	Wind	Cloud Cover
December 5, 2007	1735-2255	Low 70's	Low 60's	0-5 mph W	Cloudy
December 6, 2007	1736-2232	Mid 70's	Low 60's	0-5 mph	Partly cloudy to clear
December 13, 2007	1800-2200	Low 70's	High 60's	3-5 mph E/NNE	Mostly cloudy to party cloudy

A total of two areas on the Project site that contained nearby buildings/structures were identified as suitable survey start locations (Exhibit A). A total of 19 areas on the Project site were identified as suitable foraging habitat (containing nearby open water, wetlands, tree lines, or open land) and were used as forage stations. Combined, surveys were conducted at a total of 21 stations.

The survey collected no sonograms on November 29, 2007; 18 sonograms on November 30, 2007; no sonograms on December 4, 2007; 12 sonograms on December 5, 2007; 13 sonograms on December 6, 2007; and 99 sonograms on December 13, 2007. Sonograms containing representative calls of bats made during the survey periods are included as Exhibit C. Data obtained from the sonograms indicate that the Brazilian free-tailed bat (*Tadarida brasiliensis*), the northern yellow bat (*Lasiurus intermedius*), and possibly the evening bat (*Nycticeius humeralis*) were present on the Project site.

SUMMARY

Field surveys to identify the presence of Florida bonneted bats were conducted on the Project site on November 29 and 30, 2007 and December 4, 5, 6, and 13, 2007. Florida bonneted bats were not observed or detected by the AnaBat system on any of the survey dates.

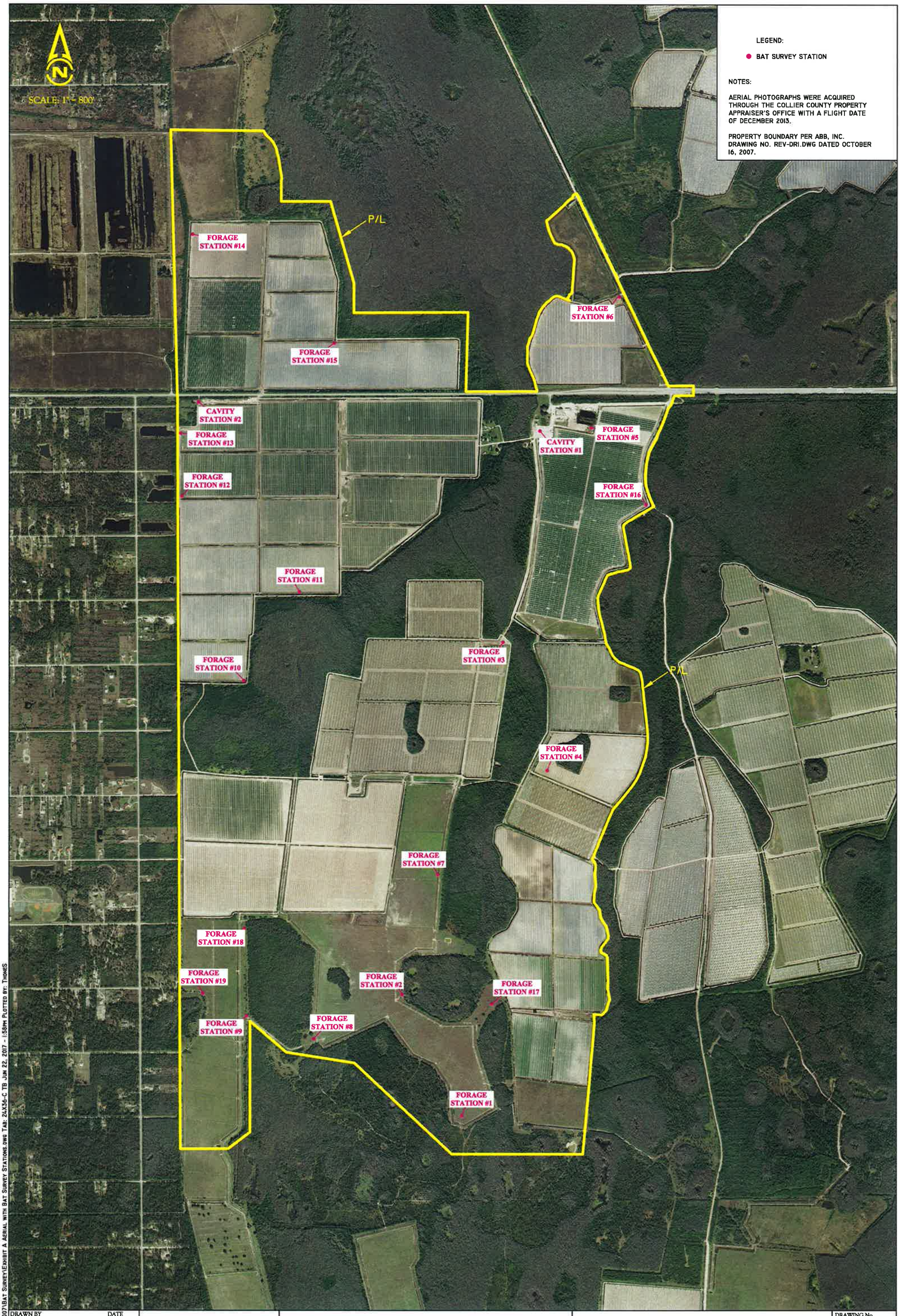
REFERENCES

Marks, C.S. and G.E. Marks. 2006. Bats of Florida. University Press of Florida, Gainesville, Florida.

Titley Electronics. 2006. AnaBat SD1 Compact Flash Bat Detector Operation Manual. Australia.

EXHIBIT A

AERIAL WITH BAT SURVEY STATIONS



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DRAWN BY: F.L.	DATE: 9/21/15
DESIGNED BY: K.C.P.	DATE: 9/21/15
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

TOWN OF BIG CYPRESS

AERIAL WITH BAT SURVEY STATIONS

DRAWING No. 05CEM1481

SHEET No. EXHIBIT A

EXHIBIT B

FLORIDA BONNETED BAT SURVEY FIELD OBSERVATIONS

TOWN OF BIG CYPRESS
FLORIDA BONNETED BAT SURVEY
FIELD OBSERVATIONS

Date: November 29, 2007
Sunset Time: 1735
Start time of survey: 1715 **Weather conditions:** Mostly cloudy skies, light winds at 0-5 mph, and temperatures in the high 70's.

End time of survey: 2015 **Weather conditions:** Overcast with rain and temperatures in the low 70's.

Observers: Cheryl Rolph and Bethany Bachelor

Station	Time	Field Notes
FS-1	1715	Heard American kestrel, pileated woodpecker, gray catbird, and barred owl. Very little insect activity detected by Anabat. No bats detected.
	1815	End of survey at FS-1.
FS-2	1833	Some insect activity. Potential bat activity detected by Anabat at 1835 and 1836 (45-50 kHz range).
	1840	Light rain began. Stopped recording.
	2015	Rain did not let up. End of survey.
		Summary: No bonneted bats identified.

Note: Observations are summarized for time period noted.

TOWN OF BIG CYPRESS
FLORIDA BONNETED BAT SURVEY
FIELD OBSERVATIONS

Date: November 30, 2007
Sunset Time: 1735
Start time of survey: 1735 **Weather conditions:** Partly cloudy skies, no wind, and temperatures in the mid 70's.

End time of survey: 2300 **Weather conditions:** Partly cloudy skies, no wind, and temperatures in the mid 70's.

Observers: Mike Myers and Shane Johnson

Station	Time	Field Notes
CS-1	1735	Heard gray catbird. Observed yellow-crowned night herons fly overhead, black-crowned night heron perched in cypress tree, and great blue heron flew to the east.
	1824	Anabat detected potential bat in the 45-50 kHz range at 1820, 1841, 1845, and 1852. Some insect activity.
	1840	Southern toad called from the west.
	1900	End of survey at CS-1.
FS-3	1920	Little insect activity. Potential bat activity detected by Anabat at 1930 and 2004 (45-50 kHz range).
	2005	End of survey at FS-3.
FS-4	2020	Heard Cuban tree frogs to the south. No bat activity detected by Anabat. No insect activity.
	2100	End of survey at FS-4.
FS-5	2134	Little insect activity. Potential bat activity detected by Anabat at 2135, 2151, and 2152 (25-30 kHz range).
	2215	End of survey at FS-5.
FS-6	2233	Heard two great horned owls to the north and Cuban tree frogs to the west. No bat activity detected by Anabat.
	2300	End of survey at FS-6.
	2300	End of survey.
		Summary: No bonneted bats identified.

Note: Observations are summarized for time period noted.

TOWN OF BIG CYPRESS
FLORIDA BONNETED BAT SURVEY
FIELD OBSERVATIONS

Date: December 4, 2007
Sunset Time: 1734
Start time of survey: 1750 **Weather conditions:** Clear skies, west-northwest winds at 0-3 mph, and temperatures in the mid 60's.

End time of survey: 2255 **Weather conditions:** Clear skies, west-northwest winds at 0-3 mph, and temperatures in the low 50's.

Observers: Bill Cox and Shane Johnson

Station	Time	Field Notes
FS-7	1750	Heard gray catbirds and killdeers. Heard and observed many cattle grazing in adjacent fields. Little insect activity. No bat activity detected by Anabat.
	1900	End of survey at FS-7.
FS-2	1915	Little insect activity. No bat activity detected by Anabat.
	2015	End of survey at FS-2.
FS-8	2040	Little insect activity. No bat activity detected by Anabat.
	2140	End of survey at FS-8.
FS-9	2155	Little insect activity. No bat activity detected by Anabat.
	2255	End of survey at FS-9.
	2255	End of survey.
		Summary: No bonneted bats identified.

Note: Observations are summarized for time period noted.

TOWN OF BIG CYPRESS
FLORIDA BONNETED BAT SURVEY
FIELD OBSERVATIONS

Date: December 5, 2007
Sunset Time: 1735
Start time of survey: 1740 **Weather conditions:** Cloudy skies, calm west winds at 0-5 mph, and temperatures in the low 70's.

End time of survey: 2255 **Weather conditions:** Cloudy skies, calm west winds at 0-5 mph, and temperatures in the low 60's.

Observers: Jenn Evans and Bill Cox

Station	Time	Field Notes
FS-10	1740	Heard gray catbird, American robin, and great blue heron. Observed mourning dove. Some insect activity.
	1850	End of survey at FS-10.
FS-11	1900	Heard Cuban tree frog. Insect activity is high. Observed Southern toad. Possible bat activity around 1937. High level of insect activity. Observed pig frogs in ditch. Anabat detected potential Brazilian free-tailed bat in 20-25 kHz range at 1937, 1956, 2008, and 2009.
	2018	End of survey at FS-11.
FS-12	2030	Heard Cuban tree frog. Moderate insect activity.
	2132	End of survey at FS-12.
FS-13	2141	Heard Cuban tree frogs and Southern leopard frog. Observed pig frog. Brazilian free-tailed bat detected in the 25-35 kHz range, but detector did not save call. Heard and observed great blue heron.
	2255	End of survey at FS-13.
	2255	End of survey.
		Summary: No bonneted bats identified.

Note: Observations are summarized for time period noted.

TOWN OF BIG CYPRESS
FLORIDA BONNETED BAT SURVEY
FIELD OBSERVATIONS

Date: December 6, 2007
Sunset Time: 1735
Start time of survey: 1736 **Weather conditions:** Partly cloudy skies, winds at 0-5 mph, and temperatures in the mid 70's.

End time of survey: 2232 **Weather conditions:** Clear skies, calm winds, and temperatures in the low 60's.

Observers: Bill Cox and Cheryl Rolph

Station	Time	Field Notes
CS-2	1736	Heard and observed gray catbirds. Observed mourning dove. Some insect activity detected. Potential bat activity detected by Anabat in the 30-35 kHz range at 1836.
	1851	End of survey at CS-2.
FS-14	1906	Heard Cuban tree frogs, leopard frogs, and little blue heron. Very little insect activity. Bat activity detected by Anabat (35-55 kHz range) at 1908, 1928, and in the 25-35 kHz range at 1928 and 1932.
	2010	End of survey at FS-14.
FS-15	2026	Heard Cuban tree frogs. Observed Southern toads. Moderate insect activity. Bat activity detected by Anabat in the 20-35 kHz range at 2054, 2118, 2132, and 2134.
	2138	End of survey at FS-15.
FS-16	2158	Heard leopard frogs. No insect or bat activity detected by Anabat.
	2232	End of survey at FS-16.
	2232	End of survey.
		Summary: No bonneted bats identified.

Note: Observations are summarized for time period noted.

TOWN OF BIG CYPRESS
FLORIDA BONNETED BAT SURVEY
FIELD OBSERVATIONS

Date: December 13, 2007
Sunset Time: 1736
Start time of survey: 1800 **Weather conditions:** Mostly cloudy skies, east winds at 3-5 mph, and temperatures in the low 70's.

End time of survey: 2200 **Weather conditions:** Partly cloudy skies, north-northeast winds at 3-5 mph, and temperatures in the high 60's.

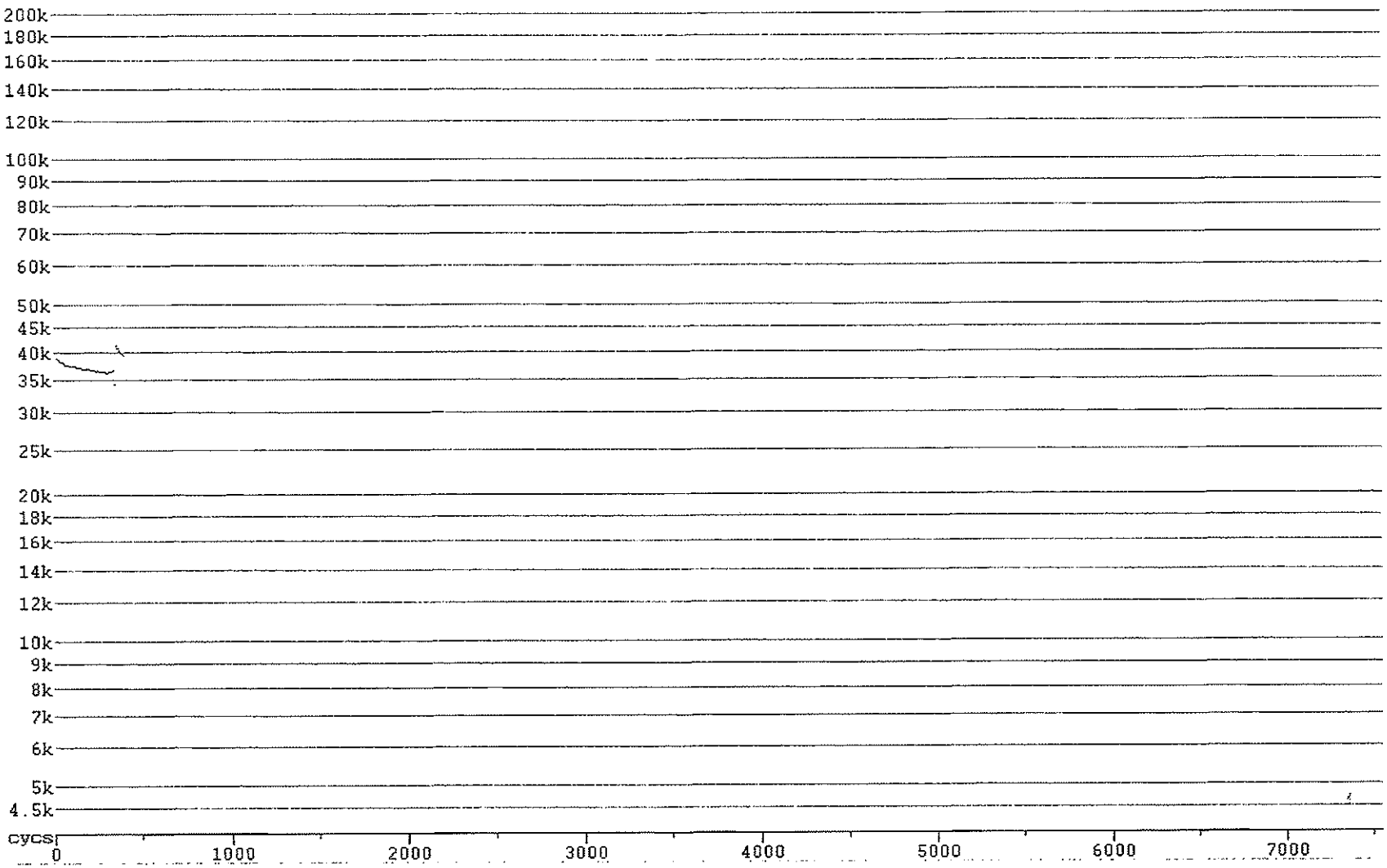
Observers: Bill Cox and Cheryl Rolph

Station	Time	Field Notes
FS-17	1800	Observed red-shouldered hawk and cotton-tail rabbits. Observed bat (unknown species) fly overhead before Anabat was powered on. Moderate insect activity. No bat activity detected by Anabat.
	1905	Light rain (mist). Stopped recording. End of survey at FS-17.
FS-18	1920	Observed barred owl and cotton-tail rabbits. Moderate insect activity. Potential bat activity detected by Anabat at 2034 and 2035 (25-30 kHz range).
	2040	End of survey at FS-18.
FS-19	2050	Moderate to high insect activity. Potential bat activity detected by Anabat at 2053, 2054, 2101, 2102, 2103, 2104, 2105, 2108, 2109, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2121, 2124, 2128, 2129, 2135, 2138, 2139, 2140, 2142, 2145, 2146, 2147, and 2149 (25-35 kHz range).
	2200	End of survey at FS-19.
	2200	End of survey.
		Summary: No bonneted bats identified.

Note: Observations are summarized for time period noted.

EXHIBIT C

SONOGRAMS OF REPRESENTATIVE CALLS OBTAINED DURING THE FLORIDA BONNETED BAT SURVEYS



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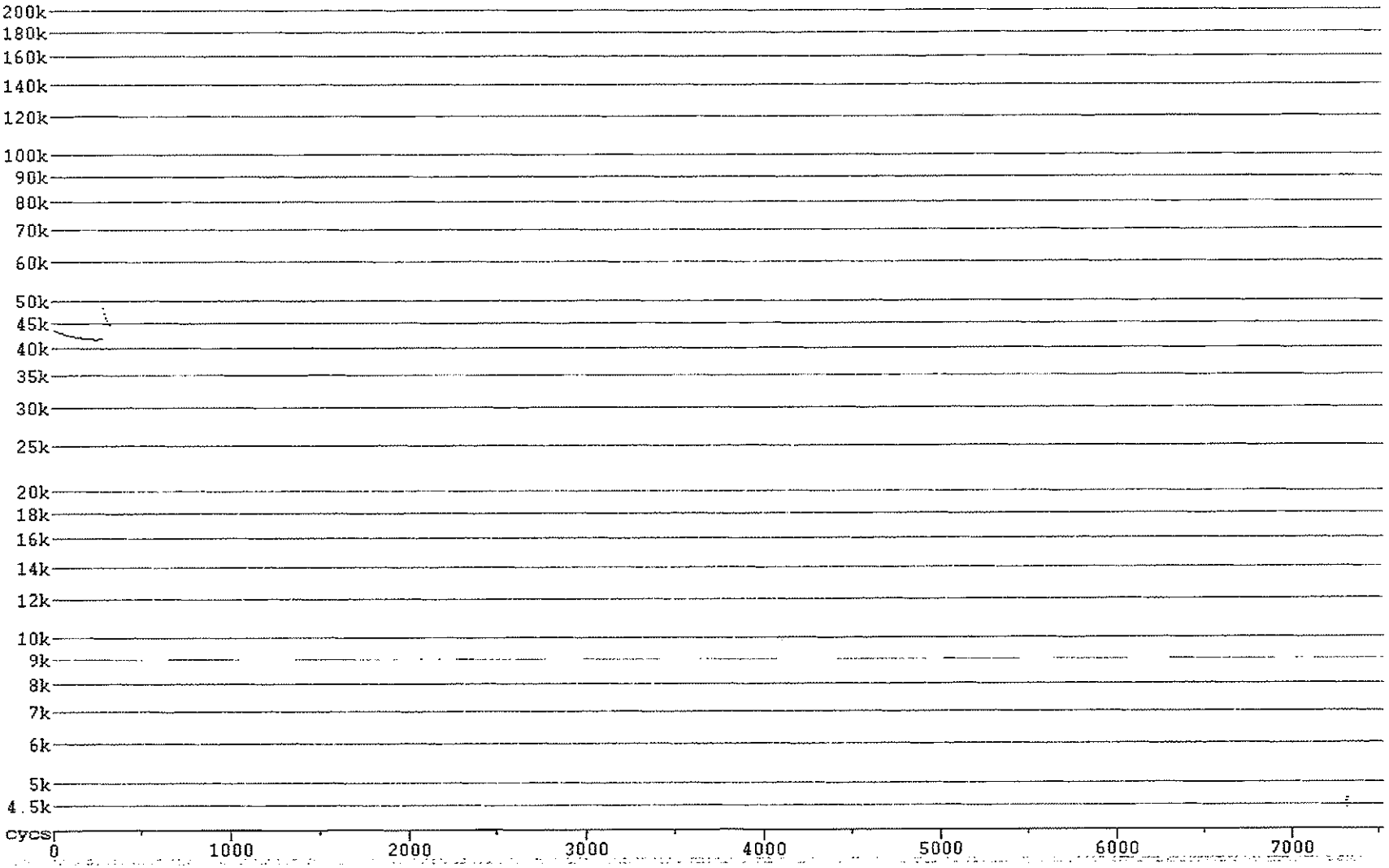

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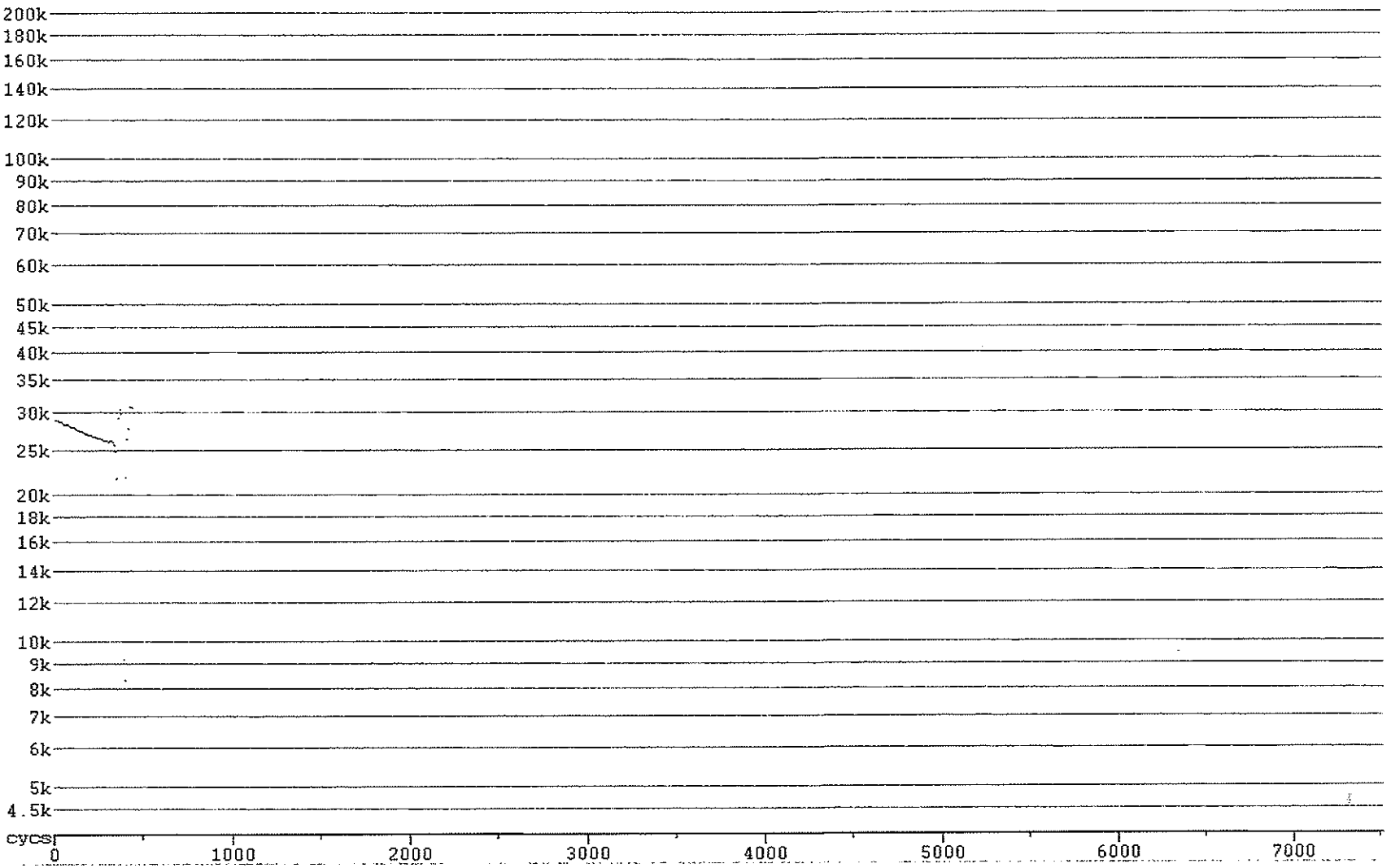
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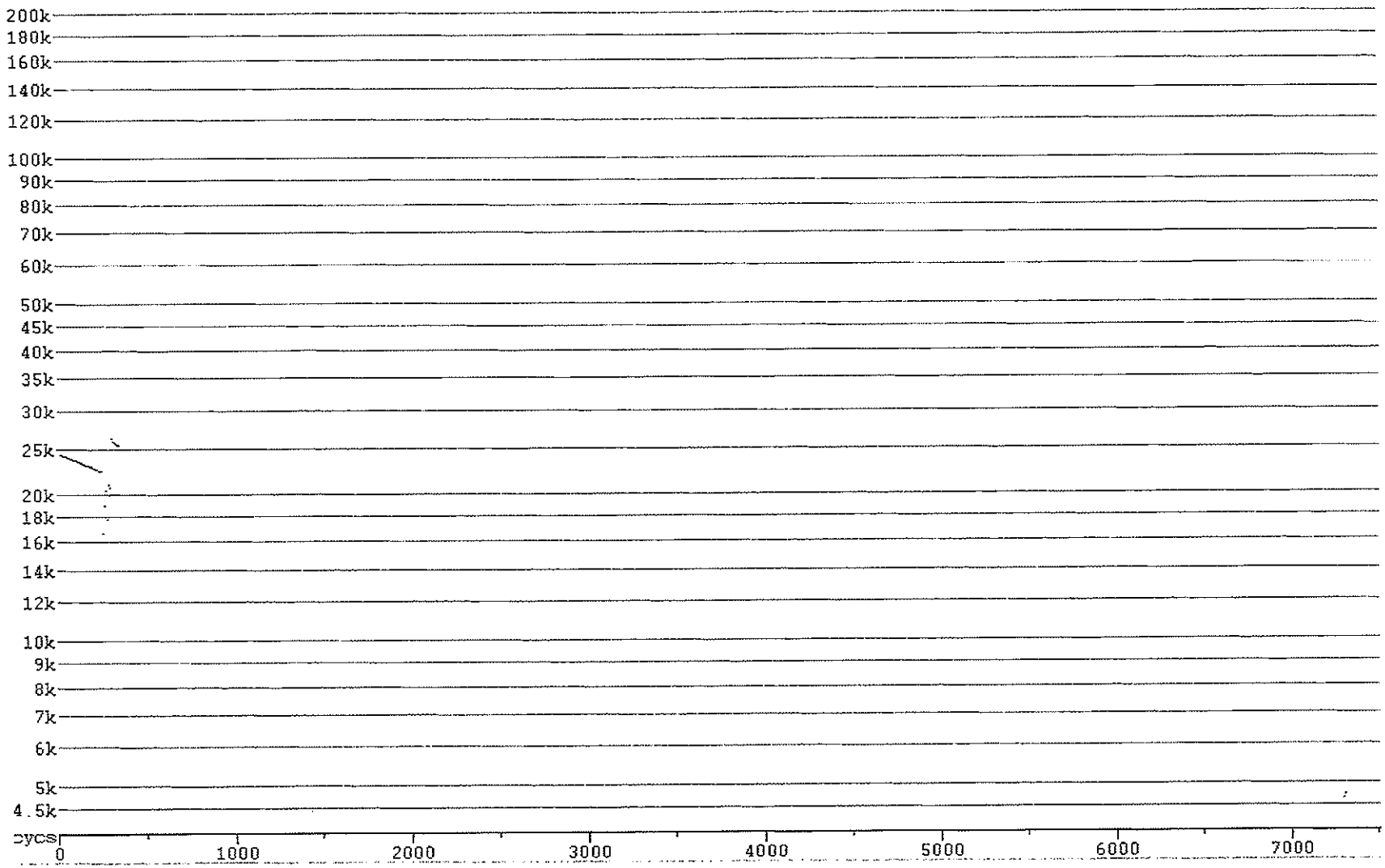

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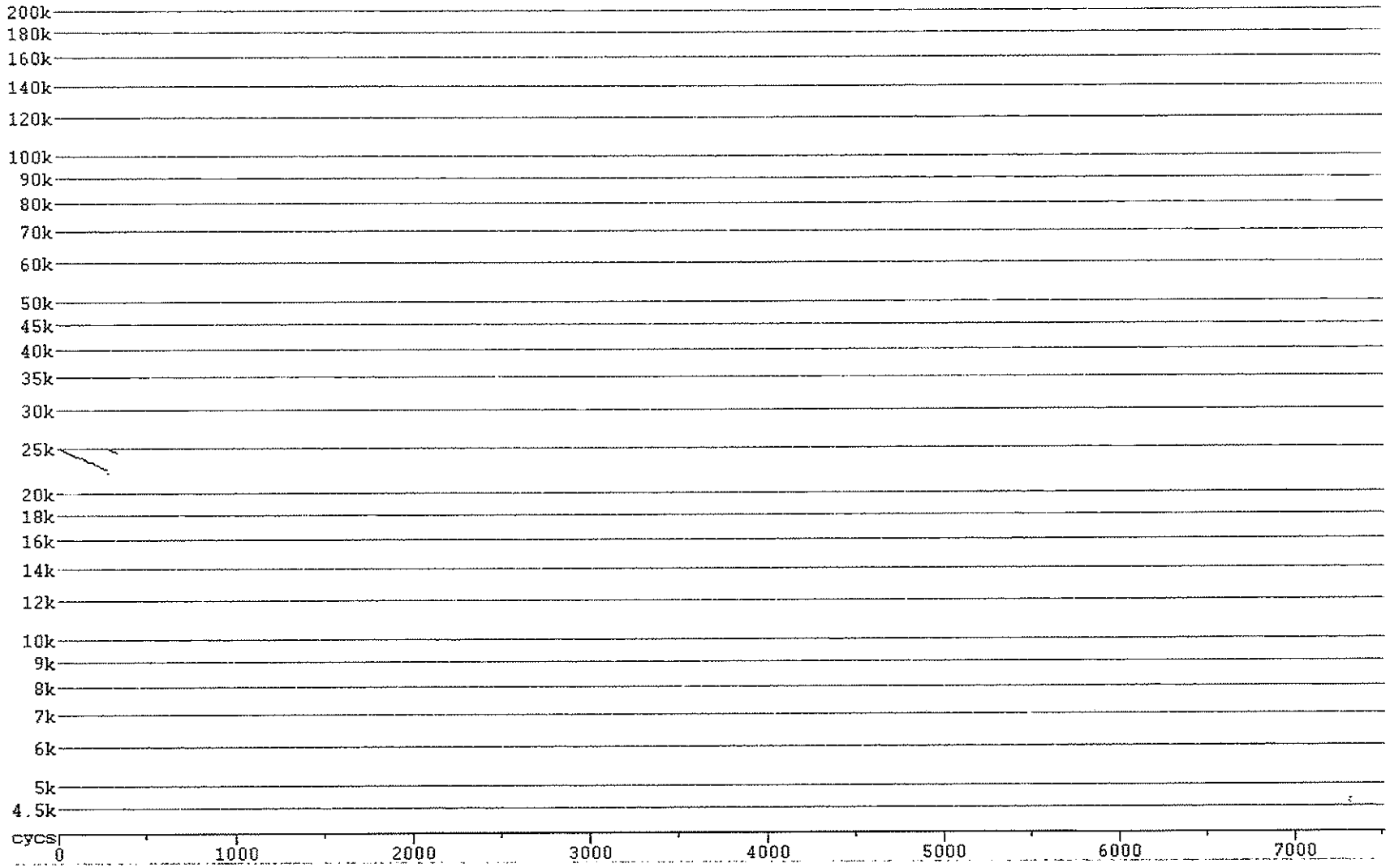

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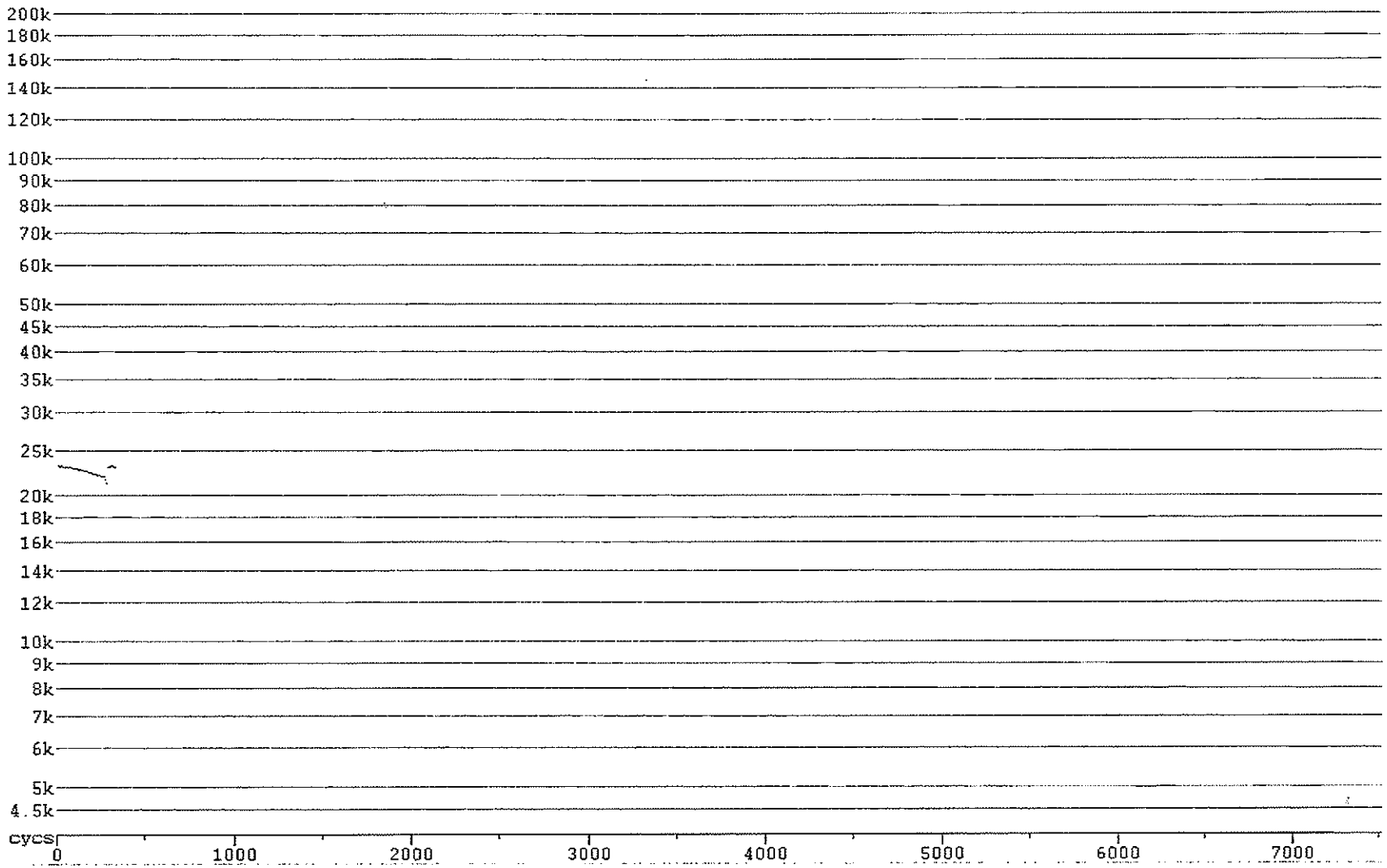
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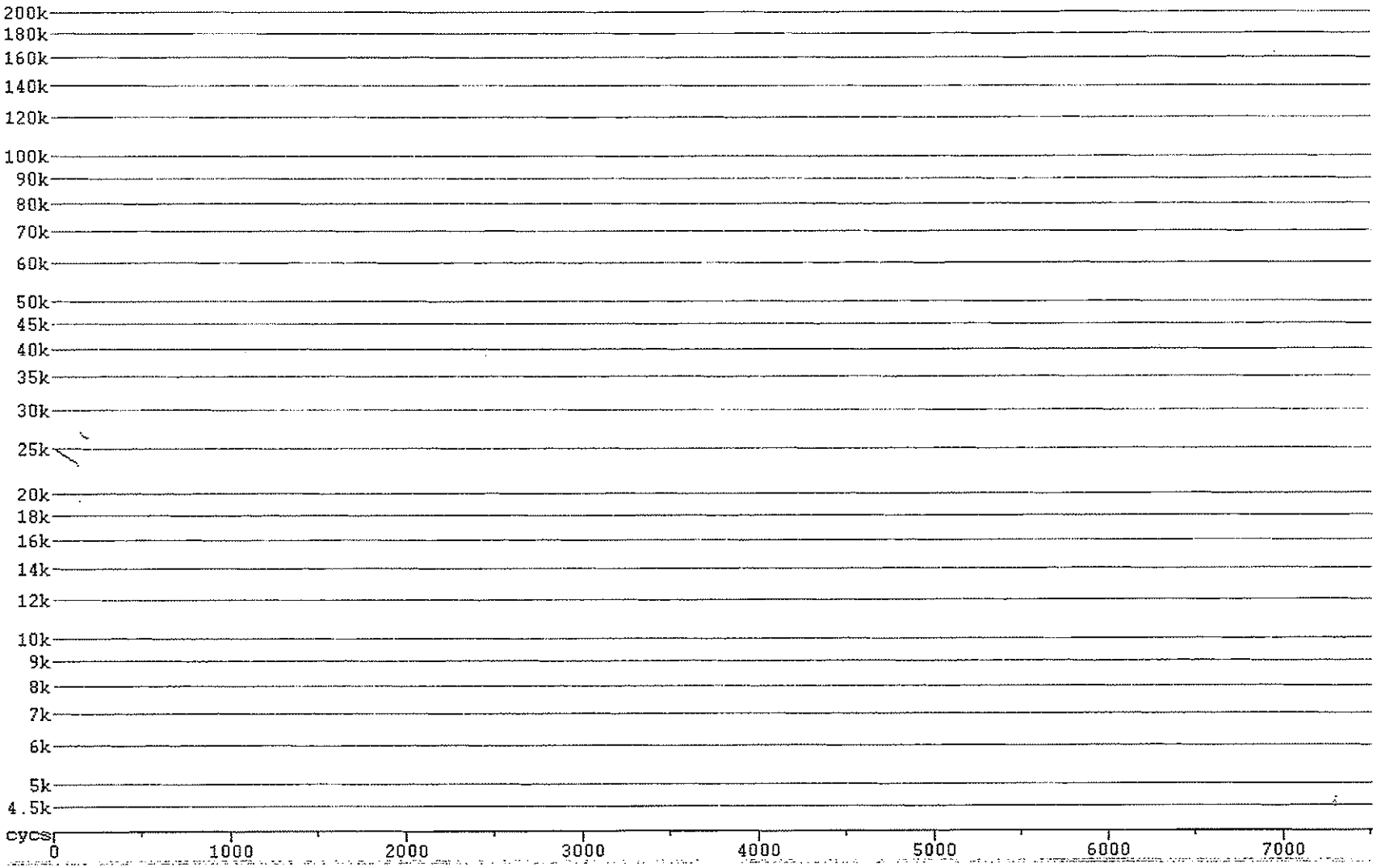

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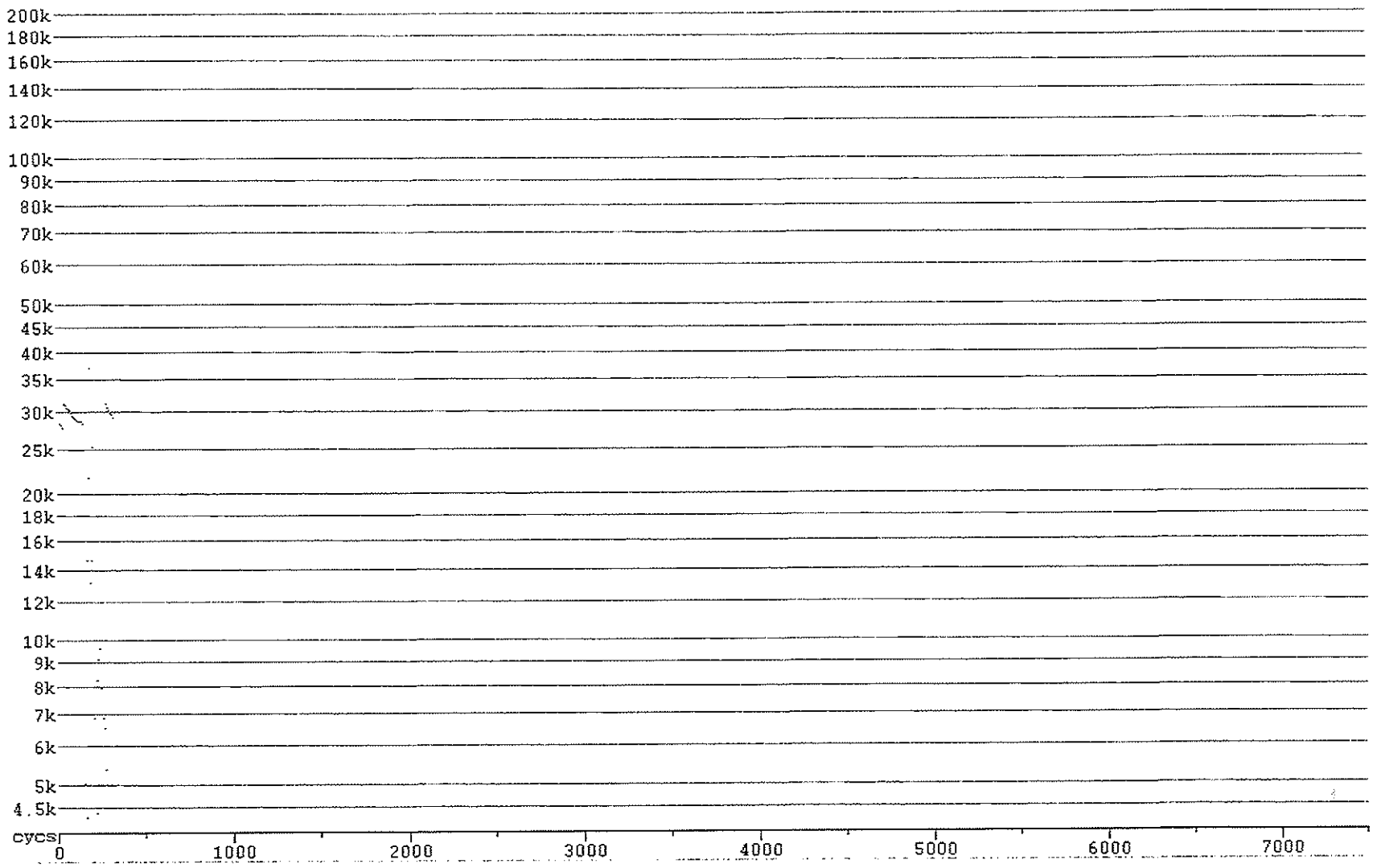

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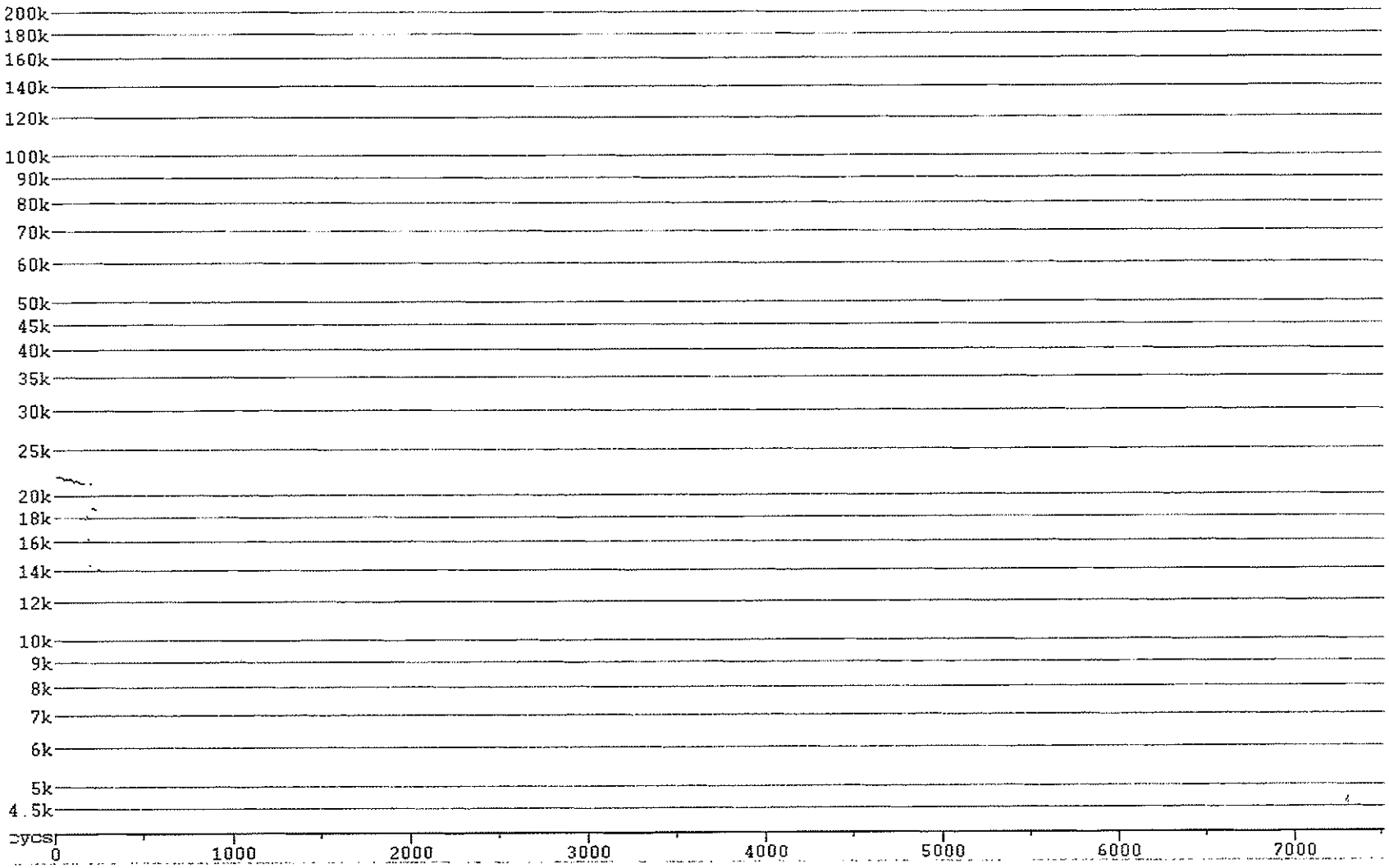
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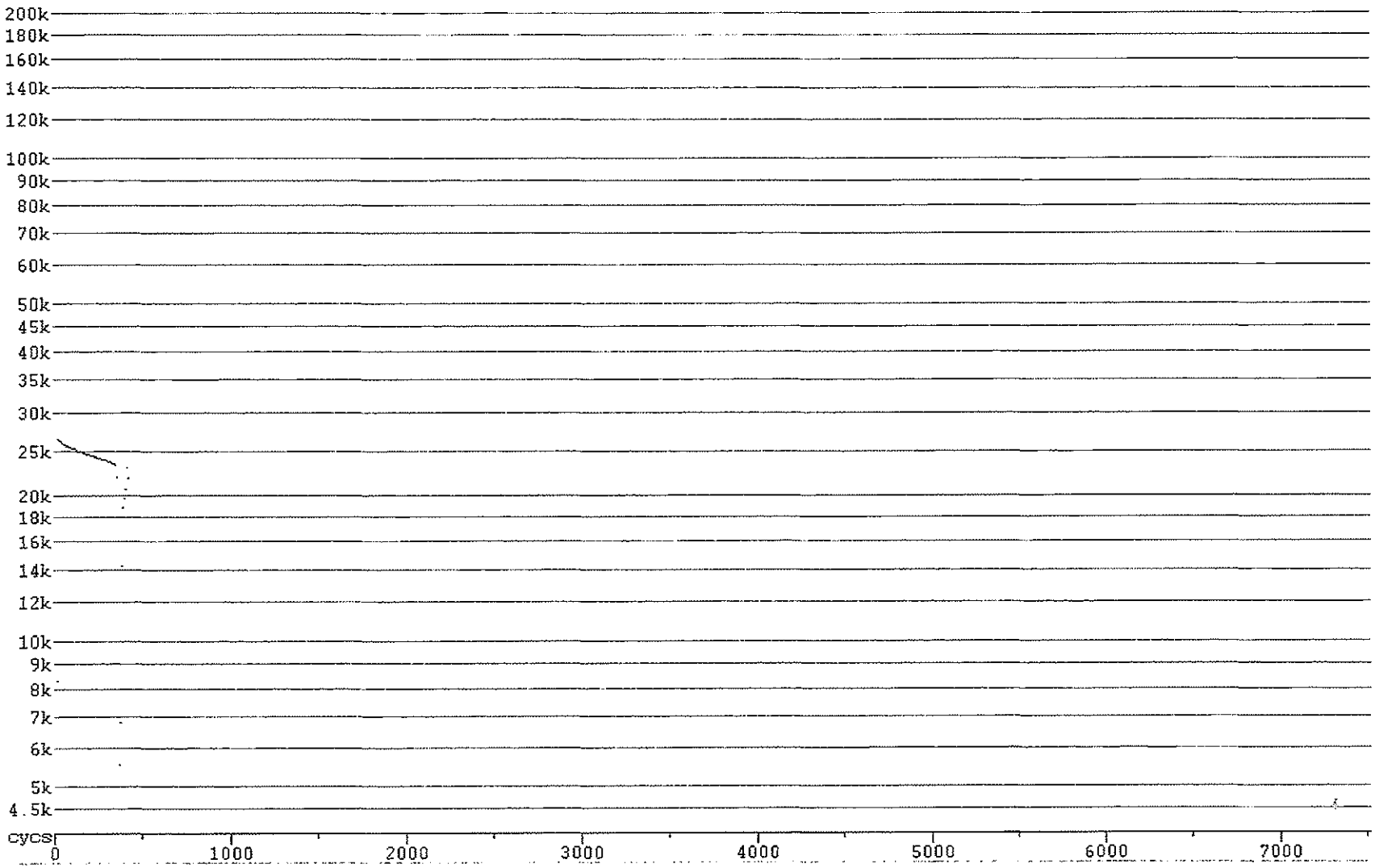

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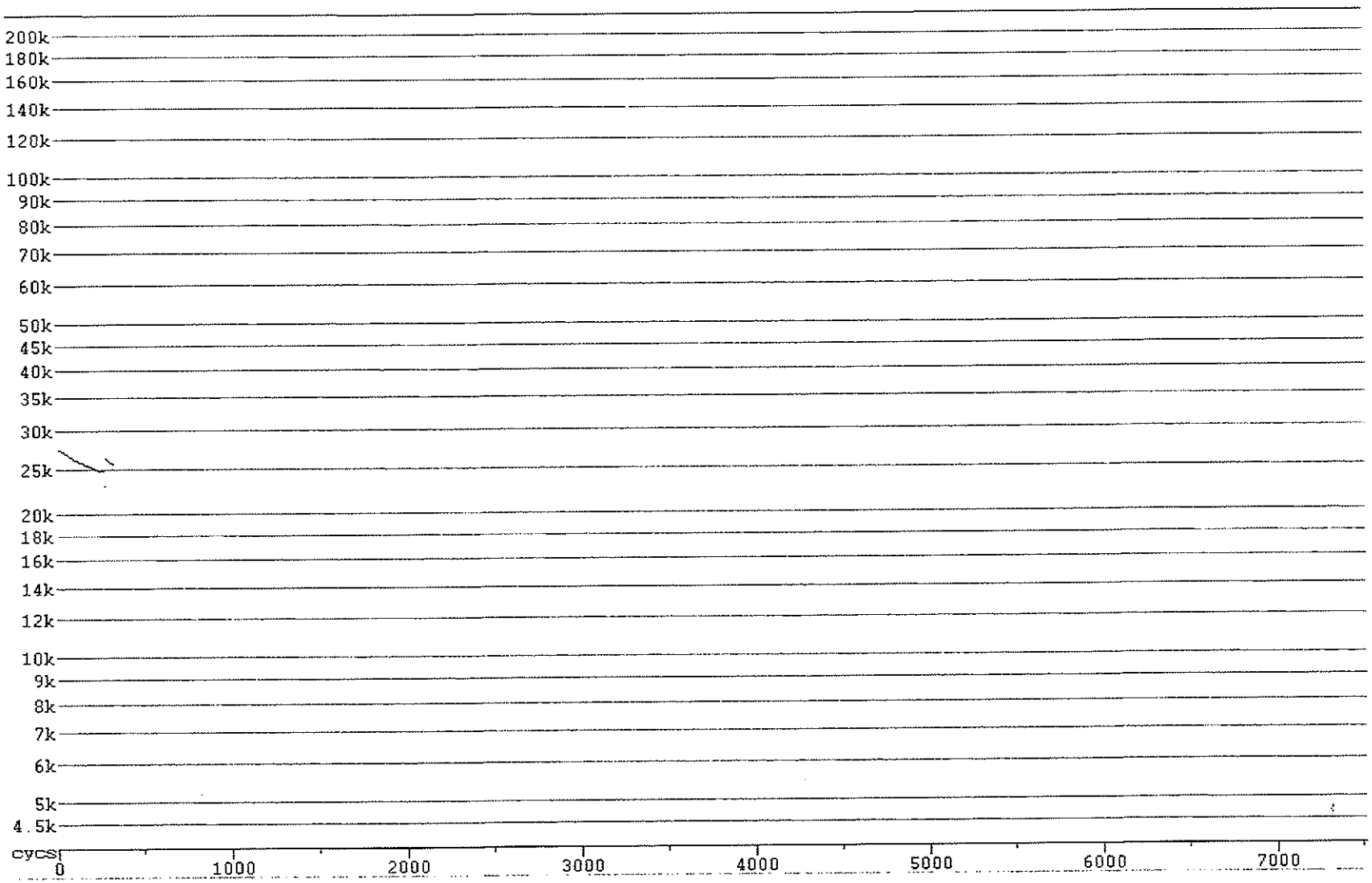

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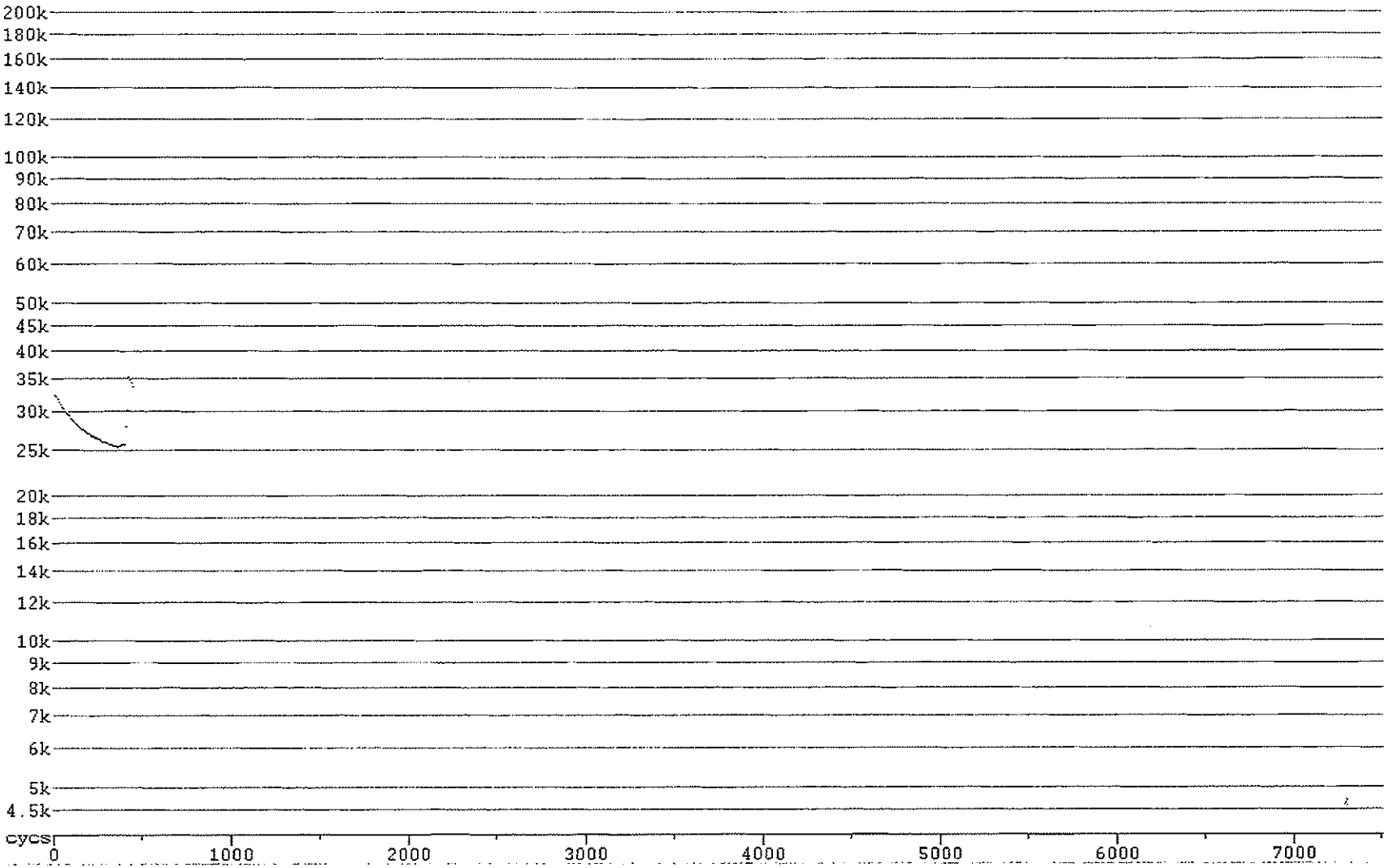

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EXHIBIT 31

RURAL LANDS WEST
FLORIDA BONNETED BAT ACOUSTIC SURVEY REPORT

RURAL LANDS WEST
FLORIDA BONNETED BAT
ACOUSTIC SURVEY REPORT

June 2017

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Project No. 05CEM1481

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1.0 INTRODUCTION

This report documents the Florida bonneted bat (*Eumops floridanus*) survey conducted by Passarella & Associates, Inc. for Rural Lands West (Project). The Project site totals 10,264.63± acres and is located in Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35 and 36; Township 48 South; Range 28 East; Collier County (Appendix A). The Project site is located along the eastern boundary of Golden Gate Estates. Oil Well Road (County Road (CR) 858) bisects the Project site and Immokalee Road is located approximately two miles to the north.

The survey was conducted to determine if Florida bonneted bats are utilizing the Project site. The Florida bonneted bat is listed as Threatened by the Florida Fish and Wildlife Conservation Commission and Endangered by the U.S. Fish and Wildlife Service (USFWS). There are no known records of Florida bonneted bats occurring on-site.

2.0 SITE CONDITIONS

A total of 77 vegetative associations and land uses (i.e., Florida Land Use, Cover and Forms Classification System (FLUCFCS) codes) were identified on the property. The dominant land use on the property is agriculture. The land use types Cropland and Pastureland (FLUCFCS Code 210), Improved Pasture (FLUCFCS Code 211), Unimproved Pasture (FLUCFCS Code 212) and Row Crops (FLUCFCS Code 214) comprise 48.6 percent (4,978.43± acres) of the site. The native areas on-site are dominated by Cypress, Disturbed (FLUCFCS Code 6219) which comprises 29.4 percent of the Project site. Native upland habitats are dominated by Pine Flatwoods, Disturbed (FLUCFCS Code 4119) which comprises 2.6 percent of the site.

Corps jurisdictional wetlands on the Project site constitute a total of 4,475.95± acres, while isolated wetlands occupy 14.71± acres. The on-site wetlands are generally forested and are dominated by cypress with areas of cypress/pine, hydric pine, mixed wetland hardwood, and freshwater marsh habitats. The wetlands contain varying degrees of exotic infestation, including the exotic species Brazilian pepper (*Schinus terebinthifolius*), primrose willow (*Ludwigia decurrens*), torpedograss (*Panicum repens*), paragrass (*Urochloa mutica*), and West Indian marsh grass (*Hymenachne amplexicaulis*). A FLUCFCS and Wetlands Map for the property are provided in Appendix B.

3.0 FLORIDA BONNETED BAT BIOLOGY

3.1 Description

With an average wingspan of 490 to 530 millimeters (19.3 to 20.9 inches) and an average length of 130 to 165 millimeters (5.1 to 6.5 inches), the Florida bonneted bat is the largest species of bat found in Florida. They are members of the Molossidae family, commonly referred to as free-tailed bats. As the name suggests, Molossids, including Florida bonneted bats, have tails that extend well beyond their short tail membrane. Also similar to other free-tailed bats, the Florida bonneted bat has small eyes; large upper lips; and

long, narrow wings (Marks and Marks 2006). Their fur is short and glossy with sharply bicolored hairs with a white base (Timm and Genoways 2004). Their fur ranges from dark gray to brownish gray or cinnamon brown on its dorsal side, with lighter, grayish fur underneath. The Florida bonneted bat is characterized by its large size and its large, broad ears that slant forward over the eyes and join together along the midline of the head. Their big ears protrude over their head like a bonnet, giving them their name (Marks and Marks 2006).

3.2 Range

The current range of the Florida bonneted bat is known to include both the east and the west coast of Southern Florida (excluding the Keys), and includes Charlotte, Collier, Lee, Miami-Dade, Okeechobee, and Polk Counties. In addition, bonneted bat calls were recorded in two locations in the Kissimmee River area, which may effectively move the range of this species northward by approximately 50 miles (Marks and Marks 2008a and USFWS 2014). They have historically been found in only a few areas, including the Miami area in 1936; Coral Gables, Coconut Grove, and Miami in the 1950s; Punta Gorda in 1979; Fakahatchee Strand in 2000; and North Fort Myers in 2003 (Marks and Marks 2006). Recent locations where bonneted bats have been recorded include 12 locations documented during acoustic surveys conducted between 2006 and 2008: Coral Gables (Granada Golf Course) and Homestead in Miami-Dade County; North Fort Myers in Lee County; Babcock Ranch in Charlotte and Lee Counties; Babcock/Webb in Charlotte and Lee Counties; Kicco Wildlife Management Area in Polk County; Kissimmee River Public Use Area in Okeechobee County; Naples in Collier County; Everglades City in Collier County; Fakahatchee Preserve in Collier County; Big Cypress National Preserve in Collier County; and Picayune Strand State Forest in Collier County (Marks and Marks 2008b and USFWS 2014). Additional surveys conducted in 2010 through 2012 identified additional bonneted bat locations within the Miami area and areas of Everglades National Park and Big Cypress National Preserve (USFWS 2014).

3.3 Habitat

Habitat for the Florida bonneted bat consists mainly of foraging areas and roosting sites, including some artificial structures in both urban and forested areas (USFWS 2014). They are known to roost in rock crevices, tree cavities, buildings, and bat boxes (Marks and Marks 2008b). South Florida bonneted bats roost primarily in trees and in manmade artificial structures, with roost availability indicated as an important limiting factor (USFWS 2014). Foraging habitat includes areas over open fresh water such as ponds, streams, and wetlands; and they will drink when flying over open water (USFWS 2014). They will also forage over treetops and other open areas such as golf courses (Marks and Marks 2006). During the dry season, the bonneted bat becomes more dependent upon the remaining open water habitats such as ponds, streams, and wetland areas for foraging activities (USFWS 2014).

3.4 Life History and Ecology

Molossids are found primarily in the tropical and subtropical regions of the world, but some species also occur in warmer portions of temperate regions. At one time the Florida bonneted bat was known as Wagner's mastiff bat (*Eumops glaucinus*) and was considered a single species with an extensive range (Marks and Marks 2006). In 1971, the Florida population was recognized as a separate subspecies, *Eumops glaucinus floridanus* (Koopman 1971). Evidence published in 2004 demonstrated that in fact the Florida population is a distinct species and it was subsequently reclassified as *Eumops floridanus* (Timm and Genoways 2004).

Very little information is known about the ecology of the Florida bonneted bat. They are colonial and appear to roost in groups of approximately 8 to 12 individuals. Findings from two colonies suggest that Florida bonneted bats may roost in a harem consisting of one male and a group of females. Females give birth to a single pup, but are believed to have two birthing seasons per year. It has been speculated that one birthing period may occur in June and July, and a second in late summer. It is unknown whether or not females produce an offspring during both birthing periods. Pregnant females have been found between June and September. Mating behavior, gestation period, and information about weaning of the young is also unknown (Marks and Marks 2006).

All molossids are insectivorous, and the guano from one Florida bonneted bat roost included the remains of insects from several orders including beetles, flies, and true bugs. The Florida bonneted bat emerges from its roost approximately 40 minutes after sunset, which is later in the evening than most other Florida bat species. They are high, fast flyers and have been observed flying at 30 feet or higher, foraging above treetops and over open areas as noted above (Marks and Marks 2006).

The Florida bonneted bat uses echolocation to navigate, as well as to locate and capture prey. Echolocation is used by bats to determine how far away an object is, its size, shape, texture, whether it is approaching or receding, and how fast it is moving. There are five main types of bat calls: commute calls, social calls, search calls, approach calls, and feeding buzzes. Search calls are given when a bat is looking for prey and are the type of call typically used for species identification. The Florida bonneted bat is the only bat in Florida that issues search calls in the 10 to 16 kilohertz (kHz) range (with an occasional extended call range from 16 to 25 kHz), making them easy to distinguish from the other Florida bat species (personal communication with George and Cynthia Marks).

4.0 SURVEY METHODOLOGY

4.1 Survey Stations

Florida bonneted bat roosting habitat includes buildings and other artificial structures, as well as natural tree cavities. Foraging habitat includes water bodies, herbaceous wetlands, streams, tree lines, and wooded fence lines, as well as in forest canopy openings and

other open lands. The Project site was inventoried for potential Florida bonneted bat roosting and foraging habitats. Roosting and foraging stations were then selected by qualified ecologists with knowledge of bat ecology. Each survey station was photographed and located using a hand-held Global Positioning System (GPS).

4.2 Survey Equipment

Surveys were conducted using the Song Meter (SM4BAT FS) recorder by Wildlife Acoustics. The SM4BAT FS is a full-spectrum bioacoustics recorder that detects the echolocation calls of bats with a microphone and records the calls as a full spectrum sonogram. For non-linear projects, the USFWS requires a cumulative total of 16 detector nights per 20 acres of suitable habitat. Surveying with multiple detectors requires a spacing of 100 to 200 meters between recording devices. For surveys, the following weather conditions are required: 1) temperatures at or above 60 degrees Fahrenheit; 2) precipitation, including rain and/or fog, must not exceed 30 minutes or continued intermittently during the night; and 3) sustained winds no greater than nine miles per hour.

In order to capture high quality call sequences, the following guidelines were used for the placement and orientation of the SM4BAT FS: 1) elevated no less than 5 meters (16.4 feet) above ground level; 2) placed at least 1.5 meters (5 feet) away from any obstruction; 3) placed in areas without or with minimal vegetation within 10 meters (33 feet) in front of the detector microphone; and 4) detector microphone placed at a 45 degree angle from the horizon facing the target area.

4.3 Sonogram Analysis

Sonograms recorded during the surveys were sorted and identified by bat species using the Kaleidoscope 2016 software and reviewed by a qualified ecologist for Florida bonneted bat calls. Florida bonneted bat call frequencies are easily identifiable and well below those of other Florida bat species (Marks and Marks 2006).

5.0 SURVEY RESULTS

5.1 Survey Stations

Ecologists deployed six SM4BAT FS units throughout the site near potential foraging and roosting areas for up to a week at a time, over a period of six weeks. There were a total of 32 acoustic stations for the site. The acoustic stations were located within or adjacent to proposed development areas. The units were deployed 100 to 200 meters apart (Appendix C). Table 1 provides the GPS coordinates of the survey stations.

Table 1. GPS Coordinates of Florida Bonneted Bat Acoustic Station Locations

Survey Station	Coordinates
AS-1	81°30'31.829"W 26°15'48.664"N
AS-2	81°30'8.187"W 26°15'39.075"N
AS-3	81°29'42.23"W 26°15'45.399"N
AS-4	81°29'28.246"W 26°15'8.047"N
AS-5	81°29'54.037"W 26°15'19.135"N
AS-6	81°29'32.17"W 26°15'34.041"N
AS-7	81°29'32.816"W 26°16'14.233"N
AS-8	81°30'21.002"W 26°16'20.728"N
AS-9	81°29'56.326"W 26°16'48.541"N
AS-10	81°29'38.707"W 26°16'54.191"N
AS-11	81°29'26.763"W 26°16'48.858"N
AS-12	81°30'29.703"W 26°16'47.994"N
AS-13	81°29'33.146"W 26°16'35.94"N
AS-14	81°29'34.807"W 26°17'30.314"N
AS-15	81°30'10.288"W 26°17'19.444"N
AS-16	81°29'14.647"W 26°17'56.175"N
AS-17	81°28'55.615"W 26°18'6.986"N
AS-18	81°28'51.491"W 26°18'47.838"N
AS-19	81°30'15.045"W 26°18'11.871"N
AS-20	81°30'28.238"W 26°18'29.45"N
AS-21	81°30'31.643"W 26°18'44.698"N
AS-22	81°30'8.406"W 26°19'15.946"N
AS-23	81°29'17.354"W 26°18'16.37"N
AS-24	81°29'39.702"W 26°18'56.271"N
AS-25	81°29'2.511"W 26°18'59.837"N
AS-26	81°30'38.372"W 26°19'50.874"N
AS-27	81°30'26.235"W 26°19'57.151"N
AS-28	81°30'39.657"W 26°20'11.934"N
AS-30	81°30'21.88"W 26°19'42.98"N
AS-31	81°30'19.671"W 26°19'28.587"N
AS-32	81°29'4.991"W 26°19'22.612"N

The units were deployed during the months of May, June, and July 2016. The units were attached to suitable trees that were clear from obstruction and placed at least five meters (16.4 feet) off of the ground. Photographs of the acoustic stations are shown in Appendix D. A gap in the survey weeks occurred due to a malfunction in data storage. A portion of the data gathered from May 5 to June 8, 2016 for Acoustic Station Nos. 1, 4, 9, 11 through 19, and 21 through 25 was lost and additional survey weeks were completed in June and July at the affected stations to compensate.

SM4BAT FS units were programmed to begin recording 30 minutes prior to sunset until 30 minutes after sunrise and were left to record on-site. Sunrise and sunset times for the survey period are summarized in Table 2.

Table 2. Sunrise and Sunset Times for Surveys

Survey Week	Sunrise	Sunset
5/5/2016 – 5/12/2016	6:42 am	8:02 pm
5/13/2016 – 5/19/2016	6:37 am	8:05 pm
6/2/2016 – 6/8/2016	6:32 am	8:16 pm
6/9/2016 – 6/16/2016	6:32 am	8:19 pm
6/17/2016 – 6/23/2016	6:33 am	8:21 pm
7/14/2016 – 7/20/2016	6:43 am	8:20 pm
7/20/2016 – 7/28/2016	6:47 am	8:16 pm
7/28/2016 – 8/4/2016	6:51 am	8:12 pm

5.2 Weather Conditions

The hourly weather conditions during the survey nights were obtained from the SFWMD DBHYDRO Browser Station Ave Maria (Appendix E).On three of the survey nights rainfall lasting longer than 30 minutes was recorded. The rainfall never exceeded 0.16 inches and lasted a maximum of one hour. Wind speed exceeded the acceptable speed for Florida bonneted bat surveys of nine miles per hour on seven nights, although high winds never lasted longer than an hour. Temperatures dropped below 60 degrees Fahrenheit on four survey nights.

5.3 Sonogram Analysis

The Kaleidoscope 2016 software was used to analyze all sonograms collected during the survey nights. Kaleidoscope filters out all bat calls and labels them by species depending on the frequency of the call. Florida bonneted bat calls fall in the range of 10 to 17 kHz, which is significantly lower than other native bat calls. The unique frequency of Florida bonneted bat calls aids in call identification. The Kaleidoscope software categorizes sounds other than bat calls as “noise.” If the software was unsure of how to label a bat call, the file was labeled as “No ID.” After filtering the data using Kaleidoscope, all files were examined by ecologists to ensure no Florida bonneted bat calls were incorrectly labeled. Sonograms containing representative calls of bats recorded during the survey periods are included as Appendix F.

Over the survey period, 82,965 of the recordings gathered included bat calls. Thirty-eight of those calls were Florida bonneted bat calls. The Florida bonneted bat calls were recorded at Acoustic Station Nos. 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 21, and 24 (Table 3). A summary of the survey results is provided as Appendix G.

Table 3. Acoustic Stations with Florida Bonneted Bat Calls

Acoustic Station	Call	Date	Time
AS- 4	Call 1	8/4/2016	12:00 am
AS-5	Call 1	5/11/2016	1:28 am
	Call 2	5/12/2016	10:50 pm
AS-6	Call 1	5/10/2016	9:18 pm
	Call 2	5/9/2016	11:06 pm
	Call 3	5/9/2016	11:06 pm
	Call 4	5/12/2016	1:31 am
AS-7	Call 1	5/17/2016	12:12 am
	Call 2	5/16/2016	2:09 am
	Call 3	5/14/2016	2:00 am
	Call 4	5/14/2016	2:00 am
	Call 5	5/18/2016	10:12 pm
AS-8	Call 1	5/16/2016	9:53 pm
	Call 2	5/16/2016	9:53 pm
	Call 3	5/16/2016	10:34 pm
AS-9	Call 1	7/17/2016	12:40 am
	Call 2	7/17/2016	12:40 am
	Call 3	7/17/2016	12:54 am
AS-10	Call 1	5/16/2016	9:51 pm
	Call 2	5/16/2016	9:51 pm
	Call 3	5/16/2016	12:24 am
	Call 4	5/16/2016	12:25 am
	Call 5	5/16/2016	12:25 am
	Call 6	5/16/2016	12:25 am
AS-11	Call 1	7/18/2016	9:49 pm
	Call 2	7/18/2016	9:48 pm
AS-13	Call 1	7/16/2016	12:32 am
AS-15	Call 1	7/15/2016	7:12 am
	Call 2	7/15/2016	7:12 am
	Call 3	7/15/2016	7:11 am
	Call 4	7/15/2016	6:09 am
AS-21	Call 1	8/1/2016	2:34 am
AS-24	Call 1	7/24/2016	11:29 pm
	Call 2	7/24/2016	11:53 pm
	Call 3	7/24/2016	11:54 pm
	Call 4	7/28/2016	12:25 am
	Call 5	7/27/2016	10:56 pm
	Call 6	7/27/2016	10:56 pm

6.0 SUMMARY

Field work to establish the Florida bonneted bat survey stations was conducted during the months of May, June, and July 2016. These stations were established within or adjacent to potential foraging and roosting habitats. Song Meter SM4BAT FS recorders were deployed at the 32 survey stations over a period of six weeks during May, June, and July 2016. SM4BAT FS units were programmed to record 30 minutes prior to sunset until 30 minutes after sunrise. Kaleidoscope 2016 software was used to analyze the sonograms collected during the survey.

The SM4BAT detectors recorded 82,965 files containing bat calls during the survey. Of those recordings, 38 were thought to be Florida bonneted bat calls. An expert on Florida bats, Cynthia Marks, was contacted to aid in the identification process. Upon reviewing the calls, it was confirmed that all 38 calls were those of the Florida bonneted bat. The calls were recorded at Acoustic Stations 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 21, and 24.

7.0 REFERENCES

Koopman, K.F. 1971. The systematic and historical status of the Florida *Eumops* (Chiroptera: Molossidae). The American Novitates. 2478: 1-6.

Marks, C.S. and G.E. Marks. 2006. Bats of Florida. University Press of Florida, Gainesville, Florida.

Marks, G.E. and C.S. Marks. 2008a. Status of the Florida bonneted bat (*Eumops floridanus*). Supplemental report. Submitted by the Florida Bat Conservancy under grant agreement number 401815G 192. Florida Bat Conservancy. Bay Pines, Florida.

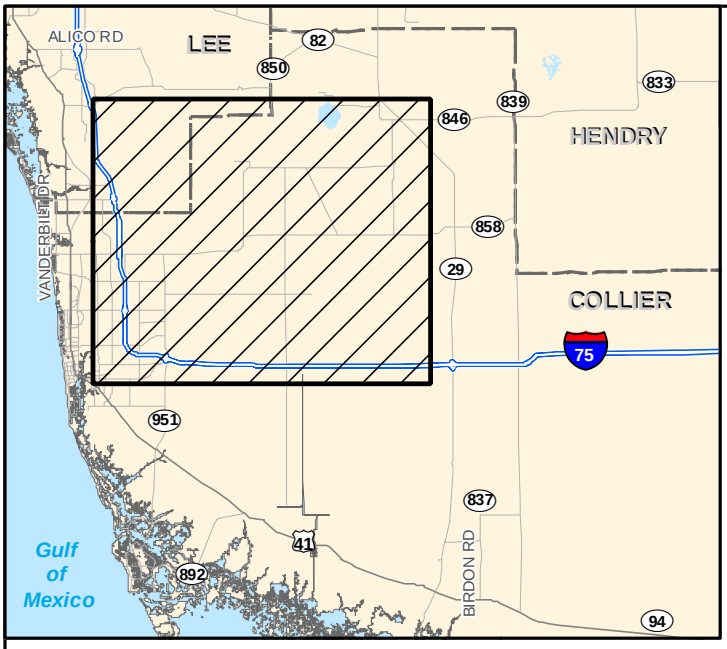
Marks, G.E. and C.S. Marks. 2008b. Status of the Florida bonneted bat (*Eumops floridanus*). Final report. Submitted by the Florida Bat Conservancy under grant agreement number 401815G 192. Florida Bat Conservancy. Bay Pines, Florida.

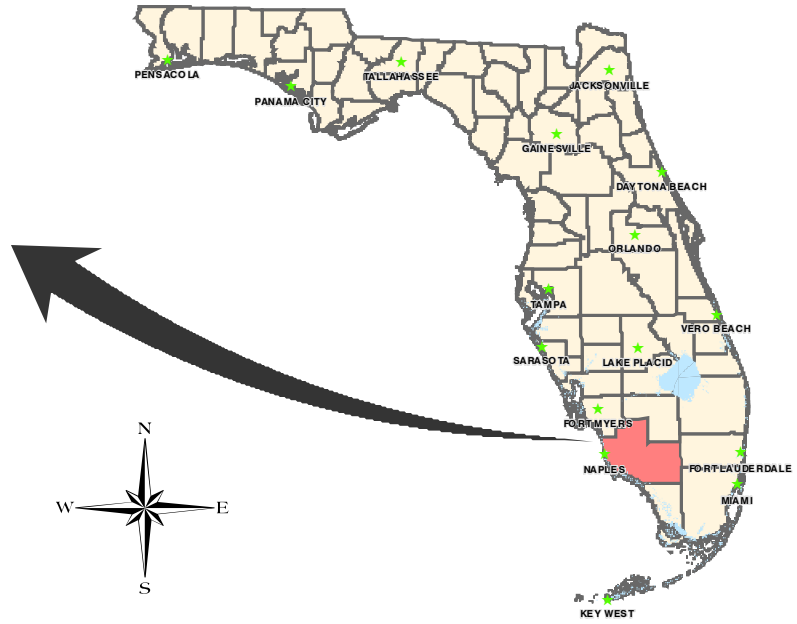
Timm, R.M., and H.H. Genoways. 2004. The Florida bonneted bat, *Eumops floridanus* (Chiroptera: Molossidae): distribution, morphometrics, systematics, and ecology. Journal of Mammalogy. 85: 852-865.

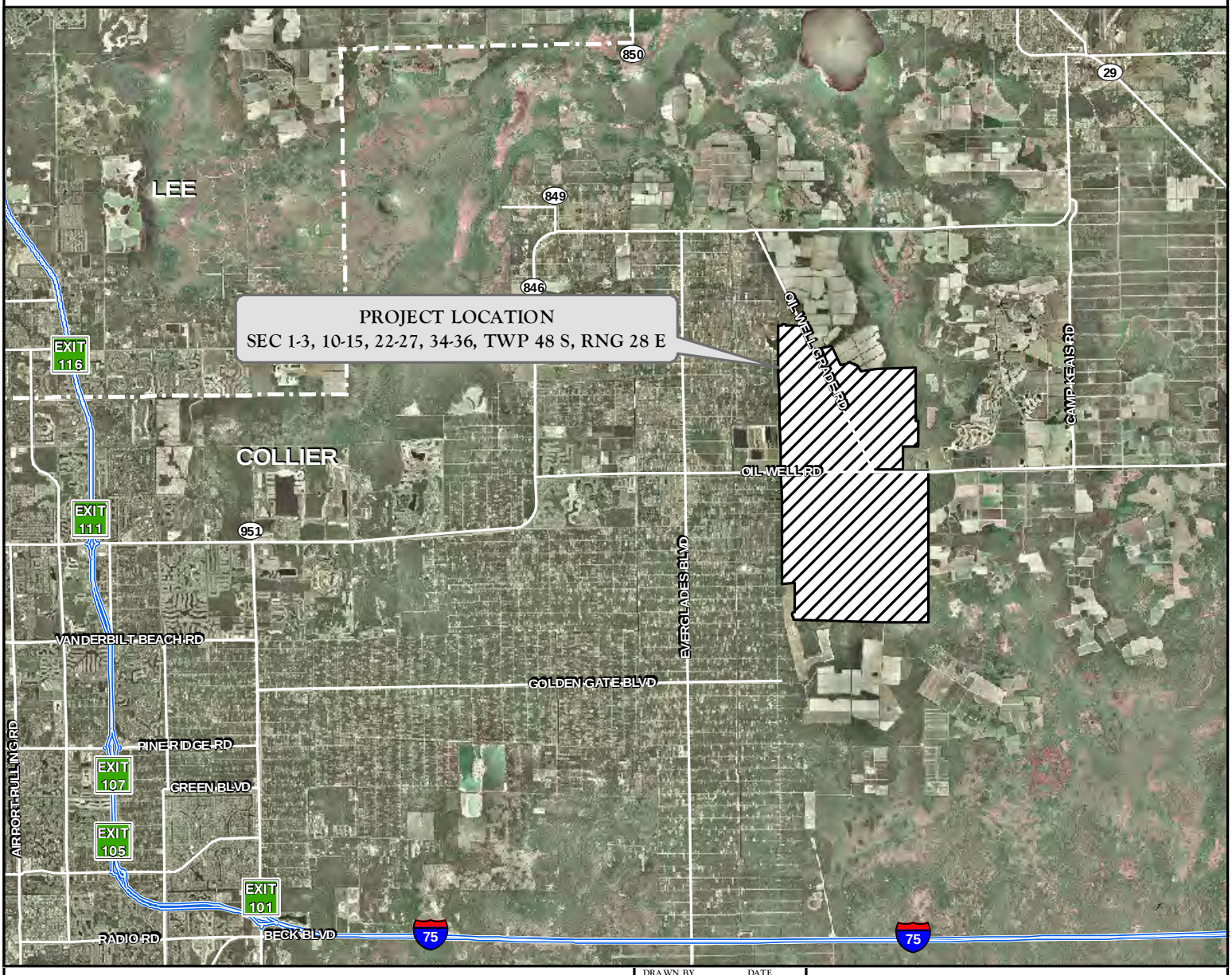
U.S. Fish and Wildlife Service. 2014. Biological Opinion for Golf Club of the Everglades. Service CPA Code 2014-CPA-0037. South Florida Ecological Services Office, Vero Beach, Florida.

APPENDIX A

PROJECT LOCATION MAP







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APPENDIX A. PROJECT LOCATION MAP
RURAL LANDS WEST

DRAWN BY	DATE
H.H.	1/25/16
REVIEWED BY	DATE
C.G.R.	1/25/16
REVISED	DATE

Passarella & Associates, Inc.
Consulting Ecologists

APPENDIX B

FLUCFCS AND COE WETLANDS MAP

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac.±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac.±
210	CROPLAND AND PASTURELAND	758.92 Ac.±
211	IMPROVED PASTURE	7.40 Ac.±
212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
262	LOW PASTURE, HYDRIC	43.36 Ac.±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac.±
422	BRAZILIAN PEPPER	42.76 Ac.±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac.±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac.±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac.±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac.±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac.±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac.±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac.±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac.±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac.±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac.±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\2016\FBB Acoustic Report\App B Aerial with COE FLUCFCS and Wetlands Map 022217.dwg Tab: Northwest Jun 21, 2017 - 3:54pm Plotted by: THONES

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
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Fax (239) 274-0069

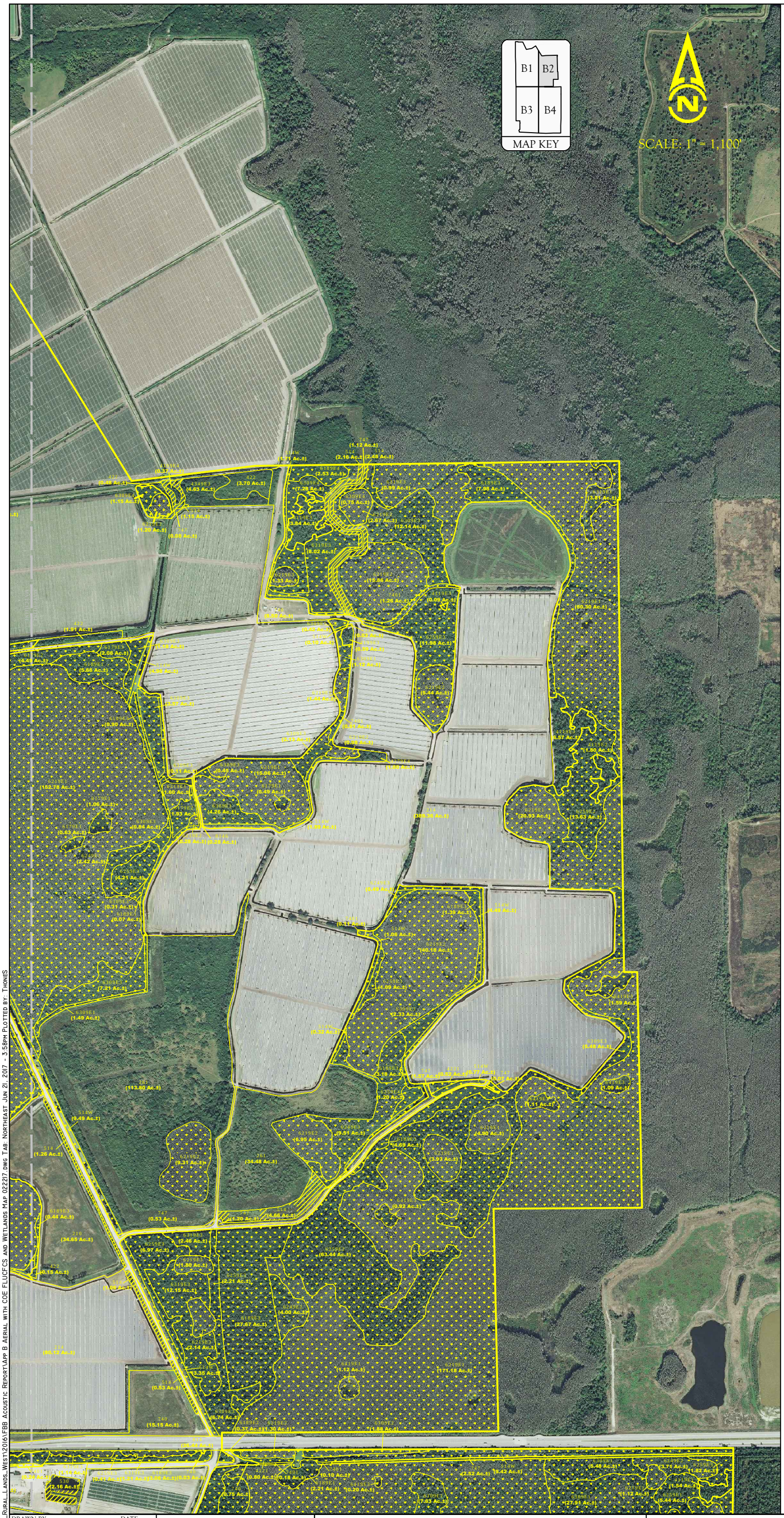
PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX B1



LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac.±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac.±
210	CROPLAND AND PASTURELAND	758.92 Ac.±
211	IMPROVED PASTURE	7.40 Ac.±
212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
262	LOW PASTURE, HYDRIC	43.36 Ac.±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac.±
422	BRAZILIAN PEPPER	42.76 Ac.±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac.±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac.±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac.±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac.±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac.±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac.±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac.±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac.±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac.±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac.±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\2016\FBB Acoustic Report\App B Aerial with COE FLUCFCS and Wetlands Map 022217.dwg Tab: Northeast Jun 21, 2017 - 3:58pm Plotted by: Thones

DRAWN BY	H.H.
DATE	7/26/16
REVIEWED BY	H.P.
DATE	7/26/16
REVISED	
DATE	

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX B2

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

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214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
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3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
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4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
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4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
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4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
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6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
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6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
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6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
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6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
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6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
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FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\2016\FBB ACOUSTIC REPORT\APP B AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHWEST JUN 21, 2017 - 4:00PM PLOTTED BY: THONES

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

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PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX B3

SCALE: 1" = 1,100'

MAP KEY

B1 | B2

B3 | B4

LEGEND:

COE WETLANDS (4,475.95 Ac.±)

COE ISOLATED WETLANDS (14.71 Ac.±)

COE "WATERS OF THE U.S." (34.25 Ac.±)

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6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KP15JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\2016\FBB Acoustic Report\App B Aerial with COE FLUCFCS and Wetlands Map 022217.dwg Tab: Southeast Jun 21, 2017 - 4:03pm Plotted by: Thones

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

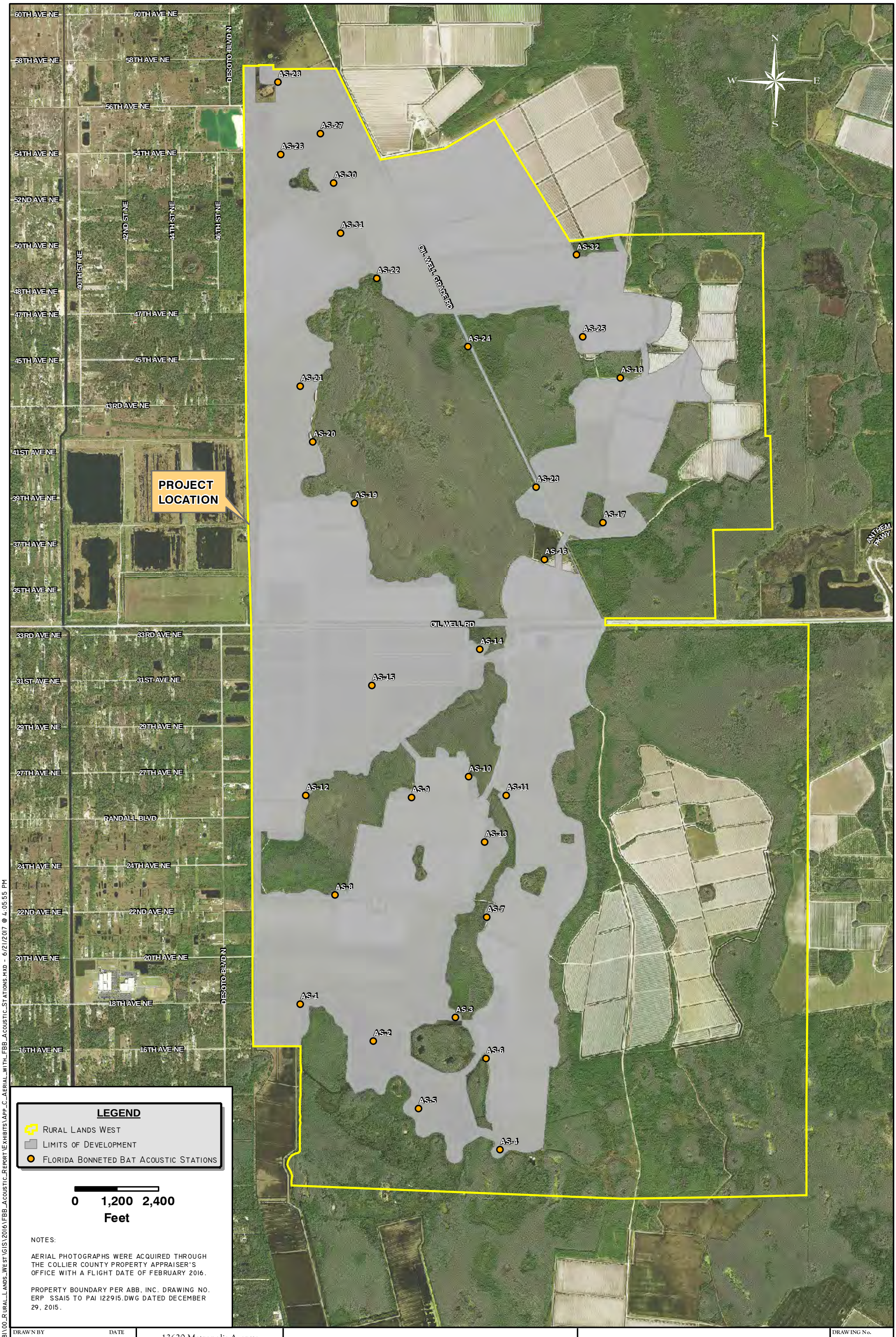
AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX B4

APPENDIX C

AERIAL WITH ACOUSTIC STATIONS



LEGEND

- Rural Lands West
- Limits of Development
- Florida Bonneted Bat Acoustic Stations

0 1,200 2,400
Feet

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF FEBRUARY 2016.

PROPERTY BOUNDARY PER ABB, INC. DRAWING NO. ERP SSAI5 TO PAI I22915.DWG DATED DECEMBER 29, 2015.

DRAWN BY	H.H.
DATE	8/29/16
REVIEWED BY	K.C.P.
DATE	8/29/16
REVISED	
DATE	

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

Passarella & Associates, Inc.

RURAL LANDS WEST
AERIAL WITH ACOUSTIC STATIONS

DRAWING No. 05CEM1481

SHEET No. APPENDIX C

J:\2005\05cem1481\00_Rural_Lands_West\GIS\2016\FBB_Acoustic_Report\Exhibits\App_C_Aerial_with_FBB_Acoustic_Stations.mxd - 6/21/2017 @ 4:05:55 PM

APPENDIX D

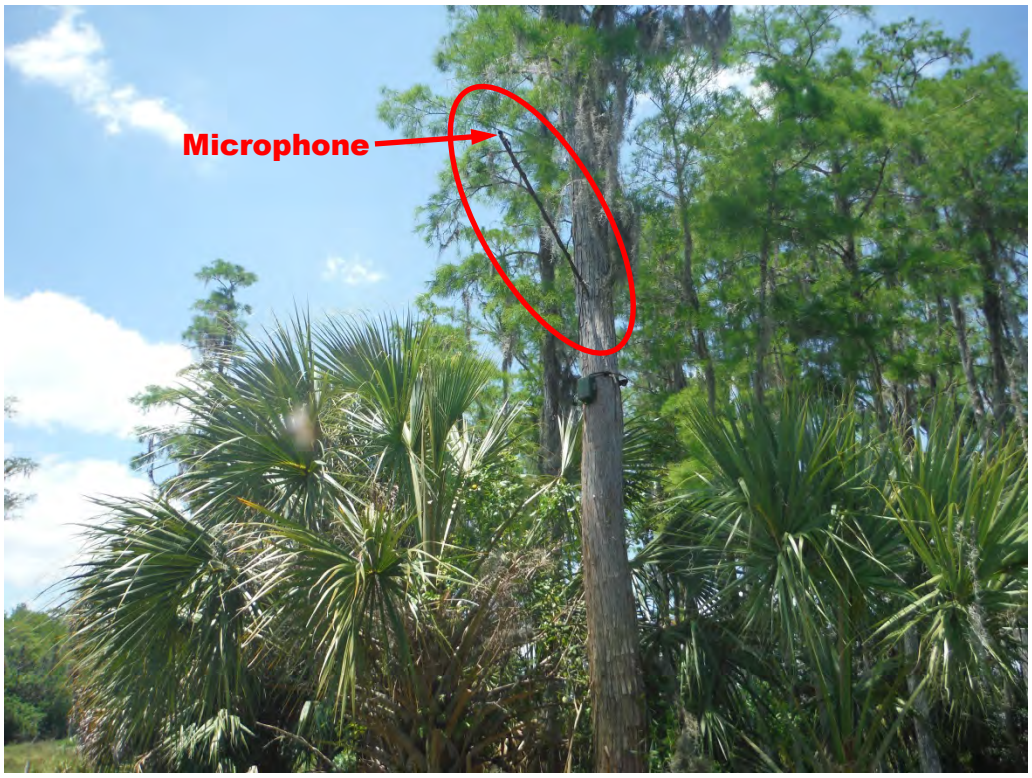
PHOTOGRAPHS OF SURVEY STATIONS

AS-1

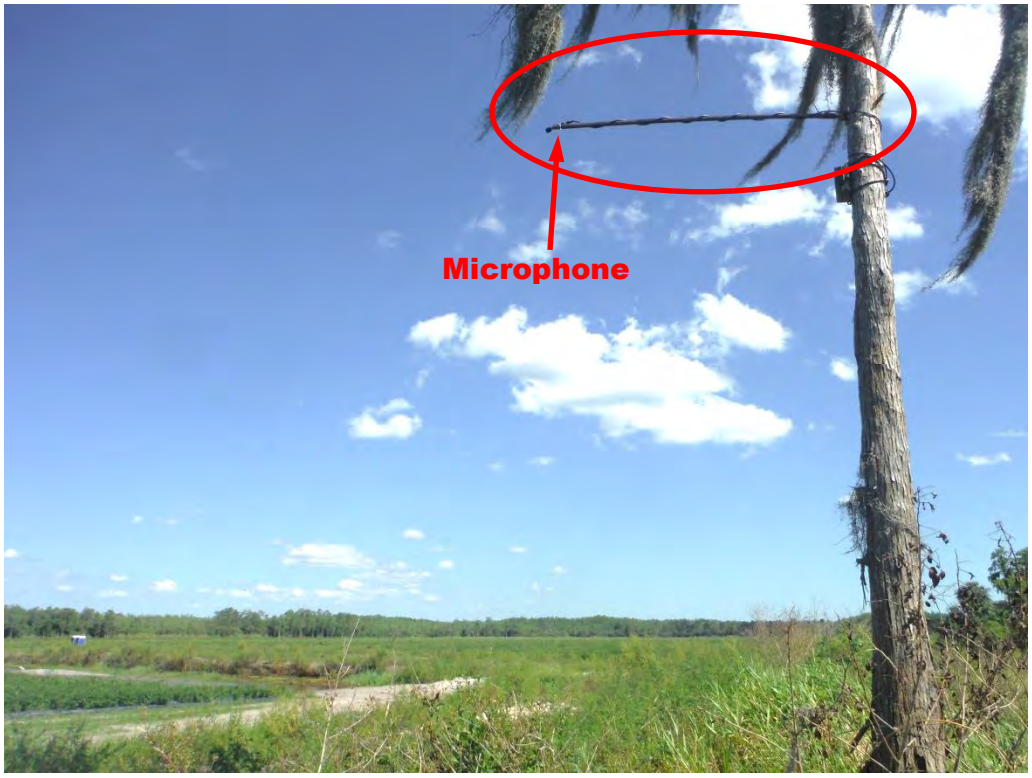
AS-2

AS-3

AS-4



AS-5



AS-6

AS-7

AS-8

AS-9

AS-10

AS-11

AS-12

AS-13

AS-14

AS-15

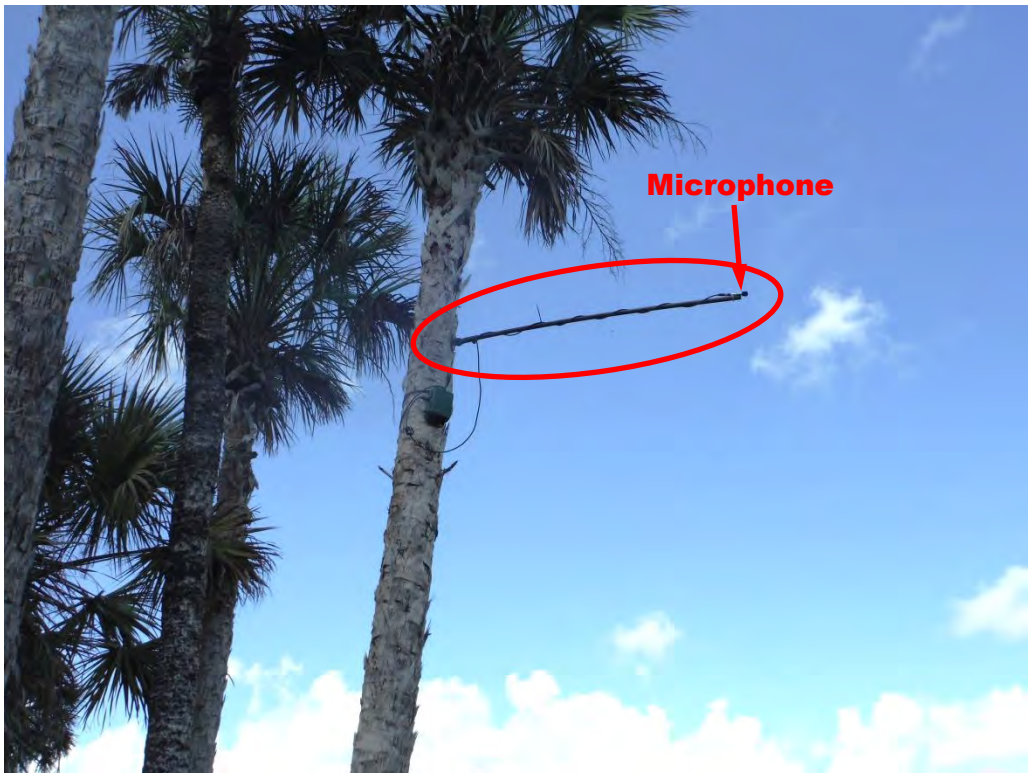
AS-16

AS-17

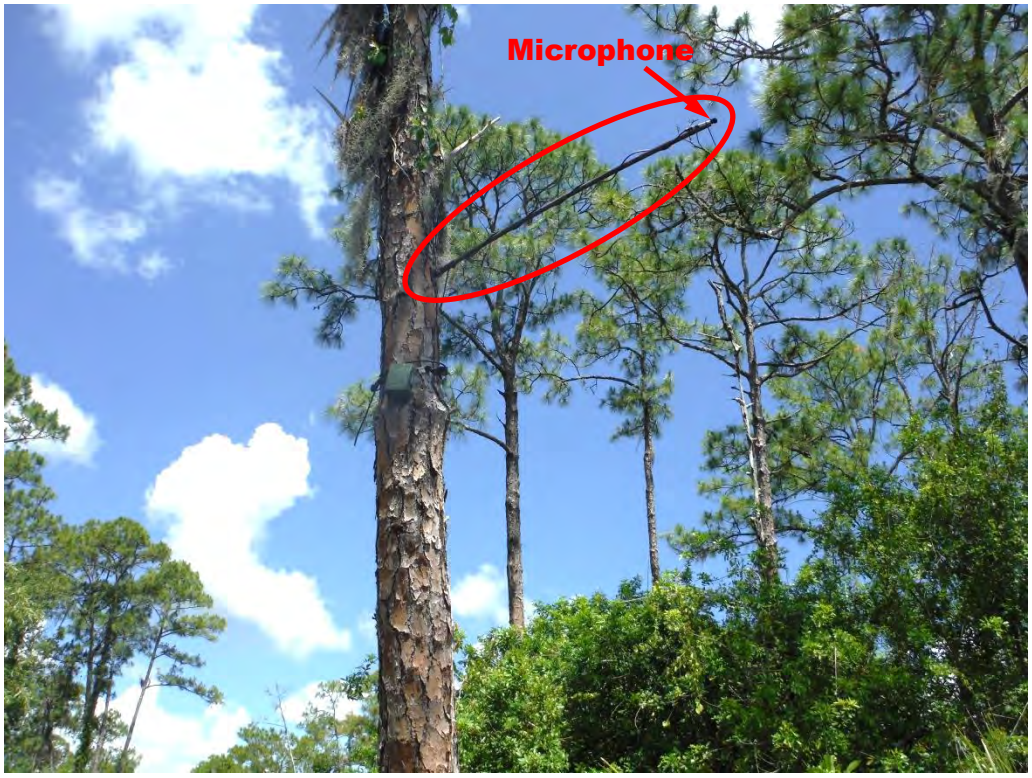
AS-18

AS-19

AS-20



AS-21



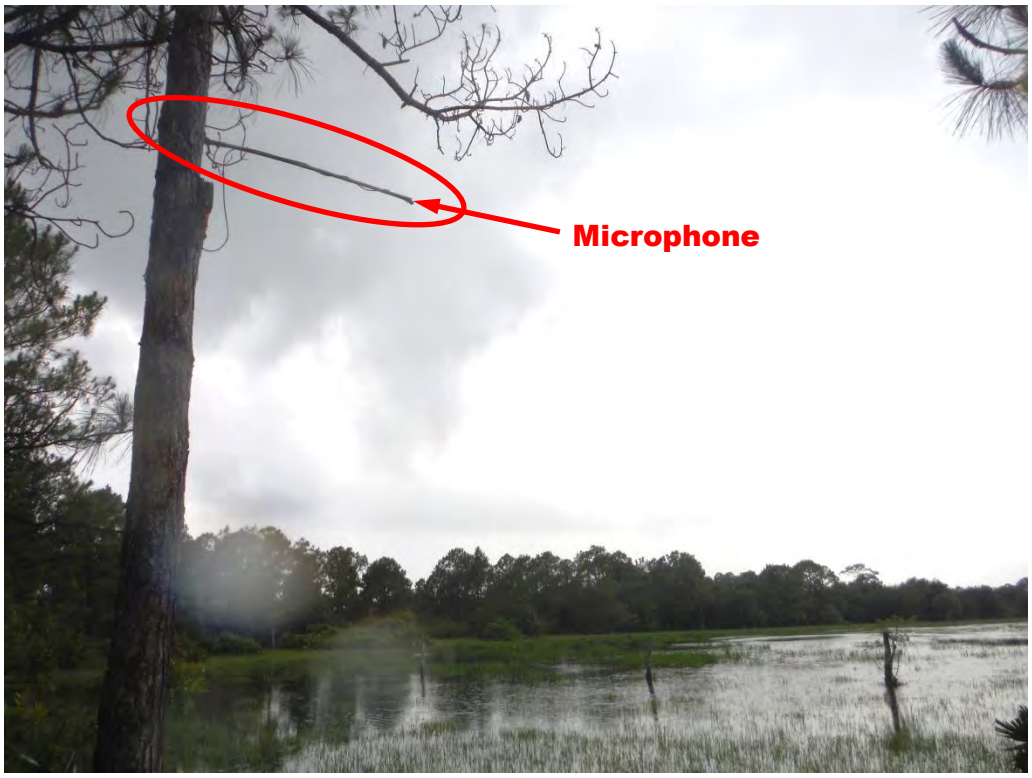
AS-22

AS-23

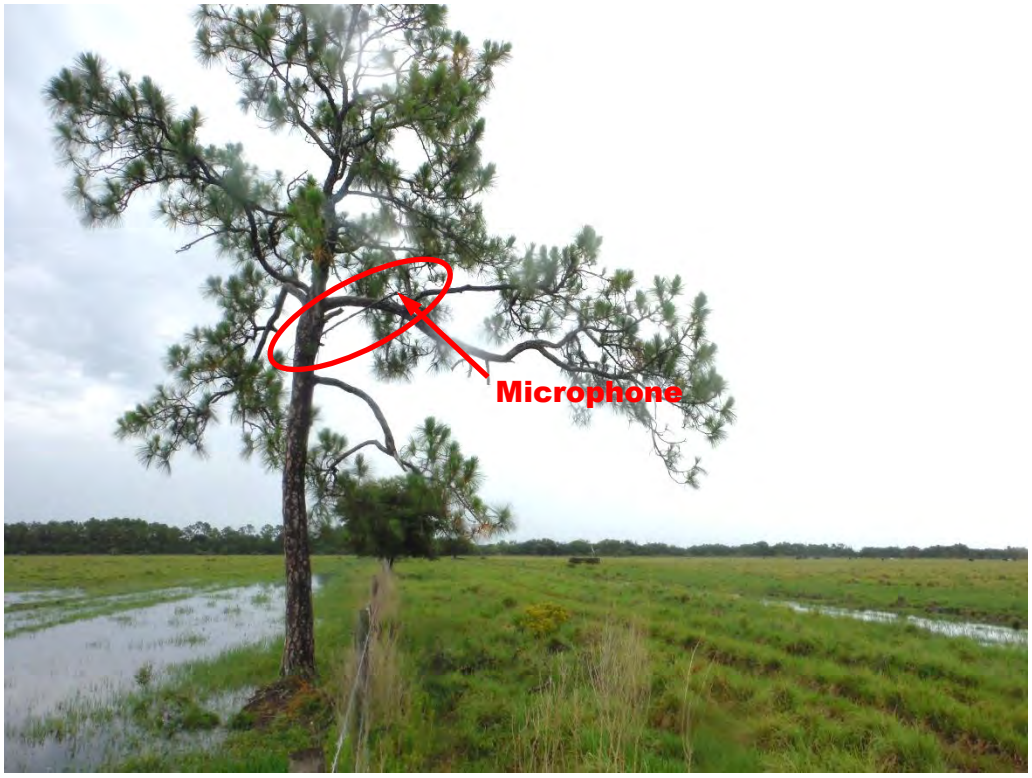
AS-24

AS-25

AS-26



AS-27



AS-28

AS-29

AS-30

AS-30

APPENDIX E

WEATHER CONDITIONS DURING SURVEY NIGHTS

RURAL LANDS WEST
FLORIDA BONNETED BAT ACOUSTIC SURVEY
WEATHER CONDITIONS DURING SURVEY NIGHTS

Survey Night	Date	Hour	Wind	Temperature	Precipitation
1	05/05/16 to 05/06/16	7:32 PM	3.17	69.1 °F	None
		8:32 PM	2.97	68.9 °F	None
		9:32 PM	1.98	67.4 °F	None
		10:32 PM	2.76	65.2 °F	None
		11:32 PM	1.84	64.7 °F	None
		12:32 PM	4.86	65.9 °F	None
		1:32 AM	4.22	64.4 °F	None
		2:32 AM	2.42	62.0 °F	None
		3:32 AM	1.97	59.8 °F	None
		4:32 AM	0.21	59.3 °F	None
		5:32 AM	0.27	58.1 °F	None
		6:32 AM	1.07	59.3 °F	None
		7:12 AM	6.8	63.7 °F	None
2	05/06/16 to 05/07/16	7:32 PM	4.91	67.2 °F	None
		8:32 PM	5.37	64.8 °F	None
		9:32 PM	4.21	63.2 °F	None
		10:32 PM	2.11	62.2 °F	None
		11:32 PM	4.56	60.9 °F	None
		12:32 PM	6.06	61.1 °F	None
		1:32 AM	6.48	60.0 °F	None
		2:32 AM	4.9	59.0 °F	None
		3:32 AM	3.18	57.2 °F	None
		4:32 AM	0.09	53.4 °F	None
		5:32 AM	1.82	51.7 °F	None
		6:32 AM	1.56	53.2 °F	None
		7:12 AM	1.21	58.8 °F	None
3	05/07/16 to 05/08/16	7:32 PM	4.48	68.6°F	None
		8:32 PM	3.46	69.0 °F	None
		9:32 PM	1.52	63.6 °F	None
		10:32 PM	2.76	60.8 °F	None
		11:32 PM	3.6	61.6 °F	None
		12:32 PM	1.06	56.8 °F	None
		1:32 AM	0.58	57.7 °F	None
		2:32 AM	3.22	55.9 °F	None
		3:32 AM	2.55	55.0 °F	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
3 (Cont.)	05/07/16 to 05/08/16	4:32 AM	3.42	54.1 °F	None
		5:32 AM	2.72	53.7 °F	None
		6:32 AM	0.11	56.9 °F	None
		7:12 AM	2.52	62.7 °F	None
4	05/08/16 to 05/09/16	7:32 PM	3.86	73.7 °F	None
		8:32 PM	6.22	69.0 °F	None
		9:32 PM	2.49	65.4 °F	None
		10:32 PM	0.37	63.6 °F	None
		11:32 PM	2.35	61.6 °F	None
		12:32 PM	1.06	59.5 °F	None
		1:32 AM	1.68	58.1	None
		2:32 AM	2.96	57.5	None
		3:32 AM	3.1	56.3	None
		4:32 AM	2.21	55.8	None
		5:32 AM	1.22	54.5	None
		6:32 AM	0.86	57.9	None
		7:12 AM	2.23	62.7	None
5	05/09/16 to 05/10/16	7:32 PM	7.54	73.9	None
		8:32 PM	5.87	70.6	None
		9:32 PM	9.83	70.0	None
		10:32 PM	6.81	68.5	None
		11:32 PM	4.18	65.6	None
		12:32 PM	2.88	65.3	None
		1:32 AM	4.06	63.3	None
		2:32 AM	4.15	62.7	None
		3:32 AM	3.03	61.6	None
		4:32 AM	4.93	61.9	None
		5:32 AM	5.1	63.6	None
		6:32 AM	3.72	64.9	None
		7:12 AM	4.85	69.0	None
6	05/10/16 to 05/11/16	7:32 PM	5.57	76.9	None
		8:32 PM	10.27	76.7	None
		9:32 PM	11.18	74.8	None
		10:32 PM	8.24	72.8	None
		11:32 PM	5.01	70.1	None
		12:32 PM	3.68	68.3	None
		1:32 AM	3.72	67.2	None
		2:32 AM	2.94	65.1	None
		3:32 AM	4.1	65.0	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
6 (Cont.)	05/10/16 to 05/11/16	4:32 AM	1.93	64.9	None
		5:32 AM	2.06	64.4	None
		6:32 AM	3.68	64.5	None
		7:12 AM	2.66	66.9	None
7	05/11/16 to 05/12/16	7:32 PM	8.22	77.2	None
		8:32 PM	7.4	74.9	None
		9:32 PM	7.39	72.7	None
		10:32 PM	5.42	70.8	None
		11:32 PM	2.59	68.6	None
		12:32 PM	3.12	65.8	None
		1:32 AM	1.17	65.6	None
		2:32 AM	3.42	64.7	None
		3:32 AM	3.48	63.8	None
		4:32 AM	0.79	64.2	None
		5:32 AM	0.31	63.1	None
		6:32 AM	0.88	64.9	None
		7:12 AM	2.96	67.5	None
8	05/13/16 to 05/14/16	7:35 PM	3.74	76.1	None
		8:35 PM	3.52	74.6	None
		9:35 PM	0.68	72.3	None
		10:35 PM	0.34	72.4	None
		11:35 PM	4.13	70.8	None
		12:35 PM	1.92	70.0	None
		1:35 AM	0.65	68.2	None
		2:35 AM	1.5	68.1	None
		3:35 AM	0.71	67.7	None
		4:35 AM	0.09	63.1	None
		5:35 AM	2.61	63.6	None
		6:35 AM	0.71	65.1	None
		7:07 AM	1.25	69.5	None
9	05/14/16 to 05/15/16	7:35 PM	3.93	75.3	None
		8:35 PM	3.24	73.2	None
		9:35 PM	3.31	71.5	None
		10:35 PM	2.85	70.6	None
		11:35 PM	2.28	70.3	None
		12:35 PM	1.06	69.9	None
		1:35 AM	2.39	68.1	None
		2:35 AM	1.65	67.8	None
		3:35 AM	2.4	67.5	None
		4:35 AM	2.72	68.1	None
		5:35 AM	1.82	66.4	None
		6:35 AM	2.82	68.2	None
		7:07 AM	5.63	71.9	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
10	05/15/16 to 05/16/16	7:35 PM	3.51	77.1	None
		8:35 PM	3.84	73.8	None
		9:35 PM	3.43	72.8	None
		10:35 PM	3.65	70.1	None
		11:35 PM	1.08	70.8	None
		12:35 PM	2.4	70.0	None
		1:35 AM	2.15	68.6	None
		2:35 AM	1.3	68.2	None
		3:35 AM	1.44	67.7	None
		4:35 AM	2.88	66.3	None
		5:35 AM	1.36	66.3	None
		6:35 AM	1.11	67.6	None
		7:07 AM	2.47	69.7	None
11	5/16/16 to 5/17/16	7:35 PM	5.36	77.5	None
		8:35 PM	7.47	77.1	None
		9:35 PM	6.49	75.3	None
		10:35 PM	5.86	74.1	None
		11:35 PM	6.76	73.2	None
		12:35 PM	4.83	73.1	None
		1:35 AM	2.65	71.9	None
		2:35 AM	3.19	70.8	None
		3:35 AM	3.07	70.4	None
		4:35 AM	3.63	70.4	None
		5:35 AM	4.51	71.1	None
		6:35 AM	5.84	72.6	None
		7:07 AM	3.68	73.7	None
12	5/17/18 to 5/18/16	7:35 PM	8.37	75.0	None
		8:35 PM	6.02	74.0	None
		9:35 PM	5.9	73.5	None
		10:35 PM	12.73	73.5	None
		11:35 PM	6.72	70.1	None
		12:35 PM	2.66	70.6	None
		1:35 AM	3.74	70.3	None
		2:35 AM	2.16	70.7	None
		3:35 AM	1.47	70.8	None
		4:35 AM	4.56	69.5	None
		5:35 AM	2.51	68.9	None
		6:35 AM	1.4	69.7	None
		7:07 AM	2.93	70.4	None
13	5/18/16 to 5/19/16	7:35 PM	8.37	75.0	None
		8:35 PM	6.02	74.0	None
		9:35 PM	5.9	73.5	None
		10:35 PM	12.73	73.5	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
13 (Cont.)	5/18/16 to 5/19/16	11:35 PM	6.72	70.1	0.46
		12:35 PM	2.66	70.6	0.06
		1:35 AM	3.74	70.3	None
		2:35 AM	2.16	70.7	None
		3:35 AM	1.47	70.8	None
		4:35 AM	4.56	69.5	None
		5:35 AM	2.51	68.9	None
		6:35 AM	1.4	69.7	None
		7:07 AM	2.93	70.4	None
14	6/2/16 to 6/3/16	7:46 PM	1.81	73.2	None
		8:46 PM	4.71	73.6	None
		9:46 PM	2.84	73.2	None
		10:46 PM	2.4	73.3	None
		11:46 PM	3.08	73.1	None
		12:46 PM	2.91	72.9	None
		1:46 AM	1.23	72.1	None
		2:46 AM	4.41	71.6	None
		3:46 AM	2.34	71.5	None
		4:46 AM	0.91	71.8	None
		5:46 AM	2.17	71.3	None
		6:46 AM	3.13	74.2	None
		7:02 AM	3.63	75.2	None
15	6/3/16 to 6/4/16	7:46 PM	8.09	73.8	None
		8:46 PM	4.91	73.7	None
		9:46 PM	2.08	73.3	None
		10:46 PM	5.12	73.7	None
		11:46 PM	3.34	72.8	None
		12:46 PM	1.99	72.8	None
		1:46 AM	1.05	72.0	None
		2:46 AM	5.84	71.7	None
		3:46 AM	4.55	71.1	None
		4:46 AM	1.46	71.2	None
		5:46 AM	2.7	70.8	None
		6:46 AM	4.06	73.5	None
		7:02 AM	5	74.1	None
16	6/4/16 to 6/5/16	7:46 PM	3.05	75.6	None
		8:46 PM	2.63	75.6	None
		9:46 PM	6.24	75.3	None
		10:46 PM	4.04	74.6	None
		11:46 PM	3.6	73.9	None
		12:46 PM	1.86	72.9	None
		1:46 AM	2.51	72.3	None
		2:46 AM	1.63	72.2	None
		3:46 AM	2.93	72.4	None
		4:46 AM	3.71	72.2	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
16 (Cont.)	6/4/16 to 6/5/16	5:46 AM	3.6	72.3	None
		6:46 AM	4.16	73.7	None
		7:02 AM	4.06	74.8	None
17	6/5/16 to 6/6/16	7:46 PM	8.23	76.6	None
		8:46 PM	7.39	75.4	None
		9:46 PM	5.3	75.6	None
		10:46 PM	4.54	75.9	None
		11:46 PM	5.2	77.0	None
		12:46 PM	3.93	76.6	None
		1:46 AM	3.48	77.1	None
		2:46 AM	5.17	77.4	None
		3:46 AM	5.42	77.5	None
		4:46 AM	6.17	77.5	None
		5:46 AM	6.63	77.7	None
		6:46 AM	7.49	77.9	None
		7:02 AM	7.77	78.0	None
18	6/6/16 to 6/7/16	7:46 PM	7.16	76.3	None
		8:46 PM	7.47	76.4	None
		9:46 PM	6.84	76.8	None
		10:46 PM	3.55	76.9	None
		11:46 PM	8.85	77.9	0.03
		12:46 PM	8.71	78.4	None
		1:46 AM	12	77.7	None
		2:46 AM	8.59	77.0	None
		3:46 AM	8.29	78.2	None
		4:46 AM	9.06	78.5	None
		5:46 AM	10.57	78.0	None
		6:46 AM	8.28	78.8	None
		7:02 AM	8.27	79.3	None
19	6/7/16 to 6/8/16	7:46 PM	3.75	79.5	None
		8:46 PM	3.51	78.2	None
		9:46 PM	6.69	77.5	None
		10:46 PM	10	77.7	None
		11:46 PM	8.18	76.9	None
		12:46 PM	5.57	76.3	None
		1:46 AM	3.41	76.0	0.01
		2:46 AM	2.71	75.7	None
		3:46 AM	1.97	75.6	None
		4:46 AM	1.23	75.3	None
		5:46 AM	1.46	74.7	None
		6:46 AM	4.51	75.9	None
		7:02 AM	4.88	76.4	None
20	6/9/16 to 6/10/16	7:49 PM	1.28	73.1	None
		8:49 PM	2.14	73.1	None
		9:49 PM	3.23	73.2	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
20 (Cont.)	6/9/16 to 6/10/16	10:49 PM	3.76	73.1	None
		11:49 PM	4.06	73.0	None
		12:49 PM	5.36	73.2	None
		1:49 AM	4.06	73.7	None
		2:49 AM	3.45	74.0	None
		3:49 AM	2.2	74.2	None
		4:49 AM	1.95	74.2	None
		5:49 AM	1.96	74.2	None
		6:49 AM	2.12	74.5	None
		7:02 AM	2.91	74.7	None
21	6/10/16 to 6/11/16	7:49 PM	0.54	76.3	None
		8:49 PM	3.37	75.3	None
		9:49 PM	3.3	74.9	None
		10:49 PM	1.73	74.6	None
		11:49 PM	1.83	74.3	None
		12:49 PM	0.95	74.1	None
		1:49 AM	0.1	73.5	None
		2:49 AM	2.56	73.1	None
		3:49 AM	0.1	72.3	None
		4:49 AM	4.58	72.3	None
		5:49 AM	3.47	72.1	None
		6:49 AM	4.53	73.9	None
		7:02 AM	5.7	75.1	None
22	6/11/16 to 6/12/16	7:49 PM	1.68	75.5	None
		8:49 PM	2.57	74.9	None
		9:49 PM	2.13	75.1	None
		10:49 PM	1.25	75.1	None
		11:49 PM	2.56	74.9	None
		12:49 PM	2.32	74.3	None
		1:49 AM	2.12	74.2	None
		2:49 AM	2.07	74.0	None
		3:49 AM	1.66	73.7	None
		4:49 AM	0.35	73.4	None
		5:49 AM	6.28	73.7	None
		6:49 AM	4.33	74.0	None
		7:02 AM	4.01	74.3	None
22	6/12/16 to 6/13/16	7:49 PM	3.92	74.5	0.03
		8:49 PM	4.52	74.3	None
		9:49 PM	2.83	74.8	0.01
		10:49 PM	2.37	74.9	None
		11:49 PM	2.45	74.0	None
		12:49 PM	0.09	73.5	None
		1:49 AM	2.02	74.0	None
		2:49 AM	0.87	73.1	None
		3:49 AM	0.14	73.1	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
22 (Cont.)	6/12/16 to 6/13/16	4:49 AM	0.97	73.5	None
		5:49 AM	0.09	72.9	None
		6:49 AM	2.02	75.5	None
		7:02 AM	2.43	76.5	None
23	6/13/16 to 6/14/16	7:49 PM	1.79	80.9	None
		8:49 PM	1.45	79.8	None
		9:49 PM	4.91	78.4	None
		10:49 PM	3.7	77.3	None
		11:49 PM	0.99	77.6	None
		12:49 PM	2.09	76.3	None
		1:49 AM	2.07	76.1	None
		2:49 AM	2.08	76.2	None
		3:49 AM	1.55	75.3	None
		4:49 AM	0.09	74.9	None
		5:49 AM	0.07	74.3	None
		6:49 AM	1.73	76.7	None
		7:02 AM	0.77	77.8	None
24	6/14/16 to 6/15/16	7:49 PM	1.86	79.7	None
		8:49 PM	8.38	79.4	None
		9:49 PM	17.44	73.7	None
		10:49 PM	3.77	71.9	0.86
		11:49 PM	6.27	73.5	None
		12:49 PM	3.48	73.4	None
		1:49 AM	0.75	72.9	None
		2:49 AM	1.13	73.0	None
		3:49 AM	0.39	73.3	None
		4:49 AM	1.23	73.1	None
		5:49 AM	0.31	72.9	None
		6:49 AM	1.59	75.3	None
		7:02 AM	1.4	76.7	None
25	6/15/16 to 6/16/16	7:49 PM	4.42	80.2	None
		8:49 PM	2.49	77.5	None
		9:49 PM	2.38	77.1	None
		10:49 PM	2.52	76.8	None
		11:49 PM	1.45	76.3	None
		12:49 PM	3.3	75.5	None
		1:49 AM	0.33	74.8	None
		2:49 AM	0.85	75.2	None
		3:49 AM	1.09	75.0	None
		4:49 AM	1.58	74.4	None
		5:49 AM	1.02	74.3	None
		6:49 AM	1.83	76.4	None
		7:02 AM	2.54	77.4	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
26	6/17/16 to 6/18/16	7:51 PM	1.64	76.1	None
		8:51 PM	2.45	74.9	None
		9:51 PM	1.35	74.5	None
		10:51 PM	1.82	74.2	None
		11:51 PM	0.45	73.9	None
		12:51 PM	2.89	74.7	None
		1:51 AM	2.65	75.6	None
		2:51 AM	3.12	75.0	None
		3:51 AM	1.56	73.5	None
		4:51 AM	0.69	74.1	None
		5:51 AM	2.79	74.6	None
		6:51 AM	1.43	75.8	None
		7:03 AM	0.39	76.5	None
27	6/18/16 to 6/19/16	7:51 PM	3.97	80.3	None
		8:51 PM	8.65	78.7	None
		9:51 PM	6.32	71.9	None
		10:51 PM	4.75	71.3	0.03
		11:51 PM	2.69	71.5	None
		12:51 PM	2.6	71.3	None
		1:51 AM	0.28	71.7	None
		2:51 AM	2.06	71.3	None
		3:51 AM	2.38	71.1	None
		4:51 AM	2.53	70.8	None
		5:51 AM	2.12	71.2	None
		6:51 AM	4.41	72.7	None
		7:03 AM	3.84	72.8	None
28	6/19/16 to 6/20/16	7:51 PM	7.71	76.8	None
		8:51 PM	9.54	75.5	None
		9:51 PM	8.11	74.8	None
		10:51 PM	7.56	73.4	None
		11:51 PM	8.38	72.9	None
		12:51 PM	5.97	72.6	None
		1:51 AM	5.65	71.3	None
		2:51 AM	5.51	71.1	None
		3:51 AM	6	71.3	None
		4:51 AM	8.6	71.1	None
		5:51 AM	6.4	70.8	None
		6:51 AM	5.85	73.3	None
		7:03 AM	6.99	74.3	None
29	6/20/16 to 6/21/16	7:51 PM	7.87	76.0	None
		8:51 PM	6.22	73.8	None
		9:51 PM	6.1	72.0	None
		10:51 PM	6.71	70.6	None
		11:51 PM	6.44	70.3	None
		12:51 PM	5.99	69.6	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
29 (Cont.)	6/20/16 to 6/21/16	1:51 AM	5.68	69.5	None
		2:51 AM	5.06	68.9	None
		3:51 AM	5.75	67.7	None
		4:51 AM	3.85	66.8	None
		5:51 AM	5.14	67.0	None
		6:51 AM	5.75	71.5	None
		7:03 AM	6.37	72.2	None
30	6/21/16 to 6/22/16	7:51 PM	6.1	77.4	None
		8:51 PM	5.72	76.8	None
		9:51 PM	7.9	76.4	None
		10:51 PM	6.55	74.8	None
		11:51 PM	4.31	73.9	None
		12:51 PM	3.05	72.8	None
		1:51 AM	4.15	71.6	None
		2:51 AM	2.91	71.1	None
		3:51 AM	2.25	70.8	None
		4:51 AM	3.27	70.4	None
		5:51 AM	2.87	70.4	None
		6:51 AM	3.83	73.8	None
		7:03 AM	4.01	74.6	None
31	6/22/16 to 6/23/16	7:51 PM	0.72	77.2	None
		8:51 PM	0.39	76.4	None
		9:51 PM	0.62	76.0	None
		10:51 PM	3.1	75.7	None
		11:51 PM	2.13	75.9	None
		12:51 PM	2.4	74.9	None
		1:51 AM	2.44	74.1	None
		2:51 AM	2.32	73.8	None
		3:51 AM	1.11	73.3	None
		4:51 AM	1.25	73.2	None
		5:51 AM	0.51	72.5	None
		6:51 AM	1.41	75.5	None
		7:03 AM	2.28	76.5	None
32	7/14/16 to 7/15/16	7:50 PM	1.77	77.2	None
		8:50 PM	1.57	77.0	None
		9:50 PM	2.74	76.5	None
		10:50 PM	2.78	75.6	None
		11:50 PM	0.82	74.9	None
		12:50 PM	2.36	74.5	None
		1:50 AM	3.48	74.2	None
		2:50 AM	3.49	73.9	None
		3:50 AM	2.97	73.2	None
		4:50 AM	3.19	73.7	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
32 (Cont.)	7/14/16 to 7/15/16	5:50 AM	2.52	72.5	None
		6:50 AM	2.85	73.7	None
		7:13 AM	3.74	76.3	None
33	7/15/16 to 7/16/16	7:50 PM	2.91	78.0	None
		8:50 PM	1.03	77.3	None
		9:50 PM	0.52	77.2	None
		10:50 PM	2.48	76.7	None
		11:50 PM	2.83	75.7	None
		12:50 PM	3.59	74.6	None
		1:50 AM	3.9	74.6	None
		2:50 AM	3.3	74.7	None
		3:50 AM	2.89	74.0	None
		4:50 AM	5.35	73.8	None
		5:50 AM	6.18	73.3	None
		6:50 AM	5.81	75.5	None
		7:15 AM	6.24	78.0	None
34	7/16/16 to 7/17/16	7:50 PM	4.11	73.1	None
		8:50 PM	5.28	72.8	None
		9:50 PM	4.74	72.6	None
		10:50 PM	2.97	72.6	None
		11:50 PM	3.28	72.7	None
		12:50 PM	0.4	72.2	None
		1:50 AM	2.34	72.0	None
		2:50 AM	4.3	72.6	None
		3:50 AM	4.21	72.4	None
		4:50 AM	4.4	72.4	None
		5:50 AM	6.04	73.2	None
		6:50 AM	2.6	75.7	None
		7:15 AM	4.88	77.1	None
35	7/17/16 to 7/18/16	7:50 PM	6.22	76.7	None
		8:50 PM	4.37	76.3	None
		9:50 PM	3.76	75.7	None
		10:50 PM	2.67	75.9	None
		11:50 PM	5.1	75.5	None
		12:50 PM	7.23	76.3	None
		1:50 AM	6.46	75.8	None
		2:50 AM	5.88	74.2	None
		3:50 AM	5.34	73.1	None
		4:50 AM	4.6	73.0	None
		5:50 AM	3.8	72.3	None
		6:50 AM	6.31	75.0	None
		7:15 AM	4.38	77.3	None
36	7/18/16 to 7/19/16	7:50 PM	6.16	78.1	None
		8:50 PM	6.62	78.7	None
		9:50 PM	5.9	77.1	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
36 (Cont.)	7/18/16 to 7/19/16	10:50 PM	5.52	76.4	None
		11:50 PM	4.16	75.1	None
		12:50 PM	4.47	75.5	None
		1:50 AM	4.51	74.2	None
		2:50 AM	4.55	73.8	None
		3:50 AM	6	74.5	None
		4:50 AM	4.99	74.0	None
		5:50 AM	6.68	73.8	None
		6:50 AM	3.8	76.1	None
		7:15 AM	6.68	77.7	None
37	7/19/16 to 7/20/16	7:50 PM	3.96	74.8	None
		8:50 PM	4.36	75.1	None
		9:50 PM	5.35	74.7	None
		10:50 PM	5.55	74.8	None
		11:50 PM	5.67	73.3	None
		12:50 PM	4.88	72.9	None
		1:50 AM	5.19	72.8	None
		2:50 AM	4.27	73.3	None
		3:50 AM	4.69	73.5	None
		4:50 AM	2.27	72.7	None
		5:50 AM	4.07	72.8	None
		6:50 AM	4.71	74.7	None
		7:15 AM	6.76	77.1	None
38	7/20/16 to 7/21/16	7:50 PM	6.15	80.4	None
		8:50 PM	4.25	77.7	None
		9:50 PM	5.3	76.4	None
		10:50 PM	4.01	75.1	None
		11:50 PM	4.45	75.8	None
		12:50 PM	4.02	74.8	None
		1:50 AM	3.31	74.5	None
		2:50 AM	3.01	74.0	None
		3:50 AM	4.83	73.7	None
		4:50 AM	3.41	73.9	None
		5:50 AM	3.98	73.0	None
		6:50 AM	2.89	75.7	None
		7:15 AM	2.9	77.6	None
39	7/21/16 to 7/22/16	7:50 PM	5.68	77.8	None
		8:50 PM	1.8	74.9	None
		9:50 PM	2.4	74.4	None
		10:50 PM	1.5	74.0	None
		11:50 PM	4.23	73.4	None
		12:50 PM	1.51	72.4	None
		1:50 AM	1.26	72.2	None
		2:50 AM	2.16	71.7	None
		3:50 AM	2.09	72.0	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
39 (Cont.)	7/21/16 to 7/22/16	4:50 AM	2.66	71.9	None
		5:50 AM	2.88	72.0	None
		6:50 AM	0.57	73.9	None
		7:15 AM	3.82	79.3	None
40	7/22/16 to 7/23/16	7:50 PM	3.36	71.3	None
		8:50 PM	1.83	70.5	None
		9:50 PM	1.71	70.2	0.11
		10:50 PM	3.85	70.4	0.01
		11:50 PM	2.42	69.6	0.01
		12:50 PM	0.42	69.4	None
		1:50 AM	1.72	69.8	None
		2:50 AM	0.47	69.5	None
		3:50 AM	3.94	69.4	None
		4:50 AM	1	68.7	None
		5:50 AM	0.95	68.8	None
		6:50 AM	1.78	71.2	None
		7:15 AM	2.39	75.7	None
41	7/23/16 to 7/24/16	7:50 PM	3.43	74.7	None
		8:50 PM	3.23	74.3	None
		9:50 PM	3.2	74.5	None
		10:50 PM	3.85	74.4	None
		11:50 PM	7.31	72.5	None
		12:50 PM	2.86	72.3	None
		1:50 AM	3.62	71.9	None
		2:50 AM	2.4	71.8	None
		3:50 AM	2.11	71.2	None
		4:50 AM	0.13	71.2	None
		5:50 AM	0.97	71.0	None
		6:50 AM	1.85	75.3	None
		7:15 AM	3.13	78.8	None
42	7/24/16 to 7/25/16	7:50 PM	2.36	74.4	None
		8:50 PM	1.39	73.3	None
		9:50 PM	2.62	72.4	None
		10:50 PM	0.22	72.0	None
		11:50 PM	3.74	71.7	None
		12:50 PM	1.63	71.0	None
		1:50 AM	2.34	70.8	None
		2:50 AM	2.53	70.7	None
		3:50 AM	2.19	70.2	None
		4:50 AM	1.44	69.7	None
		5:50 AM	2.38	69.9	None
		6:50 AM	3.25	75.3	None
		7:15 AM	5.53	78.9	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
43	7/25/16 To 7/26/16	7:50 PM	2.79	74.8	None
		8:50 PM	1.05	74.4	None
		9:50 PM	1.76	75.1	None
		10:50 PM	3.62	75.2	None
		11:50 PM	3.25	74.3	None
		12:50 PM	1.82	73.5	None
		1:50 AM	3.03	72.5	None
		2:50 AM	0.87	72.0	None
		3:50 AM	2.47	71.9	None
		4:50 AM	2.57	72.8	None
		5:50 AM	3.88	72.6	None
		6:50 AM	1.98	75.8	None
		7:15 AM	2.64	80.3	None
44	7/26/16 to 7/27/16	7:50 PM	1.21	76.6	None
		8:50 PM	1.72	75.3	None
		9:50 PM	1.88	74.0	None
		10:50 PM	0.26	73.7	None
		11:50 PM	1.16	73.2	None
		12:50 PM	2.64	73.1	None
		1:50 AM	3.96	73.0	None
		2:50 AM	3.05	72.6	None
		3:50 AM	1.14	72.8	None
		4:50 AM	2.95	73.2	None
		5:50 AM	1.64	73.6	None
		6:50 AM	3.34	75.9	None
		7:15 AM	4.55	78.2	None
45	7/27/16 To 7/28/16	7:50 PM	2.2	79.2	None
		8:50 PM	2.12	77.5	None
		9:50 PM	0.72	76.1	None
		10:50 PM	2.18	74.6	None
		11:50 PM	1.8	74.2	None
		12:50 PM	2.02	73.7	None
		1:50 AM	3.19	72.5	None
		2:50 AM	4.18	72.4	None
		3:50 AM	1.82	72.2	None
		4:50 AM	2.01	72.2	None
		5:50 AM	3.11	71.7	None
		6:50 AM	3.22	75.7	None
		7:15 AM	2.77	79.7	None
46	7/28/16 to 7/29/16	7:50 PM	0.35	78.0	None
		8:50 PM	4.91	77.5	None
		9:50 PM	4.06	76.4	None
		10:50 PM	0.77	75.4	None
		11:50 PM	1.09	74.9	None

Weather Conditions (Continued)

Survey Night	Date	Hour	Wind	Temperature	Precipitation
46 (Cont.)	7/28/16 to 7/29/16	12:50 PM	0.76	74.7	None
		1:50 AM	0.34	74.4	None
		2:50 AM	2.02	73.6	None
		3:50 AM	1.27	73.3	None
		4:50 AM	1.34	73.5	None
		5:50 AM	2.17	73.0	None
		6:50 AM	1.99	76.9	None
		7:15 AM	2.62	81.1	None
47	7/29/16 to 7/30/16	7:50 PM	0.87	75.7	None
		8:50 PM	1.86	74.6	None
		9:50 PM	3.27	74.6	None
		10:50 PM	1.31	73.9	None
		11:50 PM	0.37	73.4	None
		12:50 PM	0.75	73.3	None
		1:50 AM	0.7	73.0	None
		2:50 AM	0.22	72.7	None
		3:50 AM	1.66	72.6	None
		4:50 AM	0.09	72.1	None
		5:50 AM	0.7	72.1	None
		6:50 AM	0.5	76.5	None
		7:15 AM	0.73	81.3	None
48	7/30/16 to 7/31/16	7:50 PM	5.5	72.2	None
		8:50 PM	3.58	72.8	None
		9:50 PM	2.3	71.7	None
		10:50 PM	0.67	71.4	None
		11:50 PM	0.5	71.2	None
		12:50 PM	1.42	71.4	0.1
		1:50 AM	2.91	71.3	None
		2:50 AM	0.38	71.3	None
		3:50 AM	1.94	71.0	None
		4:50 AM	1.94	70.8	None
		5:50 AM	4.49	71.7	None
		6:50 AM	0.11	76.1	None
		7:15 AM	3.42	79.3	None
49	7/31/16 to 8/1/16	7:50 PM	4.35	73.8	None
		8:50 PM	4.09	73.3	None
		9:50 PM	3.26	72.4	None
		10:50 PM	4.41	73.3	None
		11:50 PM	3.46	73.5	None
		12:50 PM	3.9	73.7	None
		1:50 AM	3.08	72.4	None
		2:50 AM	2.71	71.7	None
		3:50 AM	3.25	70.7	None
		4:50 AM	2.34	70.5	None

Weather Conditions (Continued)

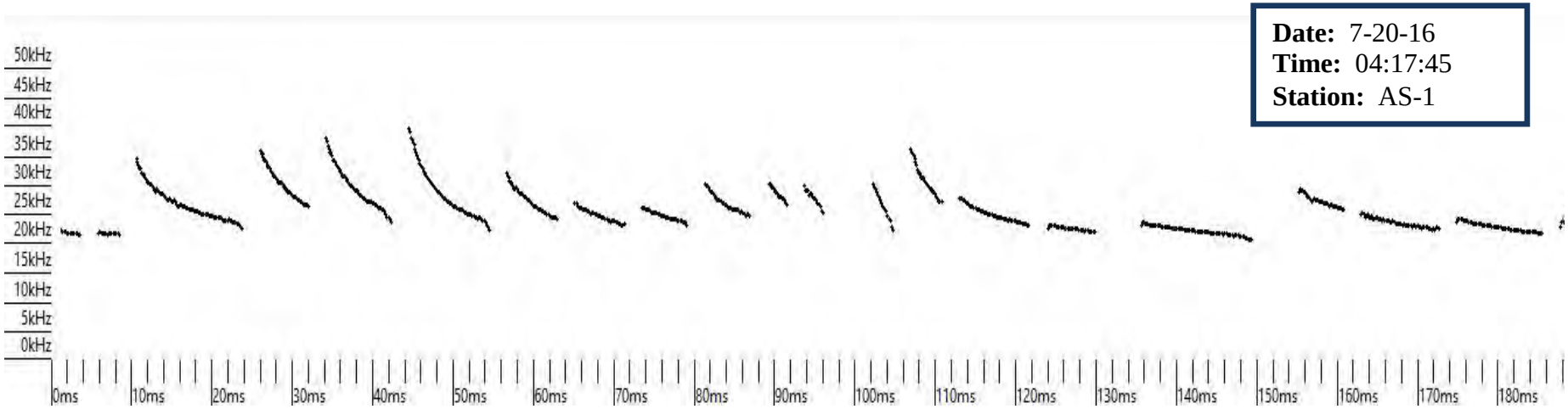
Survey Night	Date	Hour	Wind	Temperature	Precipitation
49 (Cont.)	7/31/16 to 8/1/16	5:50 AM	2.18	70.4	None
		6:50 AM	2.7	73.9	None
		7:15 AM	3.34	78.4	None
50	8/1/16 to 8/2/16	7:50 PM	1.05	78.4	None
		8:50 PM	0.59	77.9	None
		9:50 PM	3.35	78.0	None
		10:50 PM	6.29	78.4	None
		11:50 PM	4.6	77.5	None
		12:50 PM	3.65	75.7	None
		1:50 AM	13.74	76.5	None
		2:50 AM	4.34	73.0	None
		3:50 AM	4.24	71.2	None
		4:50 AM	7.05	70.6	None
		5:50 AM	3.4	40.2	None
		6:50 AM	3.45	74.2	None
		7:15 AM	3.69	79.0	None
51	8/2/16 to 8/3/16	7:50 PM	6.17	71.8	None
		8:50 PM	4.24	70.4	0.16
		9:50 PM	2.95	70.4	0.01
		10:50 PM	4.1	70.8	None
		11:50 PM	2.78	71.5	None
		12:50 PM	6.48	72.2	None
		1:50 AM	3.37	71.6	None
		2:50 AM	4.07	70.7	None
		3:50 AM	4.91	70.2	None
		4:50 AM	3.83	70.9	None
		5:50 AM	0.55	71.3	None
		6:50 AM	1.31	72.3	None
		7:15 AM	2.53	75.3	None
52	8/3/4 to 8/4/16	7:50 PM	3.69	72.0	None
		8:50 PM	3.37	71.9	0.03
		9:50 PM	1.98	72.1	None
		10:50 PM	4.72	72.6	0.02
		11:50 PM	1.73	72.8	0.03
		12:50 PM	2.48	72.2	None
		1:50 AM	1.79	71.9	0.01
		2:50 AM	1.91	71.1	None
		3:50 AM	2.85	71.3	None
		4:50 AM	0.89	71.5	None
		5:50 AM	3.14	71.3	None
		6:50 AM	4.11	73.9	None
		7:15 AM	3.24	78.1	None

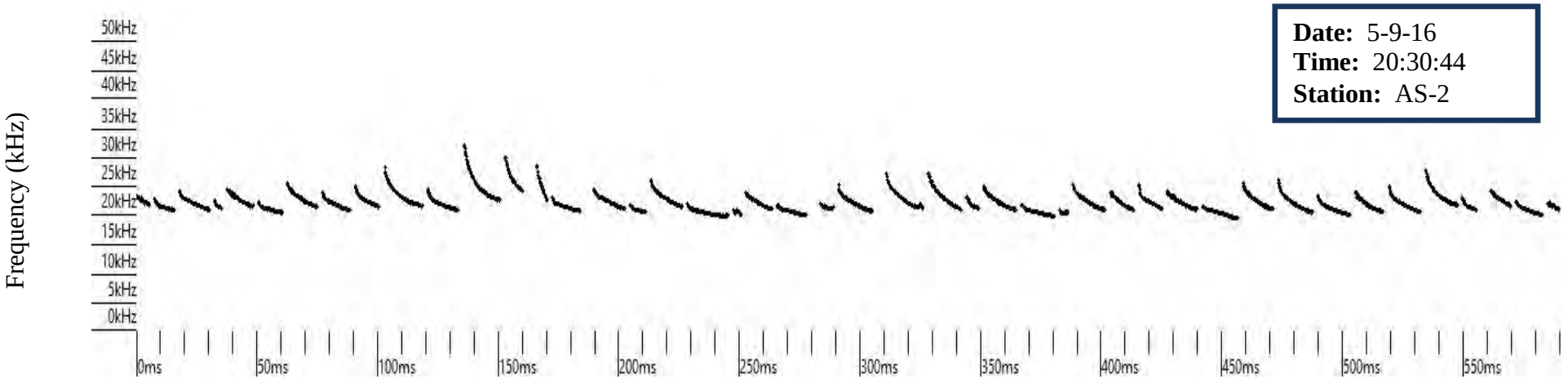
APPENDIX F

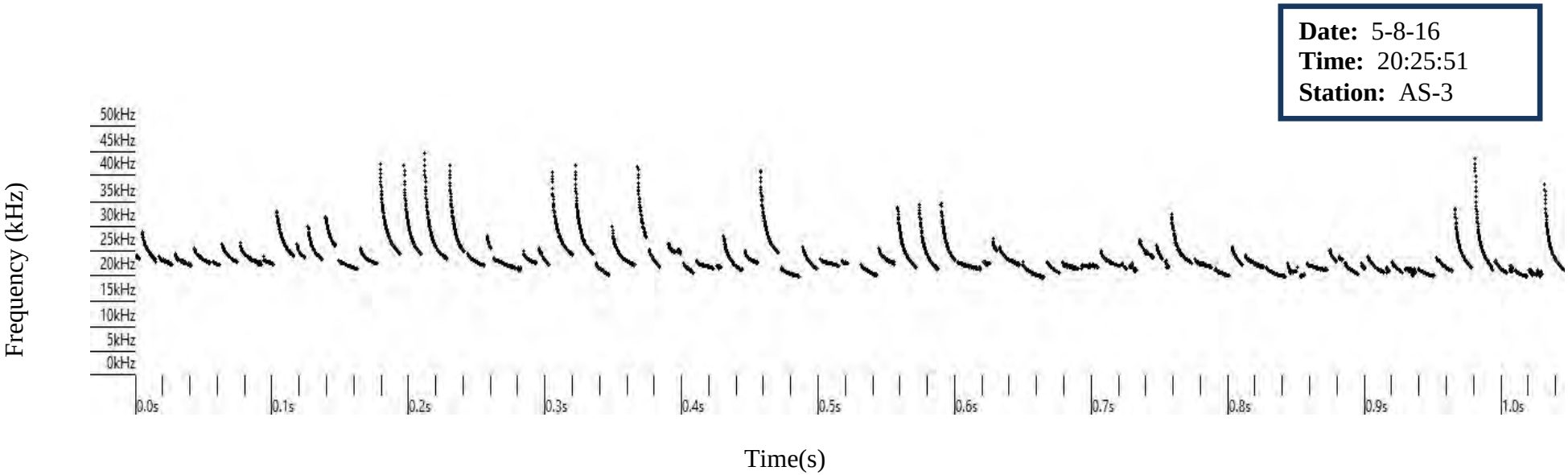
SONOGRAMS OF REPRESENTIVE CALLS OBTAINED FLORIDA DURING THE BONNETED BAT SURVEY

RURAL LANDS WEST
SONOGRAMS OF REPRESENTATIVE BAT CALLS

OCTOBER 2016




Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
50ms
100ms
150ms
200ms
250ms
300ms
350ms
400ms
450ms
500ms
550ms
Time(s)
Date: 5-9-16
Time: 20:30:44
Station: AS-2


Frequency (kHz)
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45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
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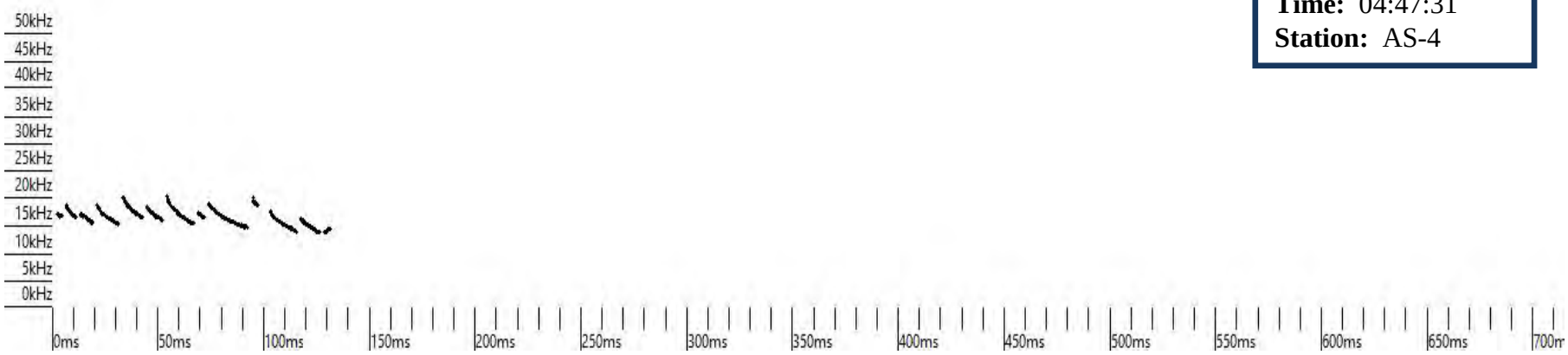
0.0s
0.1s
0.2s
0.3s
0.4s
0.5s
0.6s
0.7s
0.8s
0.9s
1.0s
Time(s)
Date: 5-8-16
Time: 20:25:51
Station: AS-3

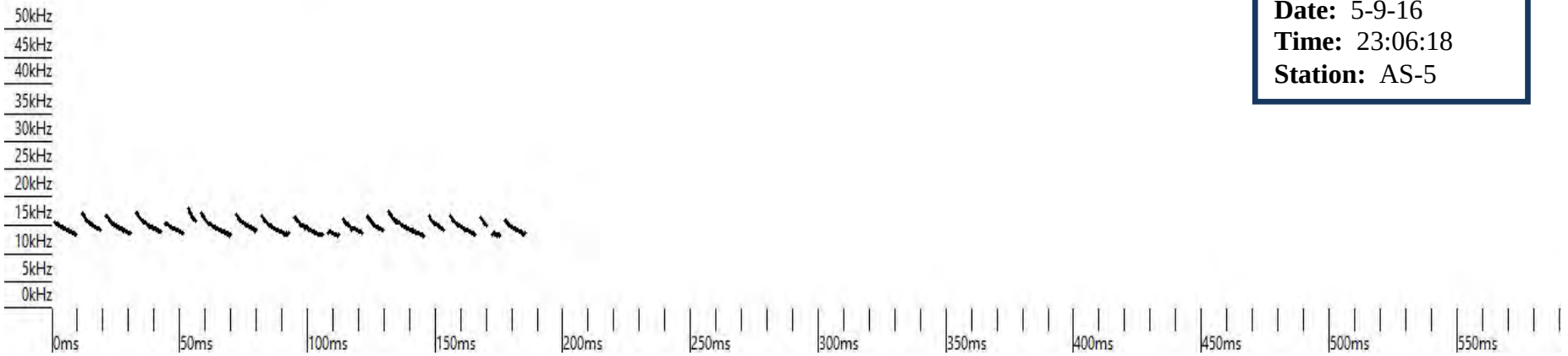
Florida Bonneted Bat (*Eumops floridanus*)

Date: 8-4-16
Time: 04:47:31
Station: AS-4



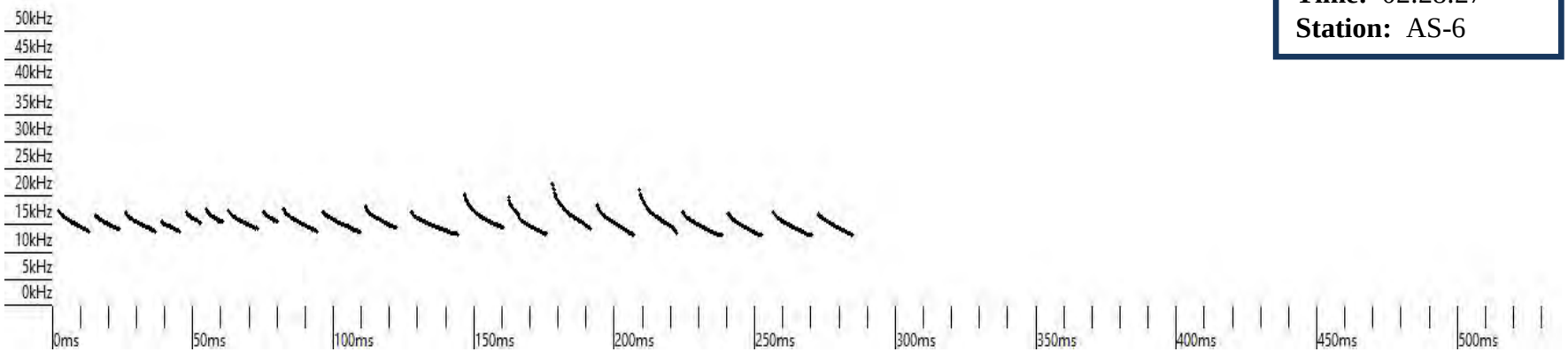
Florida Bonneted Bat (*Eumops floridanus*)

Date: 5-9-16
Time: 23:06:18
Station: AS-5



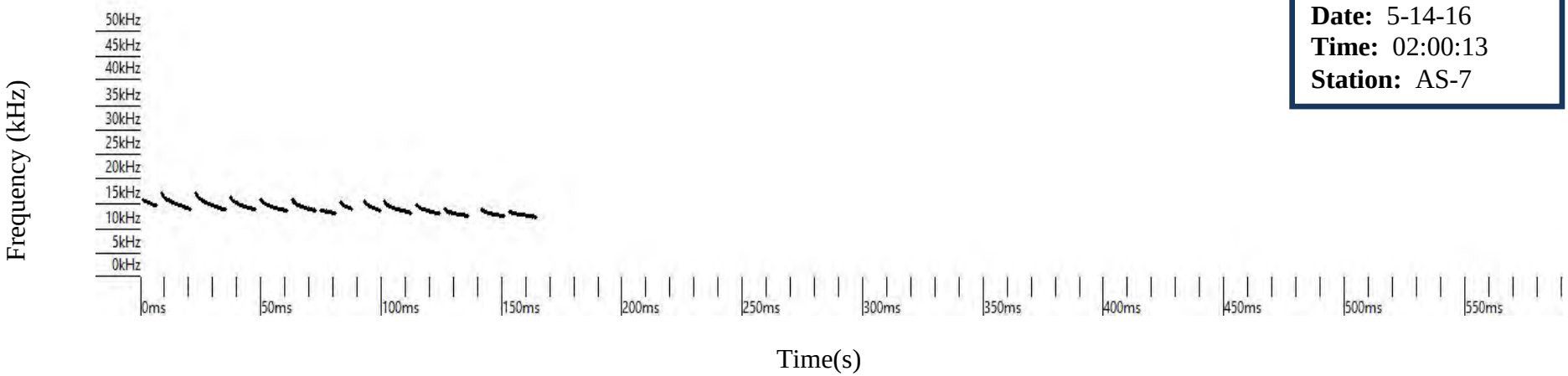
Florida Bonneted Bat (*Eumops floridanus*)

Date: 5-12-16
Time: 02:28:27
Station: AS-6

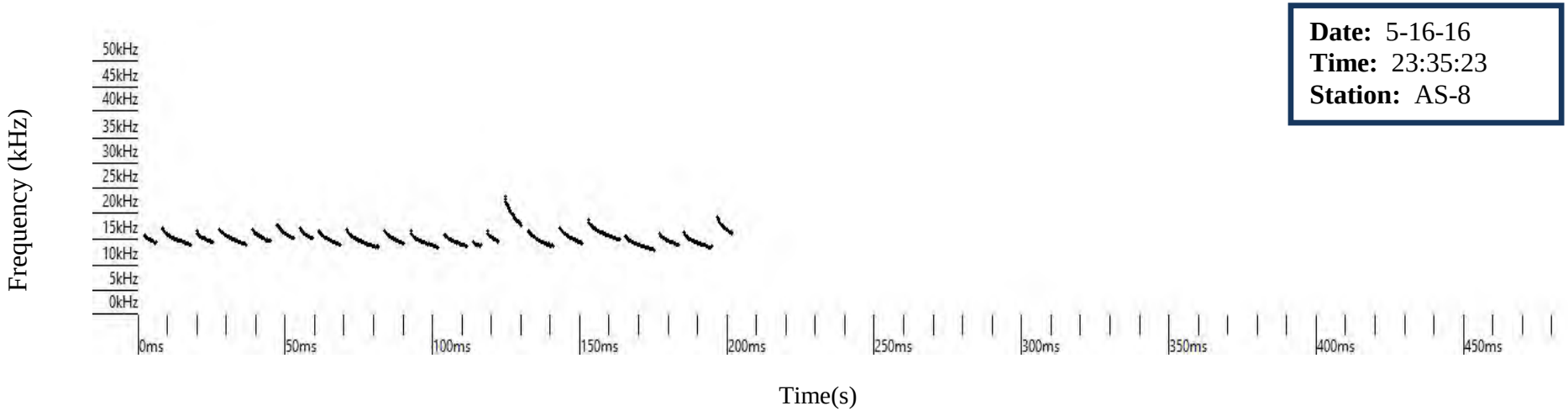


Florida Bonneted Bat (*Eumops floridanus*)

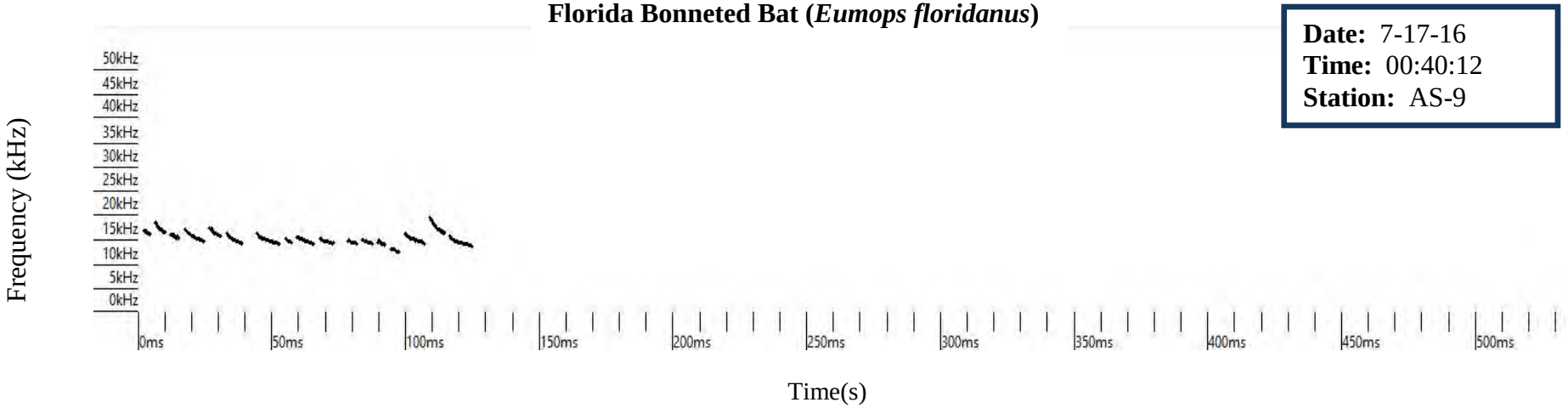
Date: 5-14-16
Time: 02:00:13
Station: AS-7



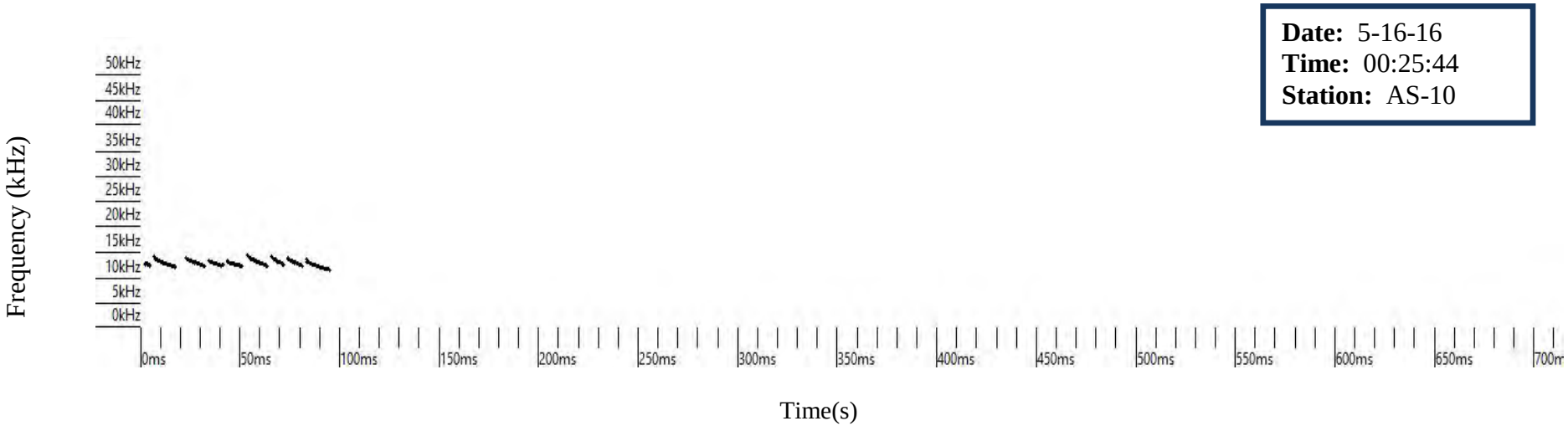
Florida Bonneted Bat (*Eumops floridanus*)



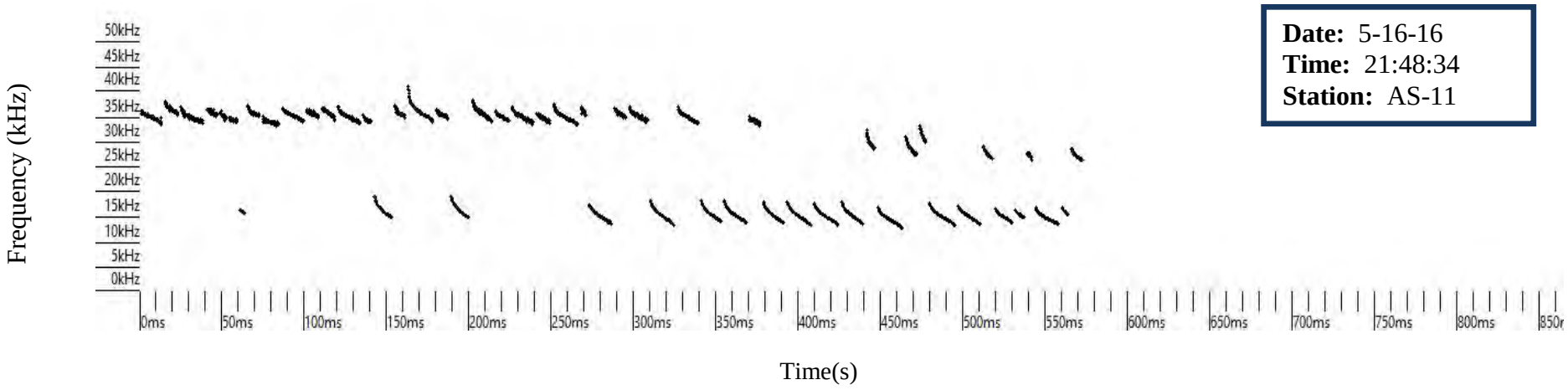
Florida Bonneted Bat (*Eumops floridanus*)

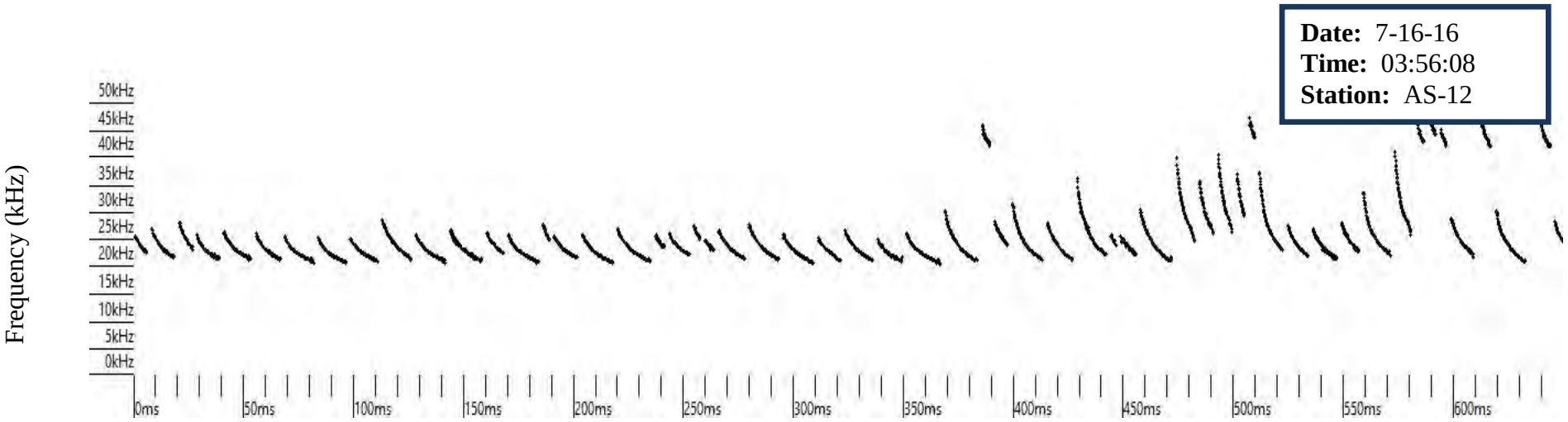


Florida Bonneted Bat (*Eumops floridanus*)

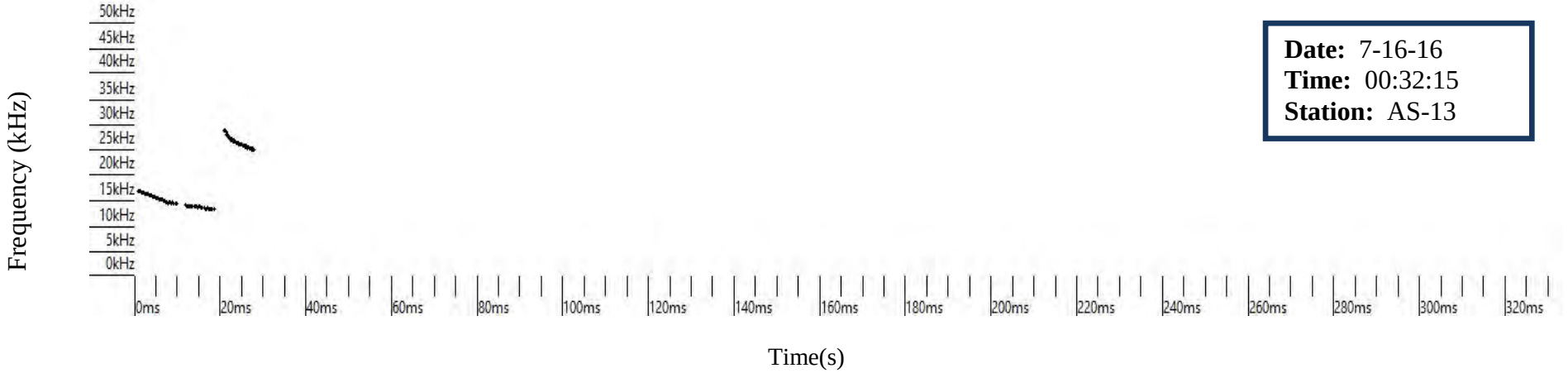


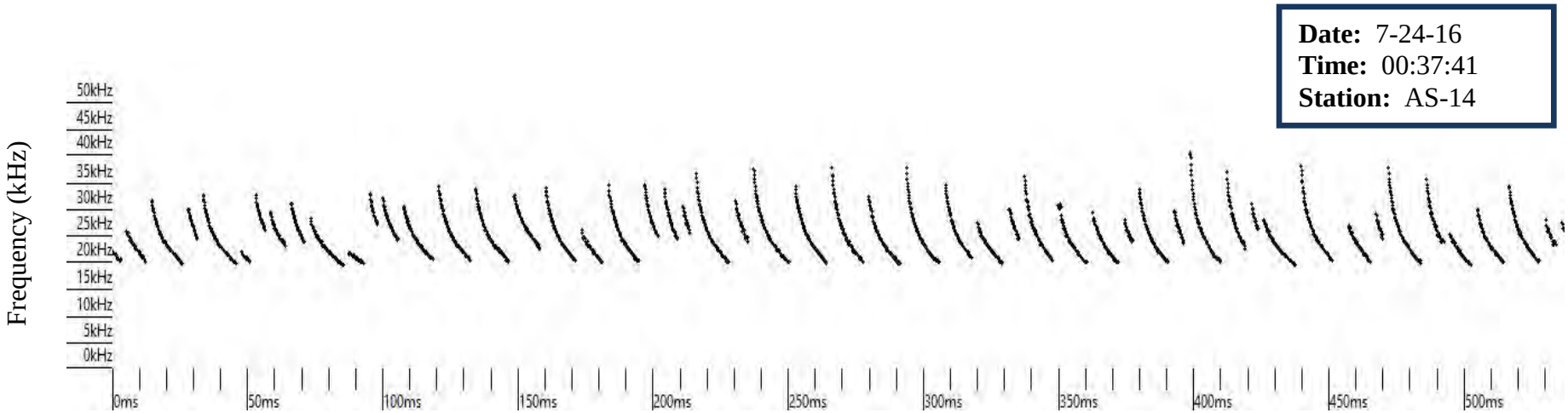
Florida Bonneted Bat (*Eumops floridanus*)



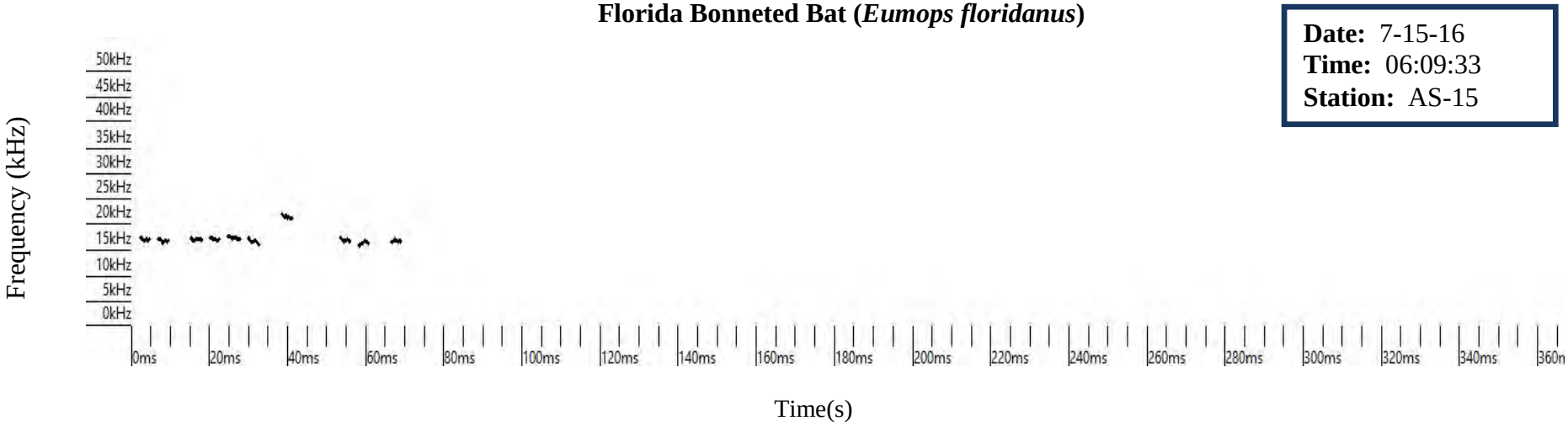


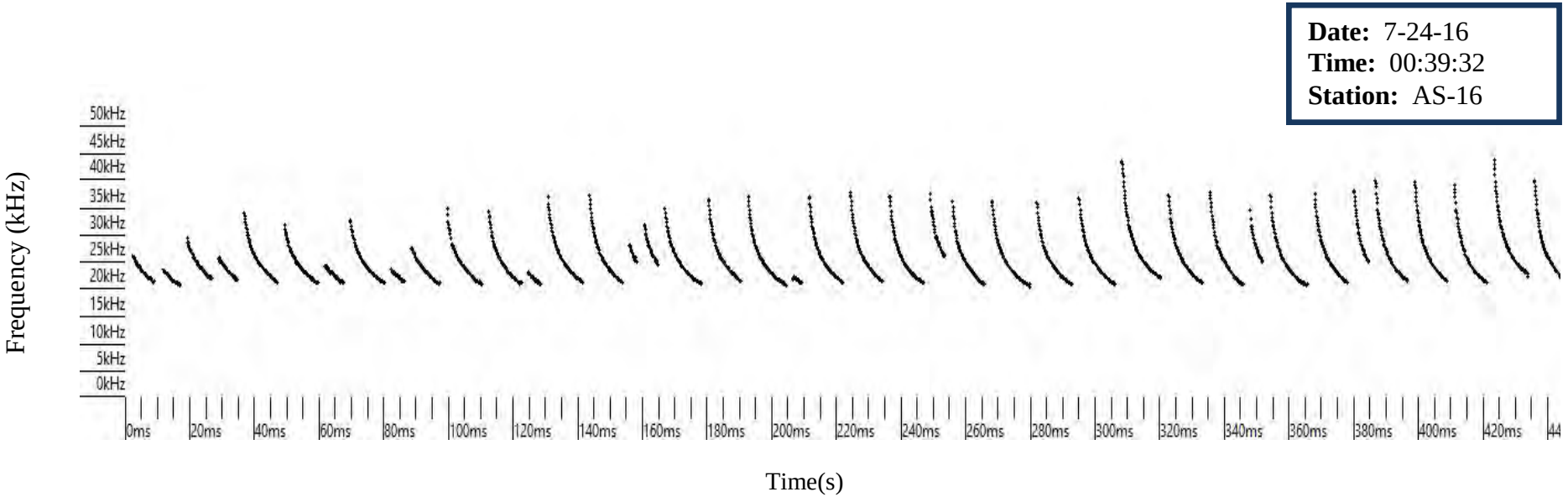
Florida Bonneted Bat (*Eumops floridanus*)

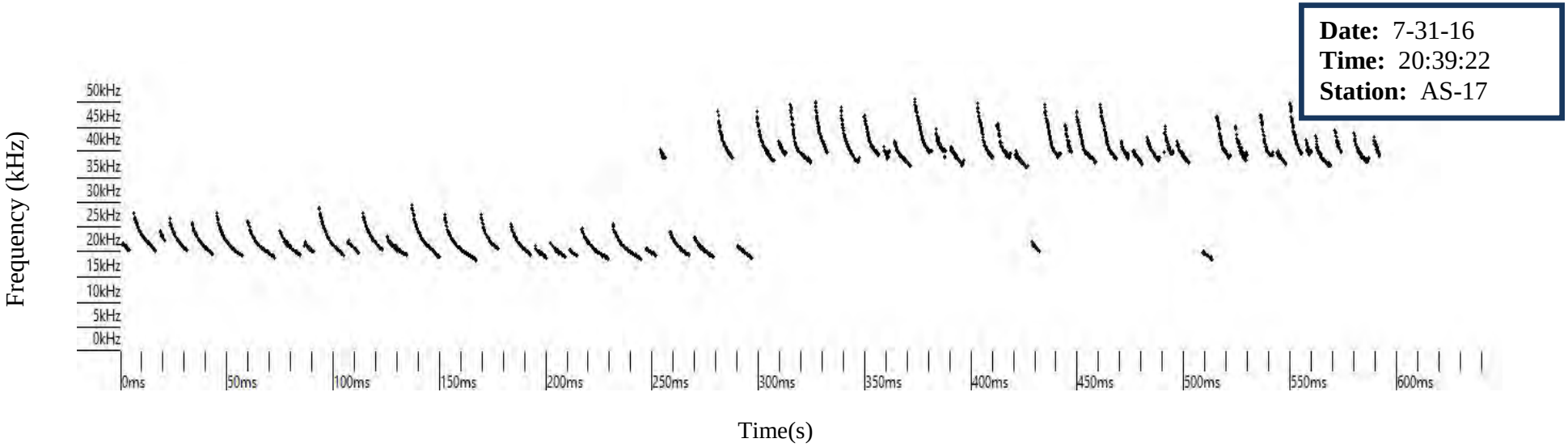


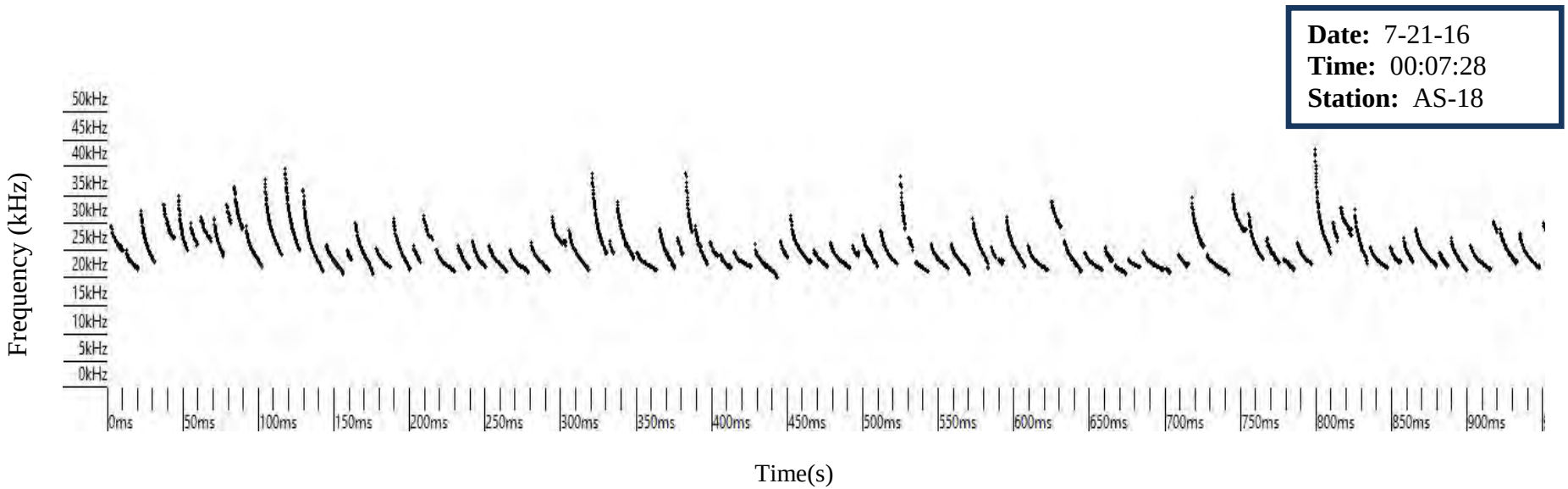


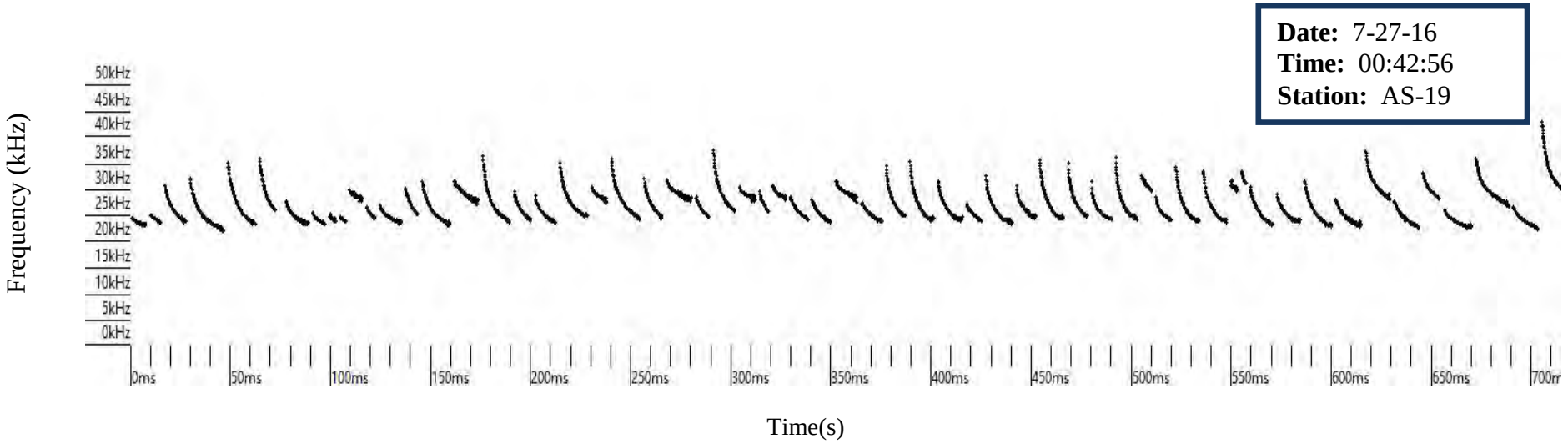
Florida Bonneted Bat (*Eumops floridanus*)



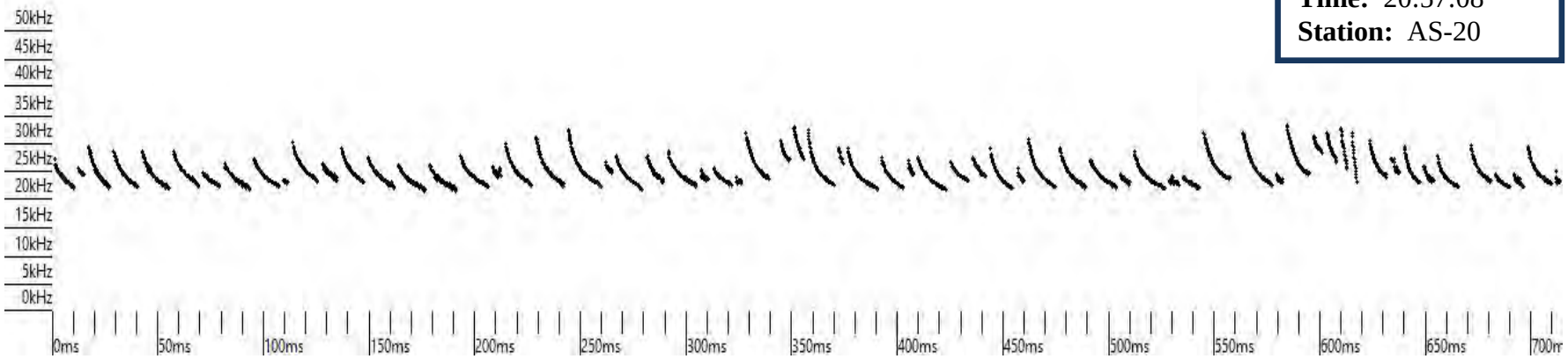

Date: 7-24-16
Time: 00:39:32
Station: AS-16
Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
20ms
40ms
60ms
80ms
100ms
120ms
140ms
160ms
180ms
200ms
220ms
240ms
260ms
280ms
300ms
320ms
340ms
360ms
380ms
400ms
420ms
Time(s)


Date: 7-31-16
Time: 20:39:22
Station: AS-17
Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
50ms
100ms
150ms
200ms
250ms
300ms
350ms
400ms
450ms
500ms
550ms
600ms
Time(s)


Date: 7-21-16
Time: 00:07:28
Station: AS-18
Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
50ms
100ms
150ms
200ms
250ms
300ms
350ms
400ms
450ms
500ms
550ms
600ms
650ms
700ms
750ms
800ms
850ms
900ms
Time(s)

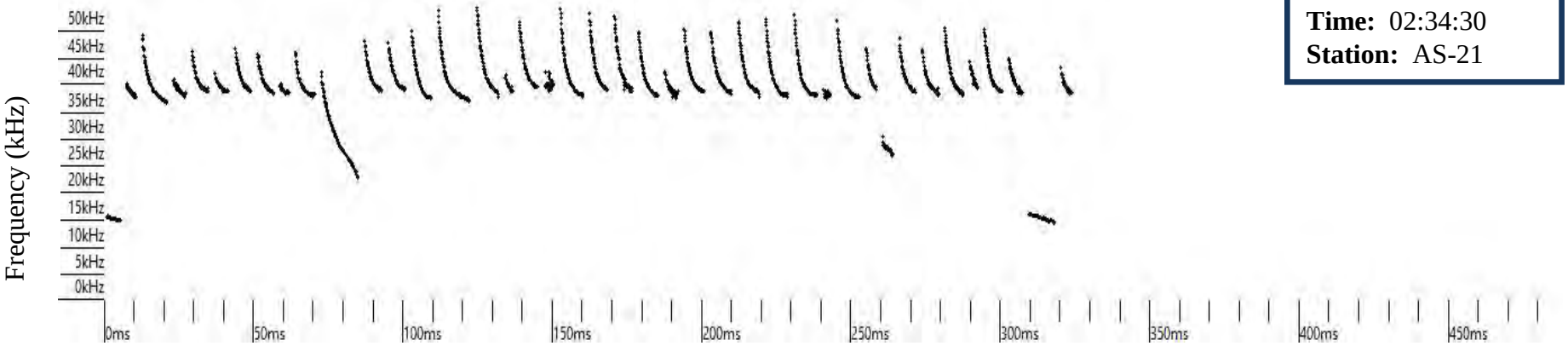

Date: 7-27-16
Time: 00:42:56
Station: AS-19
Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
50ms
100ms
150ms
200ms
250ms
300ms
350ms
400ms
450ms
500ms
550ms
600ms
650ms
Time(s)

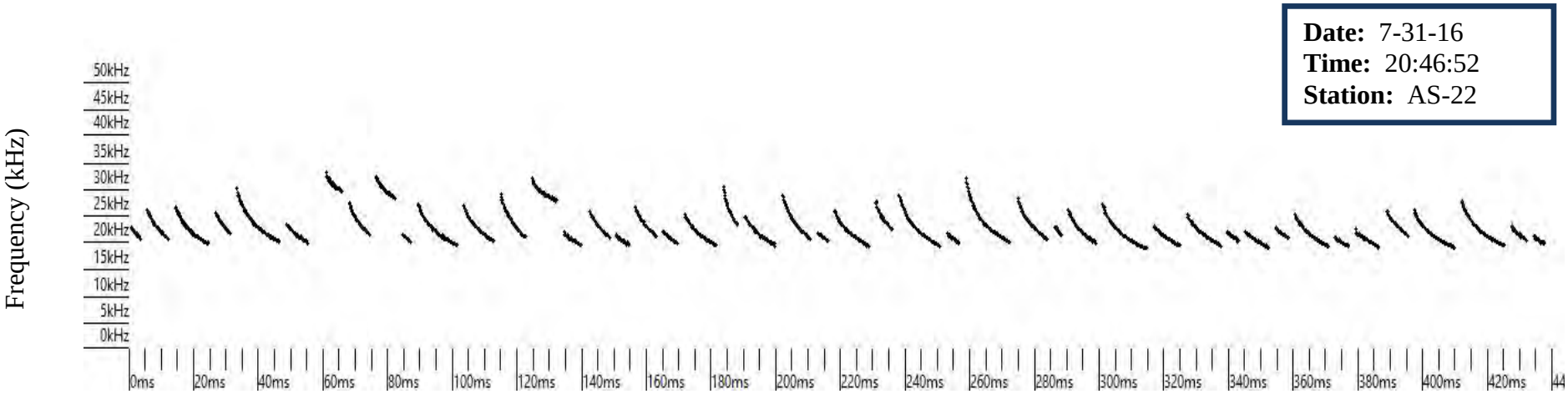
Date: 6-3-16
Time: 20:57:08
Station: AS-20

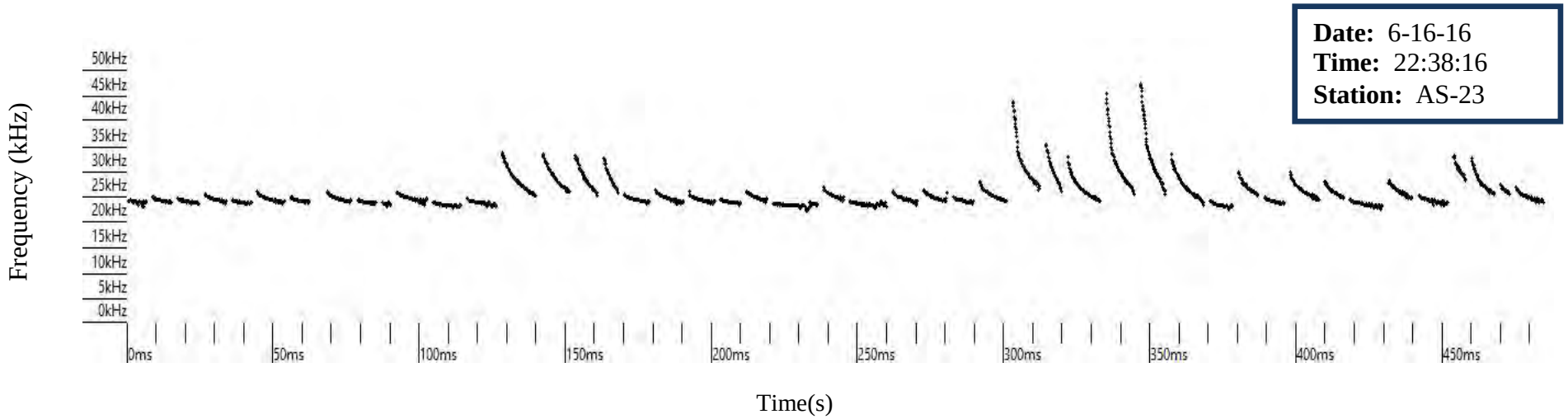


Florida Bonneted Bat (*Eumops floridanus*)

Date: 8-1-16
Time: 02:34:30
Station: AS-21

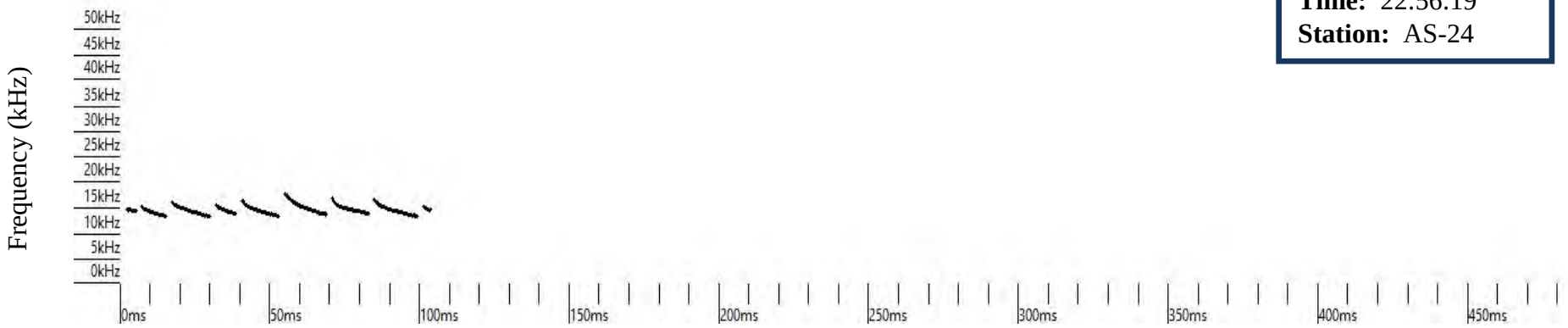



Date: 7-31-16
Time: 20:46:52
Station: AS-22
Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
20ms
40ms
60ms
80ms
100ms
120ms
140ms
160ms
180ms
200ms
220ms
240ms
260ms
280ms
300ms
320ms
340ms
360ms
380ms
400ms
420ms
Time(s)

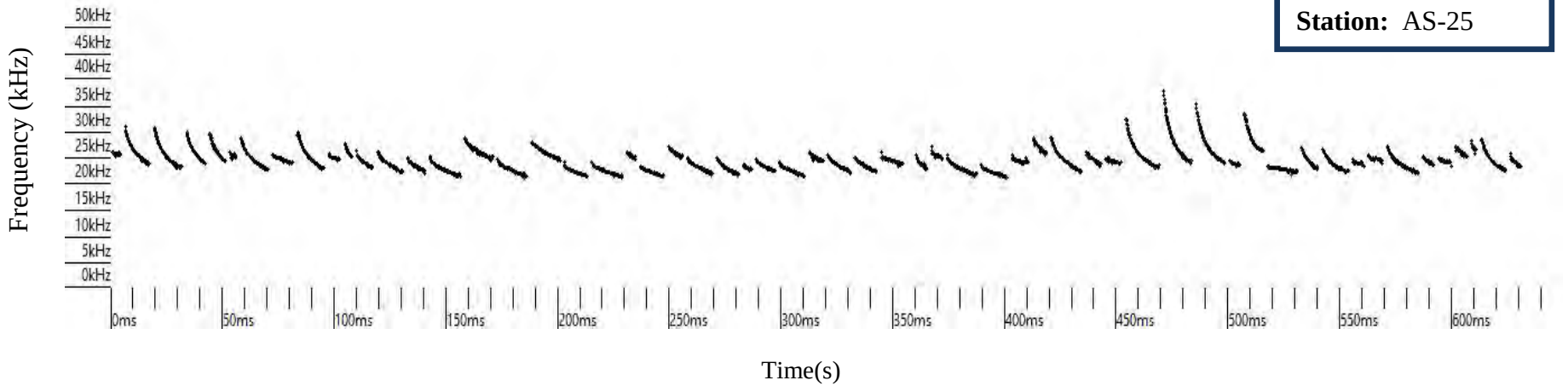

Date: 6-16-16
Time: 22:38:16
Station: AS-23
Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
50ms
100ms
150ms
200ms
250ms
300ms
350ms
400ms
450ms
Time(s)

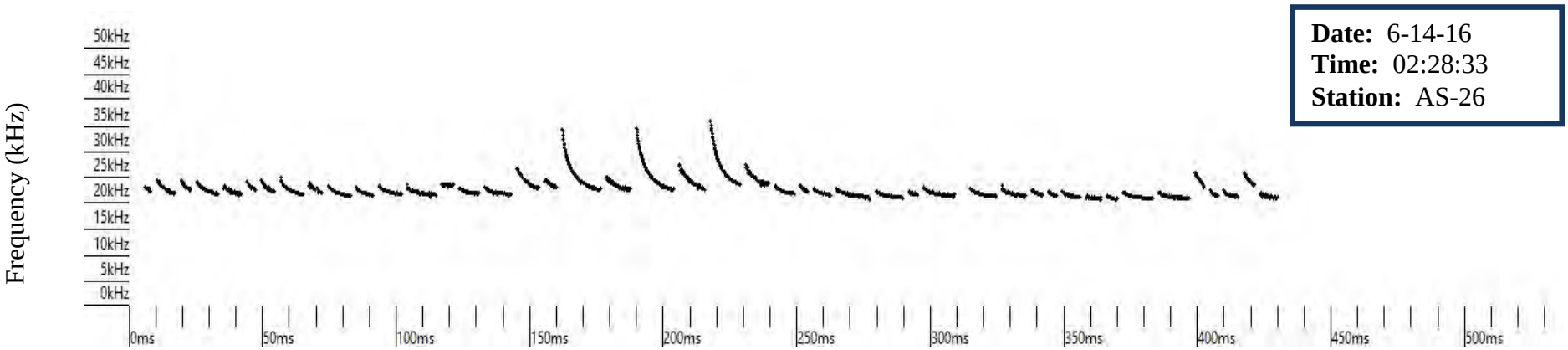
Florida Bonneted Bat (*Eumops floridanus*)

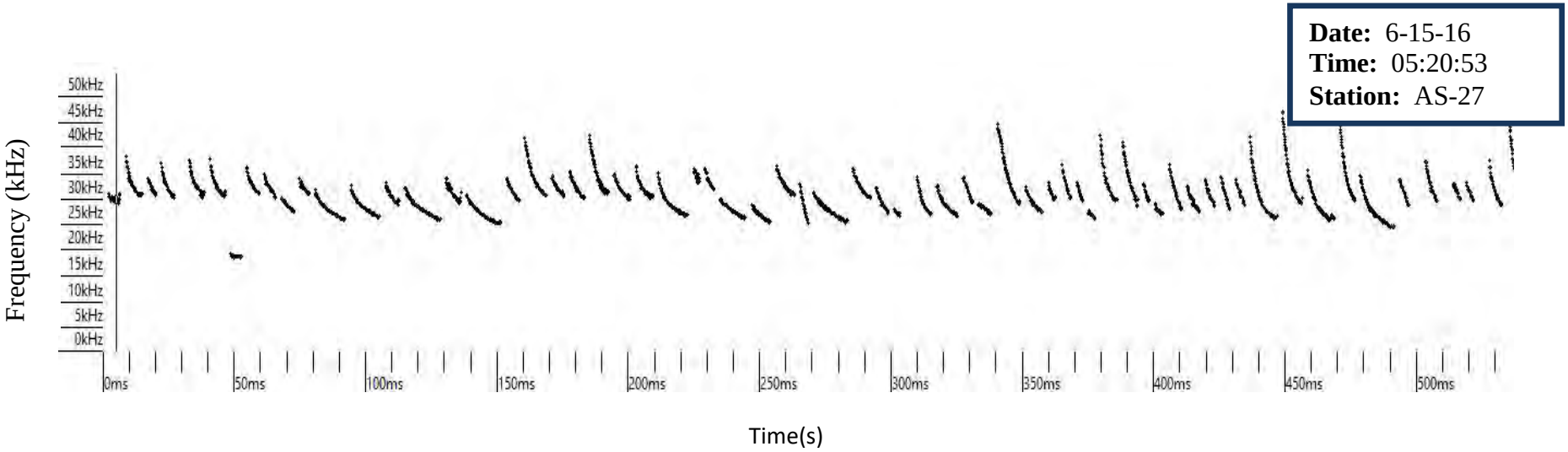
Date: 7-27-16
Time: 22:56:19
Station: AS-24

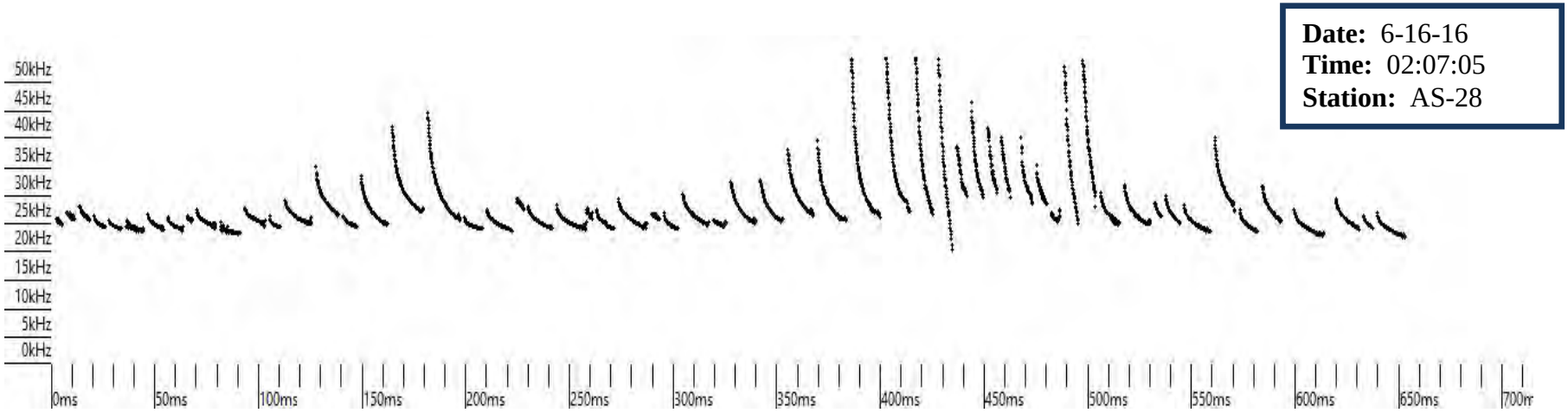


Date: 7-27-16
Time: 01:52:04
Station: AS-25



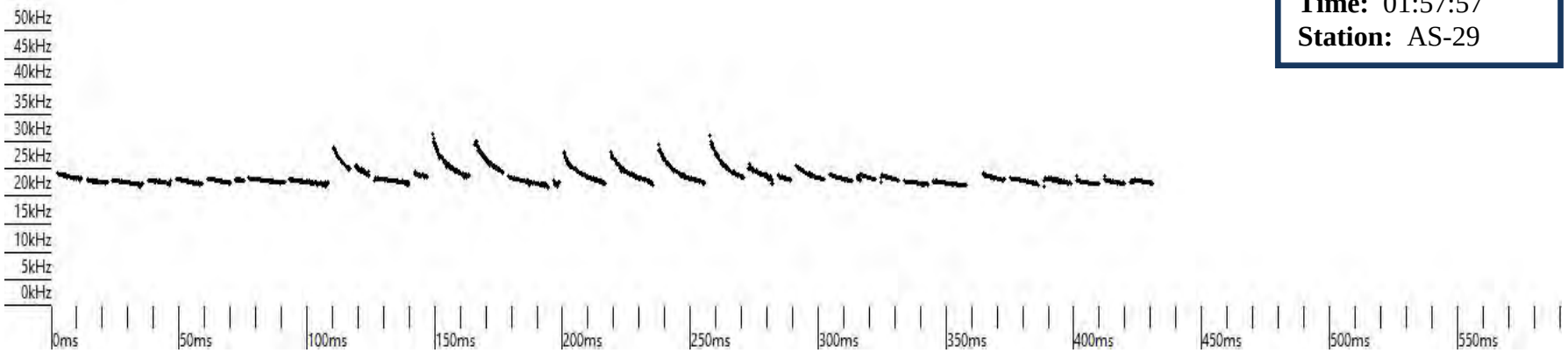

Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
50ms
100ms
150ms
200ms
250ms
300ms
350ms
400ms
450ms
500ms
Time(s)
Date: 6-14-16
Time: 02:28:33
Station: AS-26


Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
50ms
100ms
150ms
200ms
250ms
300ms
350ms
400ms
450ms
500ms
Time(s)
Date: 6-15-16
Time: 05:20:53
Station: AS-27



Date: 6-16-16
Time: 02:07:05
Station: AS-28

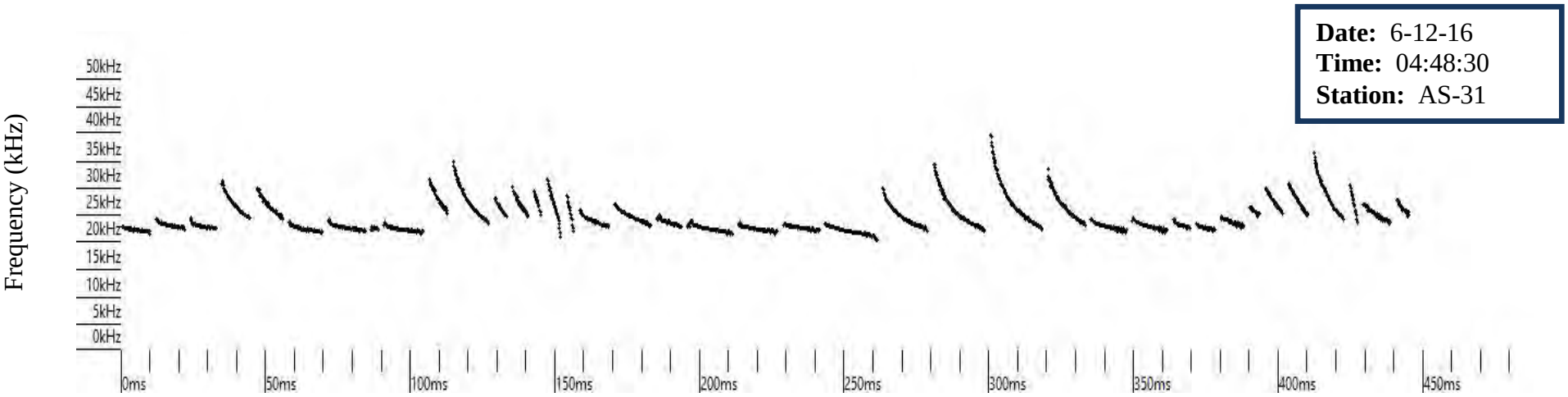
Time(s)

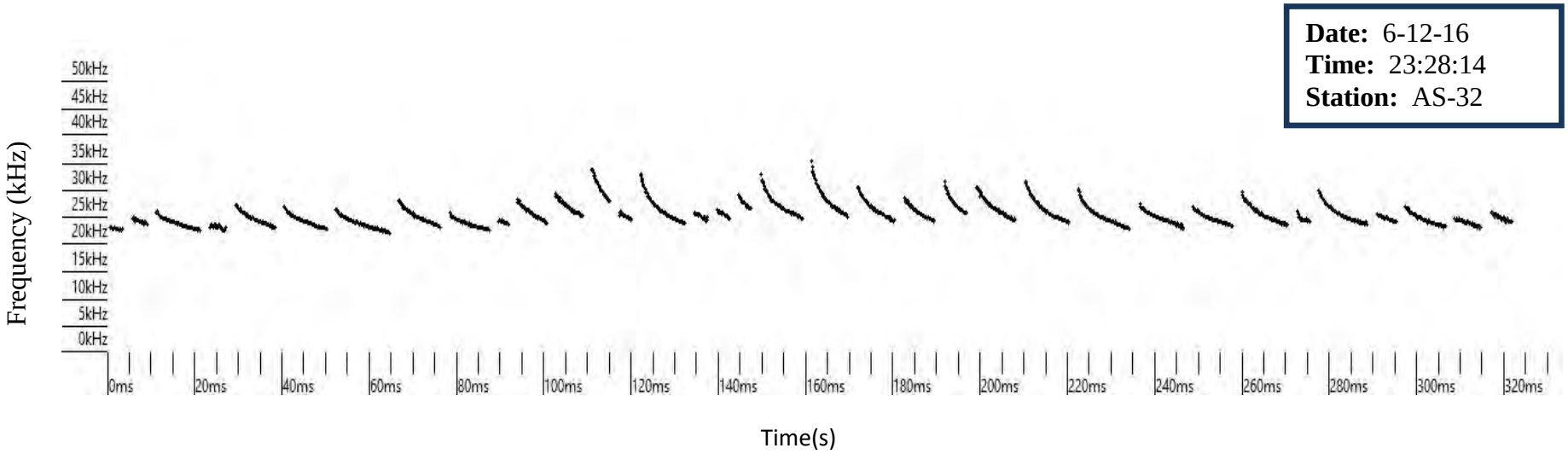


Date: 6-12-16
Time: 01:57:57
Station: AS-29

Frequency (kHz)

Time(s)


Date: 6-12-16
Time: 04:48:30
Station: AS-31
Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
50ms
100ms
150ms
200ms
250ms
300ms
350ms
400ms
450ms
Time(s)


Date: 6-12-16
Time: 23:28:14
Station: AS-32
Frequency (kHz)
50kHz
45kHz
40kHz
35kHz
30kHz
25kHz
20kHz
15kHz
10kHz
5kHz
0kHz
0ms
20ms
40ms
60ms
80ms
100ms
120ms
140ms
160ms
180ms
200ms
220ms
240ms
260ms
280ms
300ms
320ms
Time(s)

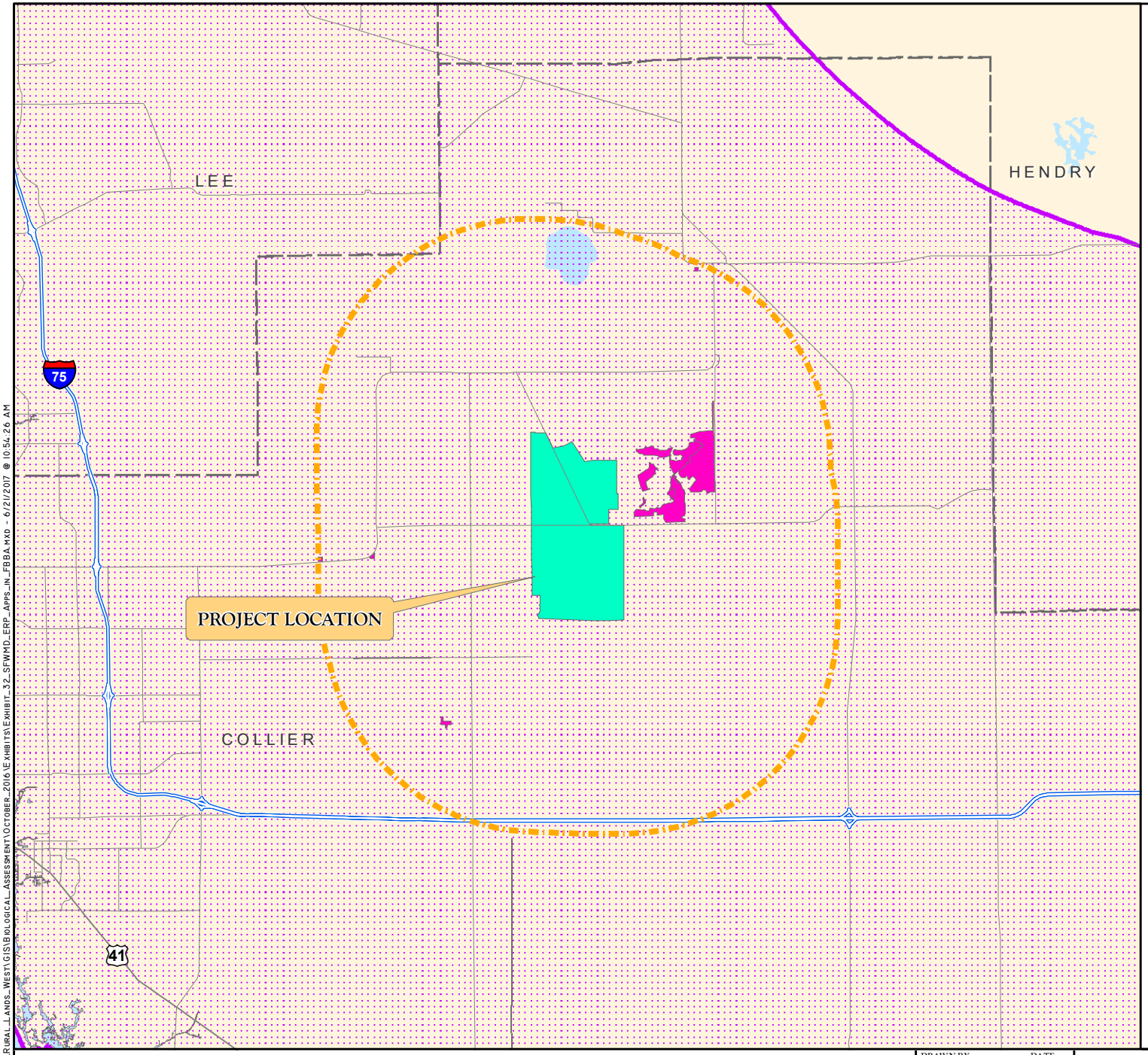
APPENDIX G
SUMMARY OF SURVEY RESULTS

RURAL LANDS WEST
SUMMARY OF SURVEY RESULTS

Acoustic Station	Dates Surveyed	Number of Calls
AS-1	7/14/2016 – 7/20/2016	1,384
AS-2	5/5/2016 – 5/12/2016	2,380
AS-3	5/5/2016 – 5/12/2016	545
AS-4	7/28/2016 – 8/4/2016	1,086
AS-5	5/5/2016 – 5/12/2016	979
AS-6	5/5/2016 – 5/12/2016	1,753
AS-7	5/13/2016 – 5/19/2016	3,430
AS-8	5/13/2016 – 5/19/2016	2,031
AS-9	7/14/2016 – 7/20/2016	2,651
AS-10	5/13/2016 – 5/19/2016	816
AS-11	7/14/2016 – 7/20/2016	2,476
AS-12	7/14/2016 – 7/20/2016	9,904
AS-13	7/14/2016 – 7/20/2016	2,494
AS-14	7/20/2016 – 7/28/2016	3,448
AS-15	7/14/2016 – 7/20/2016	9,165
AS-16	7/20/2016 – 7/28/2016	3,921
AS-17	7/28/2016 – 8/4/2016	3,975
AS-18	7/20/2016 – 7/28/2016	1,349
AS-19	7/20/2016 – 7/28/2016	3,530
AS-20	6/2/2016 – 6/8/2016	2,469
AS-21	7/28/2016 – 8/4/2016	2,583
AS-22	7/28/2016 – 8/4/2016	5,931
AS-23	6/16/2016 – 6/23/2016	1,397
AS-24	7/20/2016 – 7/28/2016	2,715
AS-25	7/20/2016 – 7/28/2016	3,544
AS-26	6/9/2016 – 6/16/2016	826
AS-27	6/9/2016 – 6/16/2016	3,096
AS-28	6/9/2016 – 6/16/2016	748
AS-29	6/9/2016 – 6/16/2016	1,361
AS-31	6/9/2016 – 6/16/2016	628
AS-32	6/9/2016 – 6/16/2016	350

EXHIBIT 32

SFWMD ERPs ISSUED JULY 2013 THROUGH JULY 2016 WITHIN 7 MILE RADIUS AND FLORIDA BONNETED BAT ACTION AREA



LEGEND

- Rural Lands West
- 7 Mile Radius
- Florida Bonneted Bat Consultation Area
- SFWMD ERP Applications

N
W E
S

0 2.5 5
Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

SFWMD ERP APPLICATIONS FROM 2013 THROUGH 2016 WERE ACQUIRED FROM THE SFWMD WEBSITE (HTTP://MY.SFWMD.GOV/GISAPPS/SFWMDXWEBDC/DATAVIEW.ASP?QUERY=UNQ_ID=1128) JULY 2016.

J:\2005\05CEN\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_32_SFWMD_ERP_APPS_IN_FBBA.MXD - 6/21/2017 @ 10:54:26 AM

EXHIBIT 32. SFWMD ERPs ISSUED JULY 2013 THROUGH JULY 2016 WITHIN 7 MILE RADIUS AND FLORIDA BONNETED BAT ACTION AREA

RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. — Consulting Ecologists

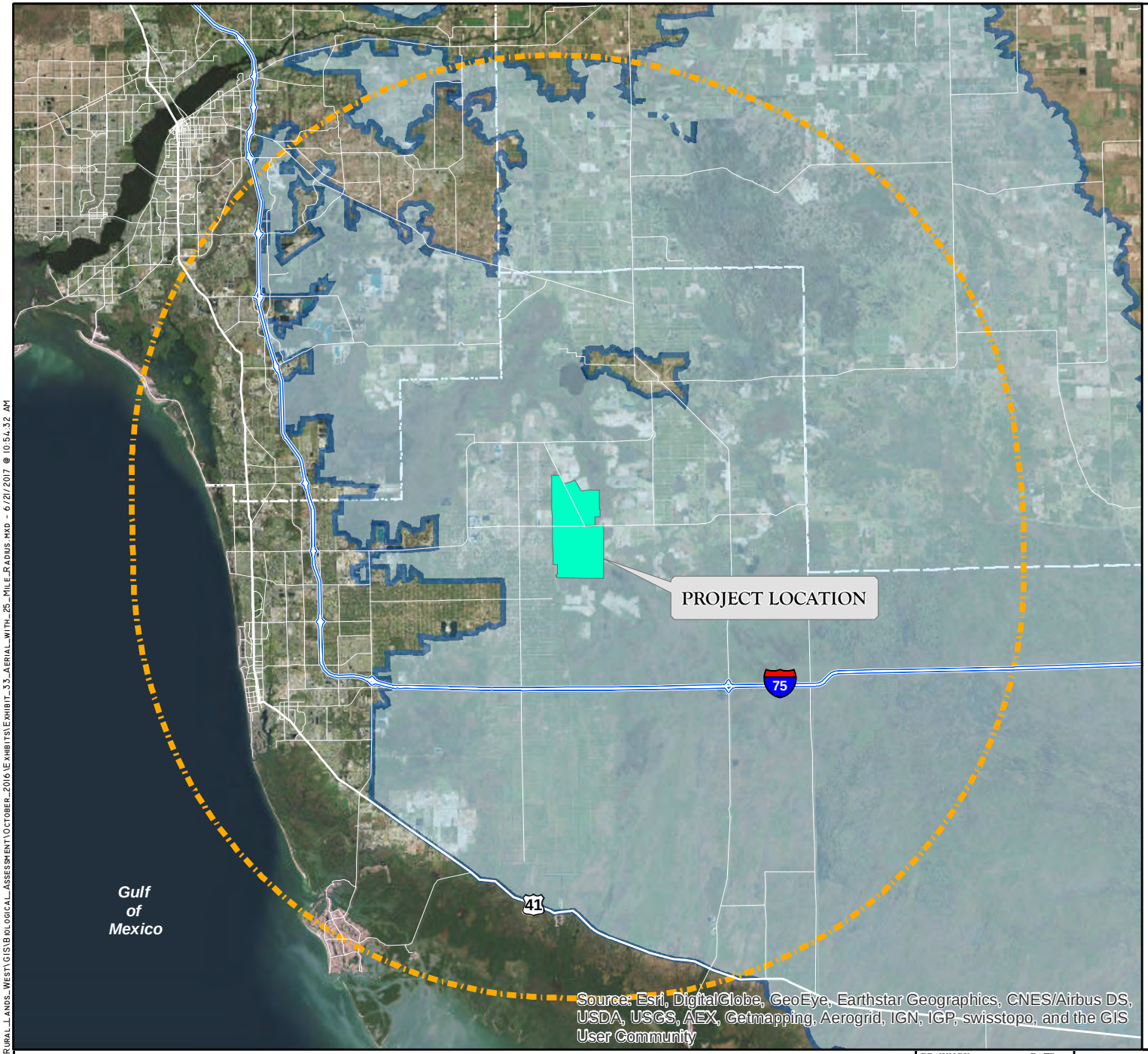
Exhibit 32A. SFWMD ERPs Issued July 2013 through July 2016 within 25 Mile Radius and Florida Bonneted Bat Focal Area

APPLICATION ID	PERMIT NO.	APPROVED DATE	PROJECT NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS ON PROJECT
140306-12	11-02336-P-03	October 27, 2014	DEL WEBB 201-203	164.60	23.35	0.00	0.00	0.00	14.18%
141205-13	11-02336-P	February 16, 2015	A M MODIFICATION TO BASINS UN 1, UN 4, UN 6, AND IR 5	167.03	27.18	0.00	0.00	0.00	16.27%
151005-17	11-02336-P-09	November 25, 2015	ANTHEM PARKWAY & MAPLE RIDGE PHASES 4 & 5 (BASIN PS1-SOUTH)	327.50	31.82	0.00	0.00	0.00	9.72%
151013-11	11-03748-P	December 10, 2015	OUR LADY OF GUADALUPE	8.93	0.00	0.00	0.00	0.00	0.00%
150820-1	11-00418-S-06	December 16, 2015	PUBLIX ORANGETREE	9.98	0.00	0.00	0.00	0.00	0.00%
150924-5	11-03750-P	January 15, 2016	HADLE NURSERY	36.21	20.74	0.00	0.00	0.00	57.28%
151217-1	11-03779-P	April 6, 2016	COLLIER CHARTER SCHOOL	9.71	2.58	0.00	1.13	1.35	26.62%
151102-6	11-01770-P	April 21, 2016	GOLDEN GATE BLVD (C R 876) FROM WILSON BLVD TO 20TH STREET	15.32	0.00	0.00	0.00	0.00	0.00%
160229-15	11-02336-P	April 21, 2016	THE TOWN OF AVE MARIA	1,741.30	150.24	0.00	0.00	0.00	8.63%

Note: SFWMD applications from 2013 through 2016 were acquired from the SFWMD website (http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=ung_id=1128) July 2016. The SFWMD ePermitting website was then researched to determine ERPs issued from 2013 through 2016.

EXHIBIT 33

AERIAL PHOTOGRAPH WITH 25 MILE RADIUS AND PANTHER FOCUS AREA



LEGEND

- Rural Lands West
- 25 Mile Radius
- Panther Focus Area

N
W E
S

0 4 8 12
Miles

NOTES:

AERIAL SOURCE: ESRI. EARTHSTAR, GEOEYE, USDA, AEROGRID,IGN, IGP, SWISSTOPO, CNES, USGS, AEX, GEOEYE, GETMAPPING. FOR MORE INFORMATION ON THIS AERIAL, GO TO HTTPS://WWW.ARCGIS.COM

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

J:\2005\05cen\481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016\Exhibits\Exhibit_33_Aerial_with_25_Mile_Radius.mxd - 6/21/2017 @ 10:54:32 AM

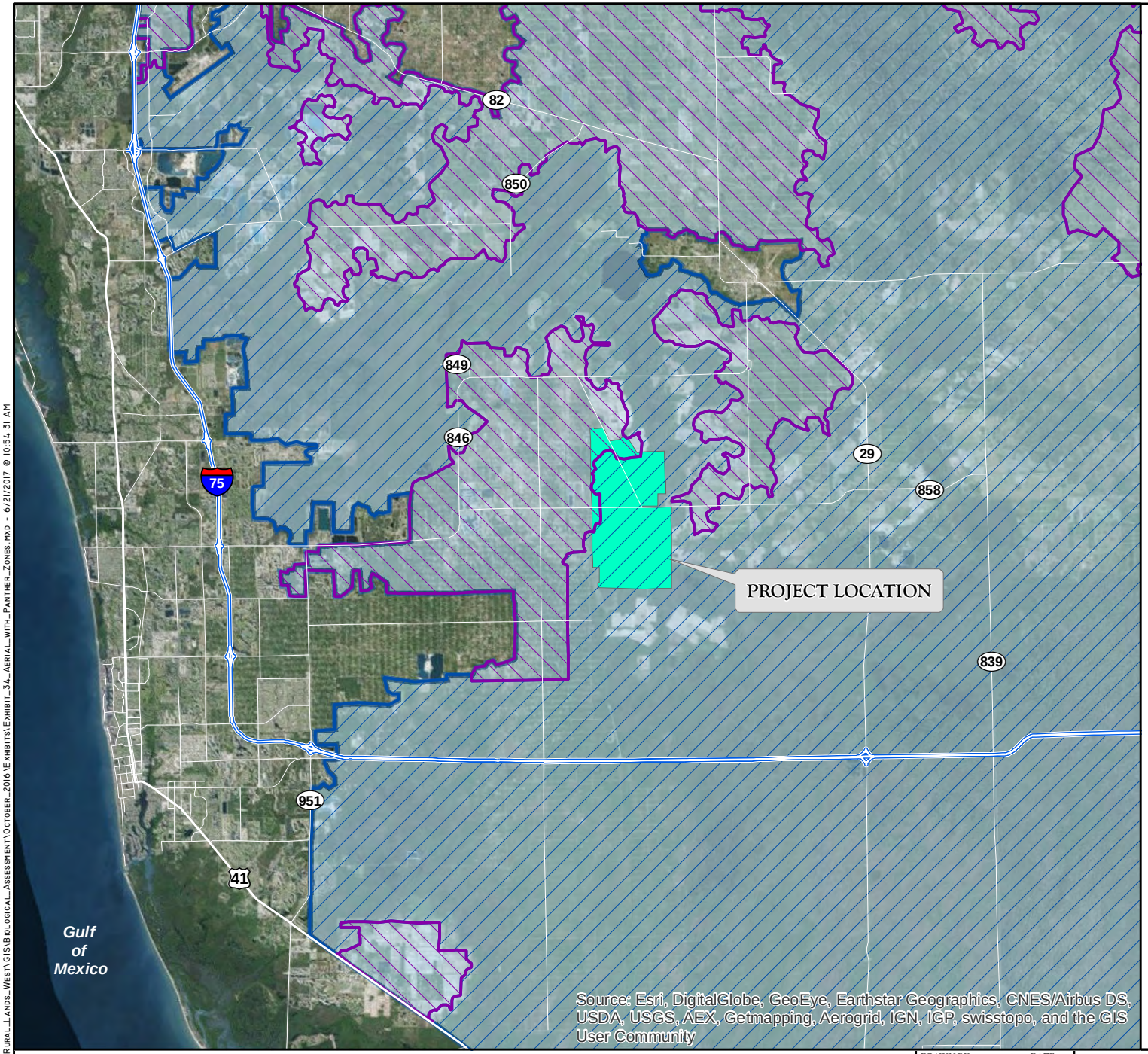
EXHIBIT 33. AERIAL PHOTOGRAPH WITH 25 MILE RADIUS AND PANTHER FOCUS AREA
RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

EXHIBIT 34

AERIAL WITH PANTHER PRIMARY AND SECONDARY ZONES



LEGEND

- Rural Lands West
- Panther Zones
  - Primary Zone
  - Secondary Zone

N
W E
S

0 5 10
Miles

NOTES:

AERIAL SOURCE: ESRI, EARTHSTAR, GEOEYE, USDA, AEROGRID,IGN, IGP, SWISSTOPO, CNES, USGS, AEX, GEOEYE, GETMAPPING. FOR MORE INFORMATION ON THIS AERIAL, GO TO HTTPS://WWW.ARCGIS.COM

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

PRIMARY AND SECONDARY ZONES WERE ACQUIRED FROM (KAUTZ ET AL. 2006).

J:\2005\05CEM\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_34_AERIAL_WITH_PANTHER_ZONES.MXD - 6/21/2017 @ 10:54:31 AM

EXHIBIT 34. AERIAL WITH PANTHER PRIMARY AND SECONDARY ZONES RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
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S.R.	10/25/16
REVISED	DATE

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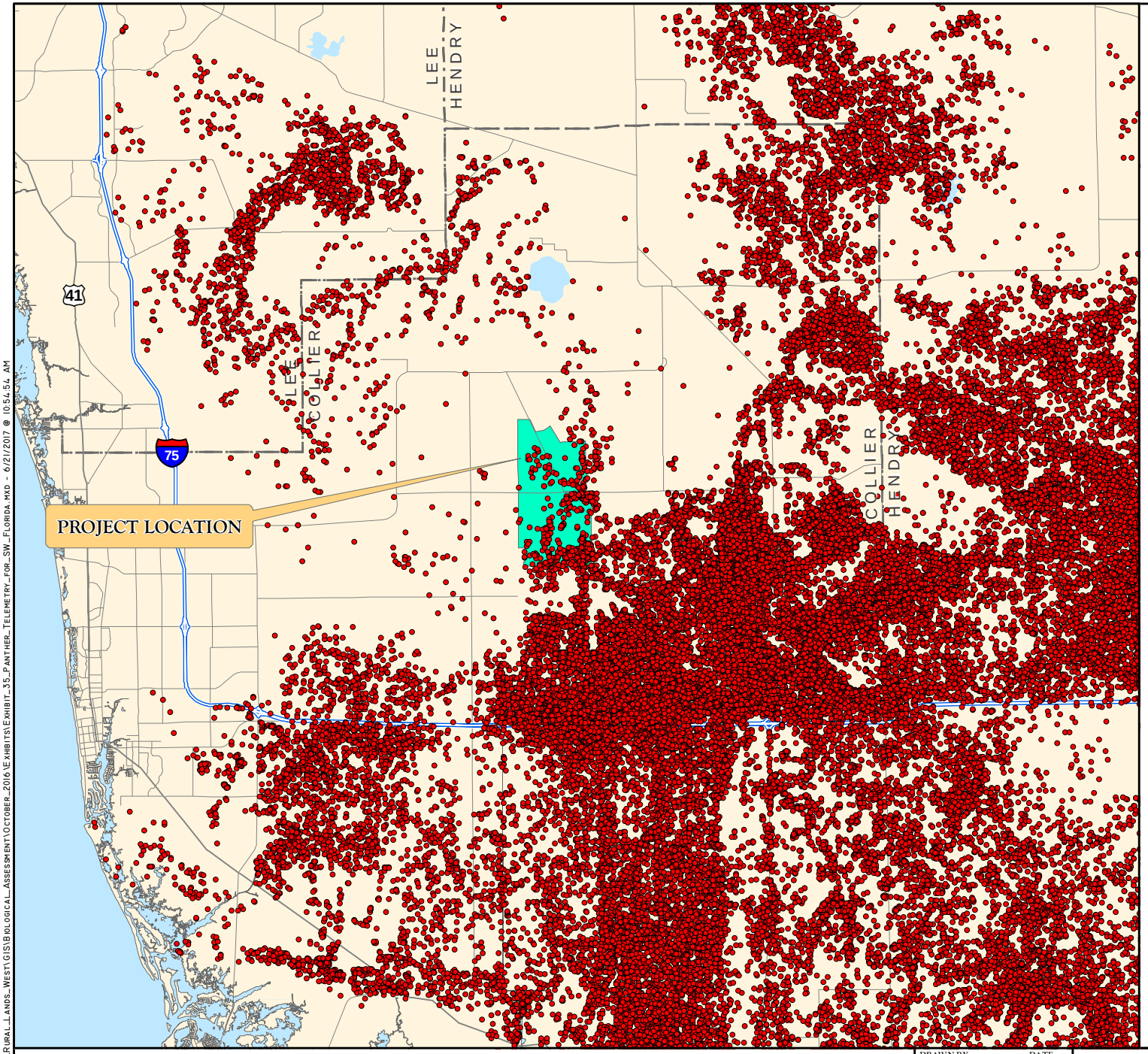
EXHIBIT 35

FLORIDA PANTHER TELEMETRY POINTS FOR SOUTHWEST FLORIDA



LEGEND

- Rural Lands West
- Florida Panther Telemetry

N
W
E
S

0 5 10
Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER TELEMETRY WAS ACQUIRED FROM THE FWCC JULY 2016 AND IS CURRENT TO JUNE 2016.

J:\2005\05CEM\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_35_PANTHER_TELEMETRY_FOR_SW_FLORIDA.MXD - 6/21/2017 @ 10:54:54 AM

EXHIBIT 35. FLORIDA PANTHER TELEMETRY POINTS FOR SOUTHWEST FLORIDA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

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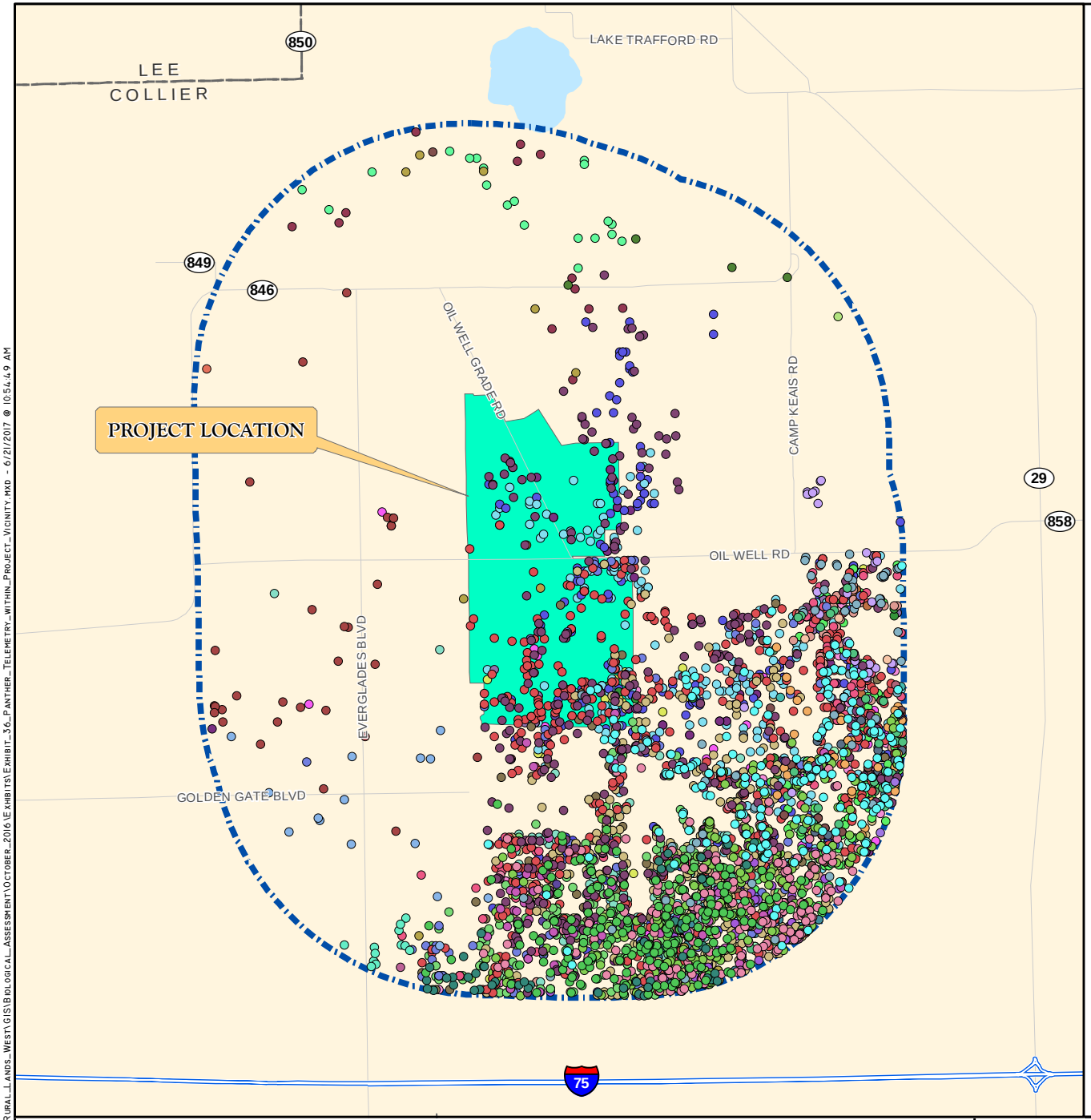
EXHIBIT 36

FLORIDA PANTHER TELEMTRY POINTS WITHIN THE PROJECT VICINITY



LEGEND

- Rural Lands West
- 5 Mile Radius

Panthers within 5 Mile Radius

- 4 (2/24/1982 - 3/9/1985)
- 5 (5/1/1982 - 10/12/1983)
- 10 (12/26/1986)
- 11 (2/12/1991 - 4/16/1999)
- 12 (2/17/1986 - 10/31/1994)
- 19 (3/8/1989 - 11/28/1997)
- 25 (2/24/1988 - 8/19/1988)
- 28 (3/19/1989 - 7/19/1989)
- 30 (4/10/1989 - 10/23/1989)
- 31 (1/12/1989 - 2/14/1994)
- 32 (2/3/1989 - 8/30/2002)
- 34 (1/9/1990 - 5/11/1990)
- 43 (5/4/1990 - 10/12/1990)
- 45 (6/11/1991 - 11/27/1991)
- 48 (2/25/1992 - 12/23/1992)
- 51 (5/15/1992 - 7/15/1998)
- 52 (5/6/1992 - 1/11/1993)
- 53 (2/22/1993 - 2/26/1993)
- 54 (3/17/1995 - 12/13/1999)
- 57 (2/8/1995 - 5/26/1997)
- 59 (9/27/1996 - 11/22/2004)
- 60 (1/24/1997 - 9/11/2002)
- 64 (2/13/1998 - 3/22/1999)
- 65 (4/13/1998)
- 66 (1/11/1999 - 4/24/2000)
- 78 (7/12/1999 - 10/2/2002)
- 83 (3/20/2000 - 5/22/2000)
- 96 (1/24/2001 - 1/18/2002)
- 97 (1/29/2001 - 7/2/2001)
- 99 (1/29/2001 - 11/26/2001
- 105 (4/16/2001 - 12/28/2001)
- 106 (4/16/2001 - 12/27/2002)
- 107 (12/12/2001 - 7/11/2008)
- 113 (8/6/2004 - 10/12/2012)
- 119 (12/6/2004 - 9/5/2008)
- 131 (3/17/2004 - 4/2/2008)
- 135 (2/11/2005 - 10/23/2006)
- 140 (11/18/2005 - 6/12/2009)
- 154 (4/9/2007 - 3/28/2008)
- 156 (2/12/2010)
- 183 (1/3/2011 - 7/19/2013)
- 185 (1/28/2011)
- 186 (5/27/2011)
- 189 (6/27/2011 - 7/1/2011)
- 195 (8/13/2012 - 6/24/2016)
- 198 (4/11/2012 - 4/18/2012)
- 215 (5/30/2012 - 6/22/2016)
- 219 (8/19/2013 - 10/25/2013)
- 222 (3/13/2013 - 10/19/2015)
- 224 (5/16/2014 - 12/9/2015)
- 231 (3/26/2014 - 8/4/2014)
- TX104 (6/7/1995 - 2/27/1998)
- TX106 (6/10/1996 - 9/6/2002)

N
W E
S

0 1 2 3 4 5
Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER TELEMETRY WAS ACQUIRED FROM THE FWCC JULY 2016 AND IS CURRENT TO JUNE 2016.

J:\2005\05cem\481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016\Exhibits\Exhibit_36_Panther_Telemetry_within_Project_Vicinity.mxd - 6/21/2017 @ 10:54:49 AM

EXHIBIT 36. FLORIDA PANTHER TELEMETRY POINTS WITHIN THE PROJECT VICINITY
RURAL LANDS WEST

DRAWN BY	W.C.	DATE 10/25/16
REVIEWED BY	S.R.	DATE 10/25/16
REVISED		DATE

Passarella & Associates, Inc. Consulting Ecologists

EXHIBIT 37

BIG CYPRESS STEWARDSHIP DISTRICT
DEER AND HOG CENSUS SURVEY REPORT

BIG CYPRESS STEWARDSHIP DISTRICT
WHITE-TAILED DEER AND FERAL HOG
CENSUS SURVEY

June 2009

Prepared For:

Collier Enterprises Management, Inc.
3003 Tamiami Trail North, Suite 400
Naples, Florida 34103
(239) 261-4455

Prepared By:

Passarella & Associates, Inc.
13620 Metropolis Avenue, Suite 200
Fort Myers, Florida 33912
(239) 274-0067

Project No 05CEM1481

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INTRODUCTION

Census surveys for white-tailed deer (*Odocoileus virginianus*) and feral hogs (*Sus scrofa*) were conducted on the Big Cypress Stewardship District (Project). The land cover on the Project site include both open agricultural areas (i.e., row crops and improved pasture) and natural forested habitats. Due to the difference in vegetated cover for these land uses, two different census survey methodologies were utilized to estimate deer and hog populations. The census surveys consisted of strip transect sampling methods (Buckland *et al.* 2001, Borchers *et al.* 2002) for the open agricultural areas and track count survey methods (Tyson 1952, Harlow and Jones 1965) for the natural forested areas. Daily population estimates for white-tailed deer and feral hogs were generated for the strip transect survey while a white-tailed deer population index (DPI) was generated for the track count survey. Results of each survey were compared to the results of similar surveys conducted on wildlife conservation lands in South Florida and used to assess the relative quality of the Project site as habitat for white-tailed deer.

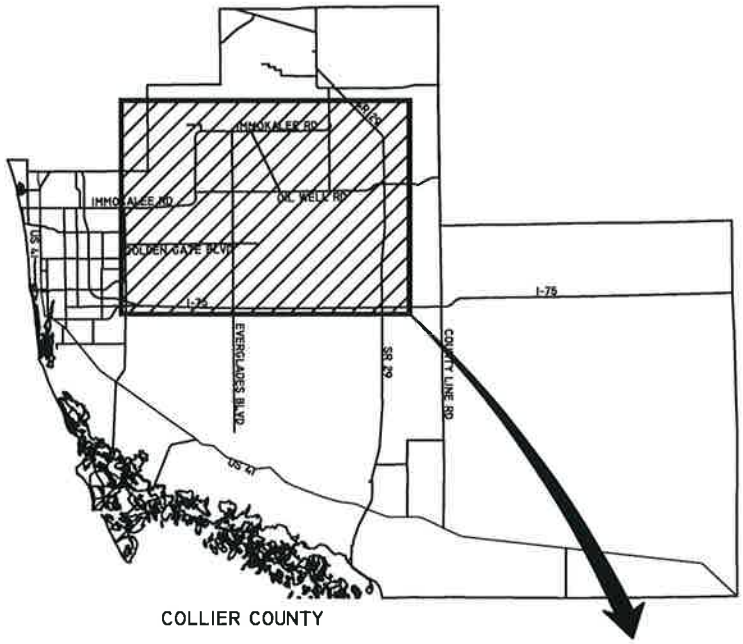
SITE CONDITIONS

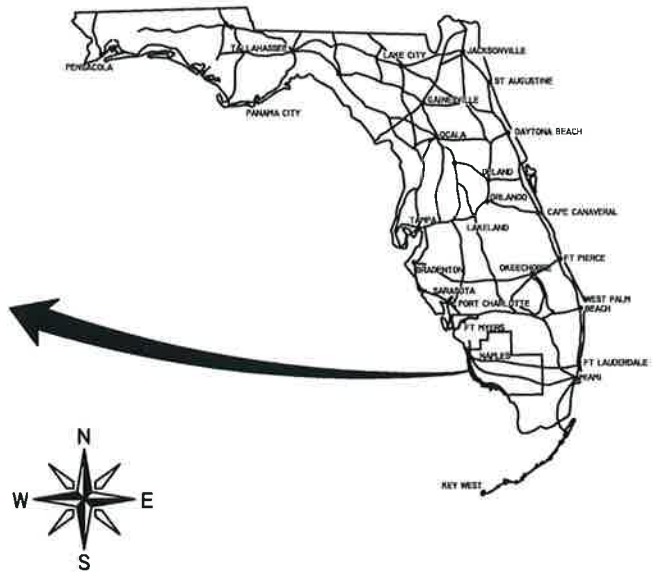
The Big Cypress Stewardship District totals 22,210± acres and is located in Sections 14, 23, 24, 25, 26, 27, 28, 34, and 35; Township 47 South; Range 28 East; Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; and Sections 1, 2, 3, 10, 11, 12, 15, 22, 27, and 34; Township 49 South; Range 28 East; Collier County (Figure 1). The Project site is located east of Golden Gate Estates in Eastern Collier County and is bisected at the north end by Immokalee Road and in the middle by Oil Well Road. The Project site is bounded by Golden Gate Estates on the west and Camp Keais Strand on the east. The Project site's surrounding land uses are a mixture of row crops and improved pasture; undeveloped, forested land; and residential development.

The Project site has been used for agricultural operation since the early 1900's. Approximately 72 percent of the Project site is currently used for active agricultural activities including row crops and improved pasture. The majority of the Project site has been affected by drainage ditches, agriculture, and the infestation of Brazilian pepper (*Schinus terebinthifolius*), which makes the overall Project site marginal habitat for deer and hog.

METHODOLOGY

Two methodologies were utilized for the deer and hog surveys conducted on the Big Cypress Stewardship District. The first methodology utilized strip transect sampling as described by Buckland *et al.* (2001) and Borchers *et al.* (2002). The second methodology utilized track count methodology as described by Tyson (1952) and Harlow and Jones (1965).





PROJECT LOCATION

SEC 14,23,24,25,26,27,28,34 & 35,
TWP 47 S, RGE 28 E
SEC 1,2,3,10,11,12,13,14,15,22,23,24,25,
26,27,34,35 & 36, TWP 48 S, RGE 28 E
SEC 1,2,3,10,11,15,22,27 & 34,
TWP 49 S, RGE 28 E

IMMOKALEE RD
AVE MARIA
CAMP KEAIS RD
SR 29
LEE COUNTY
COLLIER COUNTY
OIL WELL ROAD
OIL WELL RD
IMMOKALEE RD
GOLDEN GATE ESTATES
VANDERBILT BEACH RD EXT.
GOLDEN GATE BLVD
LOGAN BLVD
PINE RIDGE RD
CR 951 (COLLIER BLVD)
EVERGLADES BLVD
SANTA BARBARA BLVD
(EXIT 101)
I-75

J:\2005\05cem\81\2008\DEIR AND HOA SURVEY\FIGURE 1 PROJECT LOCATION MAP.DWG TAB: LAYOUT1 JAN 22, 2007 - 1:55PM PLOTTED BY: THOMES

FIGURE 1. PROJECT LOCATION MAP
BIG CYPRESS STEWARDSHIP DISTRICT

DRAWN BY	DATE
J.I.	1/4/08
REVIEWED BY	DATE
C.G.R.	1/4/08
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

The two methodologies were utilized because of the differences in the land uses investigated. The strip transect survey methodology was used for the agricultural land use areas and the track count methodology was used for the native forested areas. The strip transect survey traversed row crop fields and improved pastures where prey species could easily be seen. This method was also utilized because these agricultural areas were heavily impacted by daily farming activities that included a steady presence of farming equipment, trucks, and workers. These activities make it impossible to conduct track counts as most tracks would be destroyed. The track count survey methodology was suitable for the natural, forested areas on-site. The non-vegetated and unimproved trails allowed easy detection of tracks as these trails were not disturbed by human activities. The thick vegetation of the forested areas did not allow the use of the strip transect survey methodology which depends on the ability to see deer and hogs. Results are presented for each survey type, respectively.

Strip Transect Survey Methodology

Strip transect sampling was conducted during the mornings of January 9, 10, 11, 15, 16, 30, and 31, 2008 and February 1, 5, 6, 19, and 20, 2008 throughout 10,202.81± acres of agricultural areas on-site. Each of the eight transects were surveyed for 6 days during this time period. Surveys were conducted based on methodologies described by Buckland *et al.* (2001) and Borchers *et al.* (2002). The eight parallel transects totaled 24.2 miles (127,776 feet). Each transect was surveyed six times during the 12 day survey period (Figure 2).

The survey transects traversed agricultural land cover types (i.e., row crop fields and improved pastures) located throughout the Project site. This survey method was utilized in the agricultural fields due to the amount of farming activity present in the fields. As this is an actively farmed area, there is a steady presence of farming equipment, trucks and workers; strip transect sampling was the method of choice because animal tracks would not be maintained in the soil long enough to be counted if track count sampling was utilized. Surveys began shortly following sunrise each day. While deer may be observed during any time of the day, movements generally peak around dawn and dusk (Marchinton and Hirth 1984). Surveys were conducted by qualified ecologists traversing transects by vehicle, at speeds of less then or equal to five miles per hour.

Upon the observation of white-tailed deer or feral hog, data was recorded in the field. Data recorded upon the observation of animals included the number and species (i.e., white-tailed deer or feral hog) of animals in the observed group, the azimuth to the center of the group of animals at initial observation, the exact distance to the center of the group of animals at first observation, and the azimuth in the direction of travel of the transect. Additional parameters were calculated from the data collected in the field. Calculated parameters included the sighting angle in degrees, the sighting angle converted from degrees to radians, and the perpendicular distance or the center of the group of animals at first observation from the transect (Figure 3).

SCALE: 1" = 6000'

LEGEND:

TRACK COUNT SURVEY

STRIP TRANSECT SURVEY

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2007.

PROPERTY BOUNDARY FROM RAYMOND MARCH, P.E. DRAWING No. 07-063M.DWG DATED OCTOBER 18, 2007.

DRAWN BY	DATE
J.I.	4/25/08
REVIEWED BY	DATE
B.B.	4/25/08
REVISED	DATE

13620 Metropolis Avenue
Suite 200
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Phone (239) 274-0067
Fax (239) 274-0069

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Consulting Ecologists

BIG CYPRESS STEWARDSHIP DISTRICT

AERIAL WITH FLORIDA PANTHER PREY SPECIES SURVEY TRANSECTS

DRAWING No. 05CEM1481

SHEET No. FIGURE 2

J:\2005\05CEM\481\2008\DEER AND HOG SURVEY\FIGURE 2 AERIAL WITH PANTHER PREY SURVEY TRANSECTS.DWG TAB: IIX17-C TB JUN 22, 2017 - 1:46PM PLOTTED BY: THONES

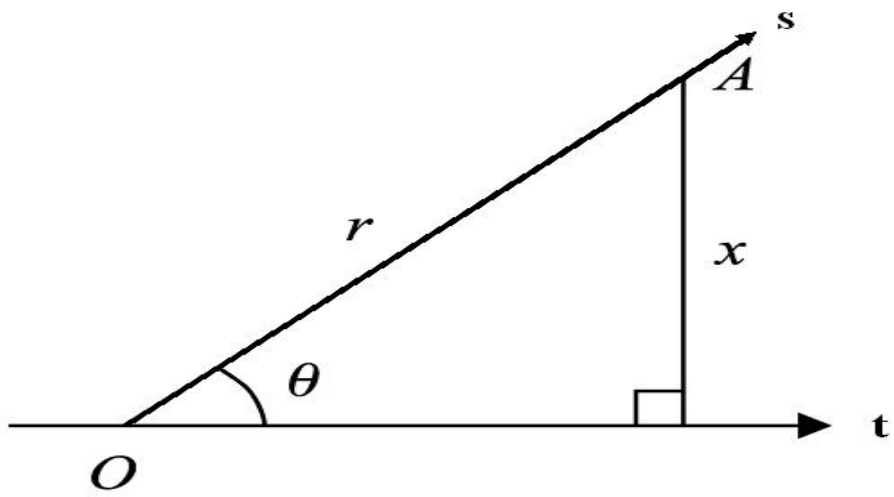

Figure 3. **Strip Transect Sampling Method** (Adapted from Borchers *et al.* 2002) Observer at O observes animal (or group of animals) at A and measures azimuth to animal s, azimuth along transect t, and distance to animal r. θ is calculated as the difference between t and s (90º or less) and converted to radians. Perpendicular distance of animal from transect x is calculated as r(sin(θ)).

Following the methods described by Buckland *et al*. (2001) and Borchers *et al*. (2002), daily population estimates were generated. The surveyed area (in acres) was calculated as twice the maximum observed perpendicular distance (in feet) times the length of all transects (in feet) divided by 43,560 feet.

$$\text{Survey Area} = 2 \times \frac{(\text{Total Miles of Transects} \times 5{,}280) \times (\text{Maximum Perpendicular Distance} \times 3)}{43{,}560}$$

The daily population estimate was calculated as the number of observed groups divided by the surveyed area times the average size of observed groups times the overall acreage of the property.

$$\text{Population Estimate} = \frac{\text{No. Groups}}{\text{Surveyed Area}} \times \text{Average Group Size} \times \text{Acres in Area}$$

Track Count Survey Methodology

Track counts were conducted during the morning hours of January 9, 10, 11, 15, 16, 30, and 31, 2008 and February 1, 5, 6, 19, and 20, 2008 throughout 12,006.95± acres of natural areas on-site. Nine transects totaling 6.1 miles (32,075 feet) were established on dirt vehicle trails which traversed representative native habitats on the Project site (Figure 2). This survey methodology

was utilized in the natural, forested areas on-site. Trail segments were selected for inclusion in the track count survey based on availability of open, non-vegetated areas that allowed easy detection of tracks. Also due to the amount of thick vegetation present, documenting actual deer and hog sightings, as in the strip transect method, would not have been possible. Approximate transect length ranged from 5,712 feet to 1,263 feet. Transects 2 through 9 were each surveyed six times during the 12 day survey period. Transect 1 was surveyed five times.

Track count surveys were conducted based on methodologies developed by Tyson (1952) and Harlow and Jones (1965). Track counts were conducted in the morning beginning approximately 1.5 hours after sunrise. Track counts were made by a qualified ecologist traversing the survey road on foot. Survey trails were cleared of tracks by hand raking following each morning survey.

White-tailed deer population was estimated based on track counts using the following formula (Tyson 1952, Harlow and Jones 1965):

$$\text{Deer Population Index} = \frac{\text{Number of Tracks Counted}}{\text{Number of Miles Traveled}} \text{ X } \frac{\text{Acres in Area}}{640}$$

The population estimate assumes a daily range for white-tailed deer of approximately one mile (640 acres) for South Florida (Tyson 1952). Although originally used as a population estimator, this formula is now used to provide an index to relative abundance from year to year.

RESULTS

Strip Transect Survey

Observations for white-tailed deer and feral hogs recorded during the survey period are presented in Table 1. Each transect was surveyed six times during the survey period. Since the land cover types along each transect were similar, the data was pooled for the survey period. There were a total of six groups of white-tailed deer consisting of nine individual animals and two feral hogs observed during the survey period (Table 1). Daily deer population estimates ranged from 0 to 20 for the survey period. (Appendix A). The average daily deer population estimate for the survey period was 4.1. Along with white-tailed deer and feral hogs, other wildlife was observed during the survey. Additional wildlife observations were recorded on the observation forms (Appendix B). Calculations of population estimates are included as Appendix C.

Table 1. White-Tailed Deer and Feral Hog Observations During Strip Transect Sampling Survey

Date	Transect	Distance (Miles)	Deer	Hog
January 9, 2008	3	2.9	1	-
January 10, 2008	3	2.9	1	-

Table 1. (Continued)

Date	Transect	Distance (Miles)	Deer	Hog
January 10, 2008	3	2.9	2	-
January 15, 2008	3	2.9	2	-
February 19, 2008	3	2.9	2	-
January 9, 2008	4	3.4	1	-
January 15, 2008	4	3.4	-	2
Totals		**21.3**	**9**	**2**

During the Project's January – February 2008 survey period, a total of six groups of white-tailed deer consisting of nine individual animals and two individual feral hog were observed during the strip transect survey (Table 1). Based on these visual observations, a daily deer population estimate was generated for each day that a survey was conducted according to the strip transect sampling methodology. The daily deer population estimate for the survey period ranged from 0-20 deer, with an average of 4.1 for the entire survey period (Appendix A).

Two feral hogs were observed on one day during the survey period; the calculated daily hog population estimate on that day was 86 hogs. Due to the observed hogs close proximity to the surveyor (25 yards) the area (square feet) surveyed was greatly reduced for that particular transect; therefore, the calculated hog population may have been greatly over estimated.

Track Count Survey

Daily crossing counts for white-tailed deer and feral hog recorded on the survey trails based on tracks counts are presented in Appendix D. Track counts for deer were averaged per foot of survey trail walked, per day, per segment. Approximately 35.3 total miles of trails were surveyed during the track count study period. The Deer Population Index for the Project site was estimated to be 93.0, yielding an estimated 129.1 acres per deer in the 12,006.95± acres of natural areas on the Project site (Table 2). There were 71 hog tracks observed in the ten days, which is an average of 7.1 hog tracks recorded per day on the approximately 35.3 total miles of trails surveyed during the study period. Some of the animal tracks other than white-tailed deer and feral hog that were recorded included Florida panther (*Puma concolor coryi*), Florida black bear (*Ursus americanus floridanus*), bobcat (*Lynx rufus*), turkey, raccoon (*Procyon lotor*), otter, rabbit, turtle, oppossum (*Didelphis virginiana*), coyote (*Canis latrans*), and snake. Observation forms are included as Appendix E. Weather was consistent across survey dates (Appendix F).

Table 2. DPI Estimate for Track Count Survey

Natural Area Acreage	Miles Traveled	Total Deer Tracks Observed	Total Hog Tracks Observed	DPI	Acres/Deer
12,006.95±	35.3	175	71	93.0	129.1

The results of the January – February 2008 track count surveys based on the DPI estimate of 93.0 indicated 129.1± acres per deer on the Project site (Table 2). There was an average of 7.1 hog tracks recorded per day on approximately 35.3 total miles of surveyed trails.

Due to the relative homogeneity of on-site and off-site land cover types combined with the home range size estimate of one mile for white-tailed deer in the Southeastern United States (Marchinton and Hirth 1984), it is likely that some of the deer observed on the Project have at least portions of their home ranges that include off-site lands. The actual number of white-tailed deer that have home ranges consisting of entirely on-site land cover types is probably smaller than the overall population estimate that was calculated during this survey. As such, population estimates included white-tailed deer that rely only partially on land-cover types located within the boundary of the Project to meet daily, seasonal, and annual life history requirements. Likewise, the feral hog that was observed during the survey may have portions of its home range that include off-site land cover types. Additionally, there are no natural or man-made obstacles to emigration or immigration between on-site and off-site habitats.

For comparison, 50.0± acres per deer was estimated at Cecil Webb Wildlife Management area based on deer counts taken by the Florida Fish and Wildlife Conservation Commission in October 2000 (Mike Kemmerer, personal communication). Estimated deer densities based on both track and aerial counts for wildlife management units in Big Cypress National Preserve have been typically greater than 100.0± acres per deer (Appendices G, H, and I) (Steelman *et al*. 1999). Big Cypress National Preserve studies encompassed land units of 32,000± to 300,000± acres. Recent density estimates based on track counts conducted in Corkscrew Marsh (12,900± acres) were 249.0± acres per deer (Steelman *et al*. 1999).

DISCUSSION

White-tailed deer and feral hog census surveys were conducted within agricultural areas (10,202.81± acres) and natural forested areas (12,006.95± acres). White-tailed deer and feral hog census numbers for the agricultural areas are much lower then census numbers for the natural, forested areas. Only nine deer and two feral hogs were observed in the agricultural areas (Table 1). These observations resulted in a daily deer population estimate that ranged from 0-20 deer, with an average of 4.1 deer for the entire survey period.

A total of 175 deer tracks and 71 feral hog tracks were observed for the natural, forested areas. This resulted in a DPI of 93.0 or 129.1 acres per deer. This census estimate is proximate to census estimates for Big Cypress National Preserve (greater than 100.0± acres per deer).

The lack of cover and high disturbance of farming activity most likely explains the very low prey base for the agricultural areas. The favorable prey base for the forested areas is most likely due to low human disturbance and adequate food, water, and shelter for white-tailed deer and feral hogs. During the survey period Florida panther sign was observed in the natural, forested areas with the suitable prey base, while no Florida panther sign was observed in the agricultural areas with the very poor prey base estimate.

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APPENDIX A

DAILY DEER POPULATION INDEX ESTIMATES FOR THE STRIP TRANSECT SURVEY

Appendix A. Daily Deer Population Index Estimates for the Strip Transect Survey

Date	Transect	Distance (Miles)	Deer	Hog	Calculated Daily Deer Population Estimate	Calculated Daily Hog Population Estimate
January 9, 2008	1	3.1	0	0	13	0
January 9, 2008	2	3.7	0	0		
January 9, 2008	3	2.9	1	0		
January 9, 2008	4	3.4	1	0		
January 10, 2008	1	3.1	0	0	12	0
January 10, 2008	2	3.7	0	0		
January 10, 2008	3	2.9	3	0		
January 10, 2008	4	3.4	0	0		
January 11, 2008	1	3.1	0	0	0	0
January 11, 2008	2	3.7	0	0		
January 11, 2008	3	2.9	0	0		
January 11, 2008	4	3.4	0	0		
January 15, 2008	1	3.1	0	0	0	86
January 15, 2008	2	3.7	0	0		
January 15, 2008	3	2.9	2	0		
January 15, 2008	4	3.4	0	2		
January 16, 2008	1	3.1	0	0	0	0
January 16, 2008	2	3.7	0	0		
January 16, 2008	3	2.9	0	0		
January 16, 2008	4	3.4	0	0		
January 30, 2008	5	3.8	0	0	0	0
January 30, 2008	6	2.8	0	0		
January 30, 2008	7	2.9	0	0		
January 30, 2008	8	1.6	0	0		
January 31, 2008	5	3.8	0	0	0	0
January 31, 2008	6	2.8	0	0		
January 31, 2008	7	2.9	0	0		
January 31, 2008	8	1.6	0	0		
February 1, 2008	5	3.8	0	0	0	0
February 1, 2008	6	2.8	0	0		
February 1, 2008	7	2.9	0	0		
February 1, 2008	8	1.6	0	0		

Appendix A. (Continued)

Date	Transect	Distance (Miles)	Deer	Hog	Calculated Daily Deer Population Estimate	Calculated Daily Hog Population Estimate
February 5, 2008	5	3.8	0	0	0	0
February 5, 2008	6	2.8	0	0		
February 5, 2008	7	2.9	0	0		
February 5, 2008	8	1.6	0	0		
February 6, 2008	5	3.8	0	0	0	0
February 6, 2008	6	2.8	0	0		
February 6, 2008	7	2.9	0	0		
February 6, 2008	8	1.6	0	0		
February 19, 2008	1	3.1	0	0	20	0
February 19, 2008	2	3.7	0	0		
February 19, 2008	3	2.9	2	0		
February 19, 2008	4	3.4	0	0		
February 20, 2008	5	3.8	0	0	0	0
February 20, 2008	6	2.8	0	0		
February 20, 2008	7	2.9	0	0		
February 20, 2008	8	1.6	0	0		

APPENDIX B

FLORIDA PANTHER PREY SPECIES SURVEY OBSERVATION FORMS FOR THE STRIP TRANSECT SURVEY

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 9, 2008 Observer(s): Jean Ihnat & Stuart Spoede

Transect: 1 Start Time: 0700 End Time: 0730 Transect Length: 3.1 miles (16,595 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Red-shouldered hawk, otter, little blue heron, great egret, killdeer, belted kingfisher, and black vulture

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 10, 2008 Observer(s): Matt Brosious & Jean Ihnat

Transect: 1 Start Time: 0709 End Time: 0731 Transect Length: 3.1 miles (16,595 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Rooster, great egret, common ground dove, great blue heron, white ibis, boat-tailed grackles, mourning dove, deer tracks, and crested caracara (two in flight toward the west)

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 11, 2008 Observer(s): Chris Emblidge & Debbie Tyson

Transect: 1 Start Time: 0715 End Time: 0745 Transect Length: 3.1 miles (16,595 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Great egret, red-winged black bird, great blue heron, red-shouldered hawk, belted kingfisher, and little blue heron

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 15, 2008 Observer(s): Jonathan Bakken & Matt Brosious

Transect: 1 Start Time: 0702 End Time: 0720 Transect Length: 3.1 miles (16,595 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Anhinga, great blue heron, red-shouldered hawk, and great egret

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 16, 2008 Observer(s): Jonathan Bakken & Matt Brosious

Transect: 1 Start Time: 0708 End Time: 0725 Transect Length: 3.1 miles (16,595 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Great egret, great blue heron, red-shouldered hawk, and killdeer

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: February 19, 2008 Observer(s): Jean Ihnat and Stuart Spoede

Transect: 1 Start Time: 0658 End Time: 0716 Transect Length: 3.1 miles (16,595 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Great blue heron, great egret, belted kingfisher, Carolina wren, cattle egret, turkey vulture, red-shouldered hawk, American anhinga, and boat-tailed grackle

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 9, 2008 Observer(s): Jean Ihnat & Stuart Spoede

Transect: 2 Start Time: 0730 End Time: 0800 Transect Length: 3.7 miles (19,585 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Red-shouldered hawk, otter, little blue heron, great egret, cormorant, belted kingfisher, anhinga, and turkey vulture

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 10, 2008 Observer(s): Matt Brosious & Jean Ihnat

Transect: 2 Start Time: 0735 End Time: 0800 Transect Length: 3.7 miles (19,585 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Tri-colored heron, belted kingfisher, red-shouldered hawk, killdeer, great egret, mourning doves, and anhinga

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 11, 2008 Observer(s): Chris Emblidge & Debbie Tyson

Transect: 2 Start Time: 0745 End Time: 0815 Transect Length: 3.7 miles (19,585 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Great egret, killdeer, little blue heron, red-shouldered hawk, anhinga, ground dove, belted kingfisher, and American robin

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 15, 2008 Observer(s): Jonathan Bakken & Matt Brosious

Transect: 2 Start Time: 0720 End Time: 0745 Transect Length: 3.7 miles (19,585 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Killdeer, red-shouldered hawk, and otter

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 16, 2008 Observer(s): Jonathan Bakken & Matt Brosious

Transect: 2 Start Time: 0726 End Time: 0747 Transect Length: 3.7 miles (19,585 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Belted kingfisher, white ibis, anhinga, red-shouldered hawk, American crow, and turkey vulture

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: February 19, 2008 Observer(s): Jean Ihnat & Stuart Spoede

Transect: 2 Start Time: 0717 End Time: 0739 Transect Length: 3.7 miles (19,585 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Mourning dove, great egret, Carolina wren, American robin, otter tracks, wood stork, and cattle egret

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 9, 2008 Observer(s): William R. Cox & Laura Zepp

Transect: 3 Start Time: 0826 End Time: 0906 Transect Length: 2.9 miles (15,412 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
1 deer	0855	80°	90 yards	180°	214

Other Wildlife Observations (Deer and Hog Recorded Above):

Coyote tracks, opossum, raccoon, belted kingfisher, tree swallow, red-winged blackbird, red-shouldered hawk, Carolina wren, boat-tailed grackle, American robin, otter tracks, killdeer, yellow-rumped warbler, turkey vulture, Northern cardinal, Eastern phoebe, great egret, white ibis, mourning dove, peregrine falcon, little blue heron, great blue heron, tri-colored heron, glossy ibis, American alligator, deer tracks, and red-shouldered hawk

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 10, 2008 Observer(s): William R. Cox & Cheryl Rolph

Transect: 3 Start Time: 0755 End Time: 0845 Transect Length: 2.9 miles (15,412 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
1 deer	0820	N/A	0	90°	214
1 deer	0827	350°	266 yards	90°	214

Other Wildlife Observations (Deer and Hog Recorded Above):

Deer tracks, great egrets, common moorhen, mourning doves, white ibis, glossy ibis, turkey vultures, American robins, Florida sandhill cranes, belted kingfisher, otter tracks, and alligator tracks

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 11, 2008 Observer(s): Bethany Bachelor & David Anthony

Transect: 3 Start Time: 0759 End Time: 0823 Transect Length: 2.9 miles (15,412 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Little blue heron, great egret, belted kingfisher, red-shouldered hawk, cattle egret, white ibis, wood stork, tri-colored heron, glossy ibis, great blue heron, and American robin

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 15, 2008 Observer(s): William R. Cox & Stuart Spoede

Transect: 3 Start Time: 0813 End Time: 0856 Transect Length: 2.9 miles (15,412 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
2 deer	0834	N/A	0	25°	214

Other Wildlife Observations (Deer and Hog Recorded Above):

Mourning dove, common ground dove, great egret, little blue heron, hog tracks, great blue heron, killdeer, otters, common moorhens, and white ibis

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 16, 2008 Observer(s): Stuart Spoede & William R. Cox

Transect: 3 Start Time: 0820 End Time: 0858 Transect Length: 2.9 miles (15,412 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

American robins, killdeer, wood stork, otter, belted kingfisher, white ibis, glossy ibis, little blue heron, tri-colored heron, great blue heron, common moorhen, and mourning dove

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: February 19, 2008 Observer(s): Jonathan Bakken & William R. Cox

Transect: 3 Start Time: 0800 End Time: 0847 Transect Length: 2.9 miles (15,412 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
2 white-tailed deer	0800	180^{o}	108.3 yards	90^{o}	Tomato Field

Other Wildlife Observations (Deer and Hog Recorded Above):

Little blue heron, mourning doves, hog tracks, anhinga, tri-colored heron, glossy ibis, and otter tracks

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 9, 2008 Observer(s): Laura Zepp & William R. Cox

Transect: 4 Start Time: 0715 End Time: 0830 Transect Length: 3.4 miles (18,119 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
1 deer	0728	60°	170 yards	140°	214

Other Wildlife Observations (Deer and Hog Recorded Above):

Great egret, killdeer, peregrine falcon, red-shouldered hawk, otter, panther tracks, little blue heron, Carolina wren, sandhill cranes, belted kingfisher, American anhinga, greater yellowlegs, boat-tailed grackle, yellow-rumped warbler, American kestrel, tri-colored heron, red-winged blackbird, white ibis, snowy egrets (15), tree swallows, wood storks, Eastern meadowlarks, deer tracks, catbird, squirrel nest, and black vultures (50)

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 10, 2008 Observer(s): William R. Cox & Cheryl Rolph

Transect: 4 Start Time: 0715 End Time: 0750 Transect Length: 3.4 miles (18,119 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Wood storks (5) in a plowed field, American kestrel, red-shouldered hawk, little blue heron, otter, palm warblers, American anhinga, boat-tailed grackle, greater yellowlegs, great egret, great blue heron, Eastern meadowlarks, and Carolina wren

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 11, 2008 Observer(s): Bethany Bachelor & David Anthony

Transect: 4 Start Time: 0713 End Time: 0744 Transect Length: 3.4 miles (18,119 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Wood stork, sandhill crane, little blue heron, tri-colored heron, and red-shouldered hawk

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 15, 2008 Observer(s): William R. Cox & Stuart Spoede

Transect: 4 Start Time: 0720 End Time: 0805 Transect Length: 3.4 miles (18,119 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
2 hogs	0725	180°	25 yards	90°	214

Other Wildlife Observations (Deer and Hog Recorded Above):

Belted kingfisher, wood stork, great egret, great blue heron, killdeer, American anhinga, red-shouldered hawk, alligator slide, bear tracks, otter tracks, little blue heron, red-winged blackbird, cattle egret, boat-tailed grackle, loggerhead shrike, and Eastern meadowlark

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: January 16, 2008 Observer(s): Stuart Spoede & William R. Cox

Transect: 4 Start Time: 0721 End Time: 0814 Transect Length: 3.4 miles (18,119 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Wood storks (15), killdeer, greater yellowlegs, tri-colored heron, boat-tailed grackle, red-shouldered hawk, belted kingfisher, American anhinga, little blue heron, Florida sandhill cranes (2), great egrets, cattle egrets (>40), snowy egret, white ibis, glossy ibis, Northern harrier, and tree swallow

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (South) Project Number: 05CEM1481

Date: February 19, 2008 Observer(s): Jonathan Bakken & William R. Cox

Transect: 4 Start Time: 0721 End Time: 0814 Transect Length: 3.4 miles (18,119 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

White-tailed deer tracks, great egret, wood stork (11), white ibis, boat-tailed grackle, red-wing blackbird, otter scat, American alligator, belted kingfisher, Carolina wren, red-shouldered hawk, great blue heron, and Northern harrier

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: January 30, 2008 Observer(s): Cheryl Rolph & Jean Ihnat

Transect: 5 Start Time: 0825 End Time: 0855 Transect Length: 3.8 miles (20,020 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Turkey vultures, little blue heron, great blue heron, white ibis, and boat-tailed grackles

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: January 31, 2008 Observer(s): Chris Emblidge & Debbie Tyson

Transect: 5 Start Time: 0730 End Time: 0810 Transect Length: 3.8 miles (20,020 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Black vulture, great blue heron, red-shouldered hawk, belted kingfisher, little blue heron, pileated woodpecker, and killdeer

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 1, 2008 Observer(s): David Anthony & Stuart Spoede

Transect: 5 Start Time: 0707 End Time: 0731 Transect Length: 3.8 miles (20,020 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Common grackle, boat-tailed grackle, belted kingfisher, turkey vulture, mourning dove, great egret, killdeer, and little blue heron.

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 5, 2008 Observer(s): Jonathan Bakken & Stuart Spoede

Transect: 5 Start Time: 0812 End Time: 0843 Transect Length: 3.8 miles (20,020 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Great blue heron, turkey vultures, little blue heron, boat-tailed grackle, mourning dove, red-shouldered hawk, killdeer, great egret, black vultures, and Carolina wren

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 6, 2008 Observer(s): Jean Ihnat & Stuart Spoede

Transect: 5 Start Time: 0746 End Time: 0807 Transect Length: 3.8 miles (20,020 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Killdeer, common ground doves, American robins, black vultures, belted kingfisher, great egret, and little blue heron

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 20, 2008 Observer(s): Jonathan Bakken & Matt Brosious

Transect: 5 Start Time: 0807 End Time: 0835 Transect Length: 3.8 miles (20,020 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: January 30, 2008 Observer(s): Cheryl Rolph & Jean Ihnat

Transect: 6 Start Time: 0736 End Time: 0800 Transect Length: 2.8 miles (14,974 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Great egret, crested caracara, killdeer, sandhill cranes, red-shouldered hawk, and little blue heron

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: January 31, 2008 Observer(s): Chris Emblidge & Debbie Tyson

Transect: 6 Start Time: 0935 End Time: 0952 Transect Length: 2.8 miles (14,974 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Killdeer, great egret, and tree swallows

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 1, 2008 Observer(s): David Anthony & Stuart Spoede

Transect: 6 Start Time: 0738 End Time: 0753 Transect Length: 2.8 miles (14,974 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Killdeer, American robin, turkey vulture, and common grackle

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 5, 2008 Observer(s): Jonathan Bakken & Stuart Spoede

Transect: 6 Start Time: 0747 End Time: 0805 Transect Length: 2.8 miles (14,974 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Turkey, little blue heron, tri-colored heron, American robins, red-shouldered hawk, and common ground dove

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 6, 2008 Observer(s): Jean Ihnat & Stuart Spoede

Transect: 6 Start Time: 0714 End Time: 0726 Transect Length: 2.8 miles (14,974 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

White ibis, raccoon, little blue heron, great blue heron, killdeer, wood stork, and cattle egret

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 20, 2008 Observer(s): Jonathan Bakken & Matt Brosious

Transect: 6 Start Time: 0746 End Time: 0802 Transect Length: 2.8 miles (14,974 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Red-winged blackbird, common grackle, swallow, Florida sandhill crane, wood stork, and anhinga

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: January 30, 2008 Observer(s): Cheryl Rolph & Jean Ihnat

Transect: 7 Start Time: 0710 End Time: 0730 Transect Length: 2.9 miles (15,454 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Deer and panther tracks, red-shouldered hawk, and little blue heron

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: January 31, 2008 Observer(s): Chris Emblidge & Debbie Tyson

Transect: 7 Start Time: 0957 End Time: 1017 Transect Length: 2.9 miles (15,454 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Belted kingfisher, great egret, killdeer, little blue heron, and great blue heron

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 1, 2008 Observer(s): David Anthony & Stuart Spoede

Transect: 7 Start Time: 0757 End Time: 0815 Transect Length: 2.9 miles (15,454 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Turkey tracks, bobcat tracks, common grackle, otter tracks, red-shouldered hawk, American robins, cattle egret, killdeer, great egret, two sandhill cranes, and belted kingfisher

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 5, 2008 Observer(s): Jonathan Bakken & Stuart Spoede

Transect: 7 Start Time: 0720 End Time: 0744 Transect Length: 2.9 miles (15,454 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Boat-tailed grackle, otter tracks, bobcat tracks, alligator tracks, belted kingfisher, red-shouldered hawk, mourning doves, American robins, and little blue heron

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 6, 2008 Observer(s): Jean Ihnat & Stuart Spoede

Transect: 7 Start Time: 0726 End Time: 0737 Transect Length: 2.9 miles (15,454 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Common ground dove, little blue heron, red-shouldered hawk, killdeer, turkey vulture, belted kingfisher, and mourning doves

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 20, 2008 Observer(s): Jonathan Bakken & Matt Brosious

Transect: 7 Start Time: 0715 End Time: 0743 Transect Length: 2.9 miles (15,454 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Belted kingfisher, killdeer, Northern harrier, red-shouldered hawk, great blue heron, great egret, little blue heron, otter, and deer tracks

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: January 30, 2008 Observer(s): William R. Cox & Marijke Noens

Transect: 8 Start Time: 0710 End Time: 0741 Transect Length: 1.6 miles (8,249 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

American robin, cattle egret, red-winged black bird, Florida sandhill crane, yellow-rumped warbler, blue-gray gnatcatcher, and gray catbird

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: January 31, 2008 Observer(s): William R. Cox & Stuart Spoede

Transect: 8 Start Time: 0723 End Time: 0745 Transect Length: 1.6 miles (8,249 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

American robins, turkey vultures, Northern cardinal, red-tailed hawk, and gray catbird

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 1, 2008 Observer(s): William R. Cox

Transect: 8 Start Time: 0715 End Time: 0740 Transect Length: 1.6 miles (8,249 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

American robins (100's), cattle (more than 50), gray squirrel, red-tailed hawk, Florida sandhill cranes, blue jay, turkey vulture, red-shouldered hawk, and cattle egrets

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 5, 2008 Observer(s): William R. Cox, Cheryl Rolph

Transect: 8 Start Time: 0730 End Time: 0810 Transect Length: 1.6 miles (8,249 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Many cattle, Eastern meadowlarks, boat-tailed grackles, yellow-rumped and palm warblers, red-shouldered hawk, cattle egrets, great egret, American robins, Northern cardinal, turkey vultures, sparrows, and Eastern phoebe

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 6, 2008 Observer(s): William R. Cox & Bethany Bachelor

Transect: 8 Start Time: 0720 End Time: 0737 Transect Length: 1.6 miles (8,249 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

American robin, palm warbler, yellow-rumped warbler, and red-shouldered hawk

FLORIDA PANTHER PREY SPECIES
DISTANCE SAMPLING SURVEY

Walk along transects or drive transects at five miles per hour or less. Once a deer or a hog is observed, stop, use the range finder to determine distance to the animal, and use a compass to determine the azimuth to the animal. If the animal moves after you have spotted it, measurements should be taken at the point of initial observation. If multiple animals are observed as one group, use the center of the group to make measurements. If an animal is observed directly on the transect line, there will be no azimuth recorded and the distance will be recorded as zero. Take another measurement of azimuth along the line of survey. Once measurements have been taken, record them on the data sheet below. After recording the data, continue along transect and take care to avoid frightening the animals into escape behavior. If the animal engages in escape behavior, observe the direction of escape in relation to portions of transects that remain to be sampled. Be careful to avoid double counting animals.

Project Name: Big Cypress Stewardship District (North) Project Number: 05CEM1481

Date: February 20, 2008 Observer(s): William R. Cox & Stuart Spoede

Transect: 8 Start Time: 0710 End Time: 0744 Transect Length: 1.6 miles (8,249 feet)

Number & Species of Animal	Time	Azimuth to Prey	Distance to Prey	Transect Azimuth	Habitat Type (FLUCFCS)
No deer or hog were observed.					

Other Wildlife Observations (Deer and Hog Recorded Above):

Raccoon, cattle egret, Carolina wren, yellow-rumped warblers, Eastern phoebe, bear droppings, logger head shrike, and sandhill cranes (2)

APPENDIX C

WHITE-TAILED DEER AND FERAL HOG POPULATION ESTIMATES BASED ON THE STRIP TRANSECT SURVEY

January 9, 2008

Date	Transect	Distance (miles)	Observations		
1/9/2008	1	3.1	0	0	JI, SS
1/9/2008	2	3.7	0	0	JI, SS
1/9/2008	3	2.9	1 group	1 deer	WRC, LZ
1/9/2008	4	3.4	1 group	1 deer	WRC, LZ

Area Acreage 10202.8 acres

Transect	Date	Time	Species	GRP_SIZE	SIT_AZI	TRAN_AZI	SIT_ANG	RAD_ANG	SIT_DIS	PERP_DIS
3	1/9/08	8:55	deer	1	80	180	100	1 75	90	88 63
4	1/9/08	7:28	deer	1	60	140	80	1 40	170	167 42

White-tailed Deer Population Estimate

MAX_PERP	167.42 yards
SUR_AREA	1595.03 acres
OBS_GRP	2 groups
AVG_GRP	1.0 deer
POP_EST	13 deer

Feral Hog Population Estimate

MAX_PERP	167.42 yards
SUR_AREA	1595.03 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

January 10, 2008

Date	Transect	Distance (miles)	Observations		
1/10/2008	1	3.1	0	0	MB, JI
1/10/2008	2	3.7	0	0	MB, JI
1/10/2008	3	2.9	2 groups	3 deer	WRC, CGR
1/10/2008	4	3.4	0	0	WRC, CGR

Area Acreage 10202.8 acres

Transect	Date	Time	Species	GRP_SIZE	SIT_AZI	TRAN_AZI	SIT_ANG	RAD_ANG	SIT_DIS	PERP_DIS
3	1/10/08	8:20	deer	1	90	90	0	0 00	0	0 00
3	1/10/08	8:27	deer	2	350	90	260	4 54	266	261 96

White-tailed Deer Population Estimate

MAX_PERP	261.96 yards
SUR_AREA	2495 76 acres
OBS_GRP	2 groups
AVG_GRP	1.5 deer
POP_EST	12 deer

Feral Hog Population Estimate

MAX_PERP	261.96 yards
SUR_AREA	2495.76 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

January 11, 2008

Date	Transect	Distance (miles)	Observations		
1/11/2008	1	3.1	0	0	DT, CE
1/11/2008	2	3.7	0	0	DT, CE
1/11/2008	3	2.9	0	0	BB, DA
1/11/2008	4	3.4	0	0	BB, DA

Area Acreage 10202.8 acres

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

January 15, 2008

Date	Transect	Distance (miles)	Observations		
1/15/2008	1	3.1	0	0	JB, MB
1/15/2008	2	3.7	0	0	JB, MB
1/15/2008	3	2.9	1 group	2 deer	WRC, SS
1/15/2008	4	3.4	1 group	2 hogs	WRC, SS

Area Acreage 10202.8 acres

Transect	Date	Time	Species	GRP_SIZE	SIT_AZI	TRAN_AZI	SIT_ANG	RAD_ANG	SIT_DIS	PERP_DIS
3	1/15/08	8:34	deer	2	25	25	0	0 00	0	0 00
4	1/15/08	7:25	hog	2	180	90	90	1 57	25	25 00

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	238.18 acres
OBS_GRP	1 groups
AVG_GRP	2.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	25.00 yards
SUR_AREA	238.18 acres
OBS_GRP	1 groups
AVG_GRP	2 hog
POP_EST	86 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

January 16, 2008

Date	Transect	Distance (miles)
1/16/2008	1	3.1
1/16/2008	2	3.7
1/16/2008	3	2.9
1/16/2008	4	3.4

Observations		
0	0	JB, MB
0	0	JB, MB
0	0	WRC, SS
0	0	WRC, SS

Area Acreage 10202.8 acres

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

January 30, 2008

Date	Transect	Distance (miles)
1/30/2008	5	3.8
1/30/2008	6	2.8
1/30/2008	7	2.9
1/30/2008	8	1.6

Observations		
0	0	CGR, JI
0	0	CGR, JI
0	0	CGR, JI
0	0	WRC, MN

Area Acreage 10202.8 acres

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

January 31, 2008

Date	Transect	Distance (miles)
1/31/2008	5	3.8
1/31/2008	6	2.8
1/31/2008	7	2.9
1/31/2008	8	1.6

Observations		
0	0	CE, DT
0	0	CE, DT
0	0	CE, DT
0	0	WRC, SS

Area Acreage 10202.8 acres

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

February 1, 2008

Date	Transect	Distance (miles)
2/1/2008	5	3.8
2/1/2008	6	2.8
2/1/2008	7	2.9
2/1/2008	8	1.6

Observations		
0	0	DA, SS
0	0	DA, SS
0	0	DA, SS
0	0	WRC

Area Acreage 10202.8 acres

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

February 5, 2008

Date	Transect	Distance (miles)
2/5/2008	5	3.8
2/5/2008	6	2.8
2/5/2008	7	2.9
2/5/2008	8	1.6

Observations		
0	0	JB, SS
0	0	DA, SS
0	0	JB, SS
0	0	WRC, CGR

Area Acreage 10202.8 acres

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

February 6, 2008

Date	Transect	Distance (miles)
2/6/2008	5	3.8
2/6/2008	6	2.8
2/6/2008	7	2.9
2/6/2008	8	1.6

Observations		
0	0	JI, SS
0	0	JI, SS
0	0	JI, SS
0	0	WRC, BB

Area Acreage 10202.8 acres

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

February 19, 2008

Date	Transect	Distance (miles)	Observations		
2/19/2008	1	3.1	0	0	JI, SS
2/19/2008	2	3.7	0	0	JI, SS
2/19/2008	3	2.9	1 group	2 deer	JB, WRC
2/19/2008	4	3.4	0	0	JB, WRC

Area Acreage 10202.8 acres

Transect	Date	Time	Species	GRP_SIZE	SIT_AZI	TRAN_AZI	SIT_ANG	RAD_ANG	SIT_DIS	PERP_DIS
3	2/19/08	8:00	deer	2	180	90	90	1.57	108	108.00

White-tailed Deer Population Estimate

MAX_PERP	108.00 yards
SUR_AREA	1028.95 acres
OBS_GRP	1 groups
AVG_GRP	2.0 deer
POP_EST	20 deer

Feral Hog Population Estimate

MAX_PERP	108.00 yards
SUR_AREA	1028.95 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

February 20, 2008

Date	Transect	Distance (miles)	Observations	
1/9/2008				
2/20/2008	5	3.8	0	0 JB, MB
2/20/2008	6	2.8	0	0 JB, MB
2/20/2008	7	2.9	0	0 JB, MB
2/20/2008	8	1.6		0 WRC, SS

Area Acreage 10202.8 acres

White-tailed Deer Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0.0 deer
POP_EST	0 deer

Feral Hog Population Estimate

MAX_PERP	0.00 yards
SUR_AREA	0.00 acres
OBS_GRP	0 groups
AVG_GRP	0 hog
POP_EST	0 hog

GRP_SIZE	= Group Size as observed in the field during survey
SIT_AZI	= Sighting Azimuth from observer to center of group at first observation
TRAN_AZI	= Transect Azimuth from observer along transect at observition point
SIT_ANG	= Sighting Angle, the difference between Sighting Azi and Transect Azi
RAD_ANG	= Radians Angle, the Sighting Angle converted from degrees to radians
SIT_DIS	= Sighting Distance from observer to center of group at first observation
PERP_DIS	= Perpendicular Distance, the perpendicular distance of center group from the transect line at first observation
MAX_PERP	= Maximum Perpendicular Distance or half effective strip width
SUR_AREA	= Surveyed Area, the effective strip width X length of transects
OBS_GRP	= Number of Groups Observed during survey
AVG_GRP	= Average Group Size
POP_EST	= Population Estimate for entire project area

APPENDIX D

WHITE-TAILED DEER AND FERAL HOG TRACK COUNTS

Appendix D. White-Tailed Deer and Feral Hog Track Counts

Transect	Date	Deer	Hog
1	January 9, 2008	1	0
	January 10, 200	2	0
	January 11, 2008	2	0
	January 15, 2008	0	0
	January 16, 2008	0	0
2	January 9, 2008	7	4
	January 10, 200	5	5
	January 11, 2008	3	1
	January 15, 2008	5	13
	January 16, 2008	4	3
	February 19, 2008	8	0
3	January 9, 2008	1	0
	January 10, 200	0	0
	January 11, 2008	0	1
	January 15, 2008	0	0
	January 16, 2008	0	0
	February 19, 2008	0	0
4	January 9, 2008	3	10
	January 10, 200	11	3
	January 11, 2008	0	3
	January 15, 2008	4	1
	January 16, 2008	8	1
	February 19, 2008	4	0
5	January 30, 2008	1	1
	January 31, 2008	0	0
	February 1, 2008	4	1
	February 5, 2008	0	0
	February 6, 2008	0	0
	February 20, 2008	4	0
6	January 30, 2008	4	7
	January 31, 2008	1	5
	February 1, 2008	2	2
	February 5, 2008	1	4
	February 6, 2008	0	7
	February 20, 2008	10	0

Appendix D. (Continued)

Transect	Date	Deer	Hog
7	January 30, 2008	1	5
	January 31, 2008	1	2
	February 1, 2008	1	3
	February 5, 2008	3	9
	February 6, 2008	7	3
	February 20, 2008	1	1
8	January 30, 2008	5	0
	January 31, 2008	2	0
	February 1, 2008	3	0
	February 5, 2008	1	0
	February 6, 2008	0	2
	February 20, 2008	0	0
9	January 30, 2008	2	1
	January 31, 2008	5	0
	February 1, 2008	3	0
	February 5, 2008	0	0
	February 6, 2008	2	0
	February 20, 2008	0	0
Total		**175**	**71**

APPENDIX E

FLORIDA PANTHER PREY SPECIES SURVEY OBSERVATION FORMS FOR THE TRACK COUNT SURVEY

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 9, 2008 Start Time: 0805

Observer(s): Jean Ihnat and Stuart Spoede End Time: 1220

Weather (Start of survey)	T: 54°F	W: Calm	C: None	P: None
Weather (End of survey)	T: 80°F	W: 0-10 mph	C: <5%	P: None
Notes/Comments: Transect 1 was rolled/graded before survey was 50% complete.				

Transect 1		**Transect 3**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	1
Bobcat	1	Bobcat	1
Coyote	1	Coyote	
Deer	1	Deer	1
Gopher Tortoise		Gopher Tortoise	
Gray Fox	2	Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit		Rabbit	5
Raccoon	23	Raccoon	2
Snake		Snake	
Opossum	3	Turkey	2
Dog	3	Turtle	1
Otter	7		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 9, 2008 Start Time: 0918

Observer(s): Laura Zepp and Bill Cox End Time: 1250

Weather (Start of survey)	T: 58°F	W: 3 mph ENE	C: 30%	P: None
Weather (End of survey)	T: 76°F	W: 4 mph ENE	C: 40%	P: None
Notes/Comments: Deer rub tree, 3 hog-rootings, heard pig.				

Transect 2		**Transect 4**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	6	Bobcat	1
Coyote	7	Coyote	
Deer	7	Deer	3
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	4	Hog	10
Quail		Quail	
Rabbit	1	Rabbit	2
Raccoon	10	Raccoon	4
Snake		Snake	1
Florida Panther	10	Florida Panther	4
Opossum	1		
Squirrel Nest	1		
Turkey	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 10, 2008 Start Time: 0809

Observer(s): Matt Brosious and Jean Ihnat End Time: 1145

Weather (Start of survey)	T: 57°F	W: 0-1 mph ENE	C: <5% Fog	P: None
Weather (End of survey)	T: 80°F	W: 0-11 mph E	C: 5%	P: None
Notes/Comments:				

Transect 1		**Transect 3**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	1	Bobcat	1
Coyote		Coyote	1 (fresh scat observed)
Deer	2	Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit	3	Rabbit	5
Raccoon	12	Raccoon	1
Snake	1	Snake	
Otter	12	Turkey	2
Mouse	1	Cattle	1
Opossum	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 10, 2008 Start Time: 0850

Observer(s): Bill Cox and Cheryl Rolph End Time: 1200

Weather (Start of survey)	T: 70°F	W: Calm	C: Clear	P: None
Weather (End of survey)	T: 80°F	W: 3-5 mph E	C: Partly Cloudy	P: None

Notes/Comments: Observed otter scat, dead soft-shell turtle on Transect 2. Observed hog crossing trail on Transect 4.

Transect 2		**Transect 4**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	1
Bobcat	2	Bobcat	
Coyote	5	Coyote	
Deer	5	Deer	11
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	5	Hog	3
Quail		Quail	
Rabbit	1	Rabbit	3
Raccoon	8	Raccoon	
Snake		Snake	
Opossum	3	Turkey	4
Florida Panther	11	Florida Panther	3
Otter	4		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 11, 2008 Start Time: 0825

Observer(s): Chris Emblidge and Debbie Tyson End Time: 1131

Weather (Start of survey)	T: 58°F	W: 0-4 mph E	C: 20%	P: None
Weather (End of survey)	T: 77°F	W: 5-13 mph SSE	C: 40%	P: None
Notes/Comments:				

Transect 1		**Transect 3**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	1	Bobcat	2
Coyote		Coyote	
Deer	2	Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	1
Quail		Quail	
Rabbit	1	Rabbit	7
Raccoon	12	Raccoon	4
Snake		Snake	
Otter	17	Florida Panther	1
Turkey	2	Turkey	1

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 11, 2008 Start Time: 0834

Observer(s): David Anthony and Bethany Bachelor End Time: 1140

Weather (Start of survey)	T: 58°F	W: 0-4 mph E	C: 10%	P: None
Weather (End of survey)	T: 77°F	W: 5-13 mph SSE	C: 50%	P: None
Notes/Comments:				

Transect 2		**Transect 4**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	7	Bobcat	1
Coyote	2	Coyote	
Deer	3	Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	1	Hog	3
Quail		Quail	
Rabbit		Rabbit	
Raccoon	8	Raccoon	
Snake	2	Snake	1
Otter	5	Bird (unknown)	1
		Turkey	1

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 15, 2008 Start Time: 0753

Observer(s): Jonathan Bakken and Matt Brosious End Time: 1020

Weather (Start of survey)	T: 45°F	W: 0-6 mph NNE	C: 35%	P: None
Weather (End of survey)	T: 56°F	W: 5-16 mph NNE	C: 5%	P: None
Notes/Comments:				

Transect 1		**Transect 3**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	3	Bobcat	1
Coyote	5	Coyote	1
Deer		Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit	9	Rabbit	10
Raccoon	19	Raccoon	2
Snake		Snake	
Otter	6	Florida Panther	1
Bear	1		
Mouse	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 15, 2008 Start Time: 0903

Observer(s): Bill Cox and Stuart Spoede End Time: 1215

Weather (Start of survey)	T: 55°F	W: 0-5 mph N	C: Partly Cloudy	P: None
Weather (End of survey)	T: 75°F	W: 3-7 mph N	C: Partly Cloudy	P: None

Notes/Comments: American robins, black vultures, Carolina wren, common yellow throat, and white ibis on Transect 2. Cows on Transect 4; highly disturbed trails and obscured tracks.

Transect 2		**Transect 4**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	3	Armadillo	1
Bobcat	7	Bobcat	3
Coyote	1	Coyote	
Deer	5	Deer	4
Gopher Tortoise		Gopher Tortoise	
Gray Fox	1	Gray Fox	
Hog	13	Hog	1
Quail		Quail	
Rabbit	1	Rabbit	10
Raccoon	8	Raccoon	1
Snake		Snake	2
Opossum	4	Opossum	1
Bear	5	Bear	1
Otter	8	Florida Panther	3
Florida Panther	7	Turkey	15
Skunk	1		
Black Vulture	5		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 16, 2008 Start Time: 0800

Observer(s): Jonathan Bakken and Matt Brosious End Time: 1030

Weather (Start of survey)	T: 49°F	W: 3 mph NNE	C: 40%	P: None
Weather (End of survey)	T: 61°F	W: 12 mph ENE	C: 40%	P: None
Notes/Comments:				

Transect 1		**Transect 3**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	2	Bobcat	1
Coyote		Coyote	2
Deer		Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit	5	Rabbit	10
Raccoon	11	Raccoon	2
Snake	1	Snake	
Otter	3	Turkey	5
		Florida Panther	1

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 16, 2008 Start Time: 0905

Observer(s): Bill Cox and Stuart Spoede End Time: 1108

Weather (Start of survey)	T: 55°F	W: 5 mph E	C: 50%	P: None
Weather (End of survey)	T: 70°F	W: 5 mph E	C: 40%	P: None
Notes/Comments:				

Transect 2		**Transect 4**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	1	Armadillo	
Bobcat	2	Bobcat	1
Coyote		Coyote	
Deer	4	Deer	8
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	3	Hog	1
Quail		Quail	
Rabbit		Rabbit	6
Raccoon	2	Raccoon	
Snake		Snake	2
Otter	4	Turkey	4
Bear	1	Florida Panther	2
Turkey	1		
Florida Panther	2		
Opossum	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 30, 2008 Start Time: 0910

Observer(s): Cheryl Rolph and Jean Ihnat End Time: 1030

Weather (Start of survey)	T: 60°F	W: 2 mph SW	C: Sunny	P: None
Weather (End of survey)	T: 71°F	W: 9 mph S	C: Sunny	P: None
Notes/Comments: Otter scat observed. Heard gray catbirds and red-shouldered hawk.				

Transect 5		**Transect**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	2	Bobcat	
Coyote/Dog	3	Coyote	
Deer	1	Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	1	Hog	
Quail		Quail	
Rabbit		Rabbit	
Raccoon	6	Raccoon	
Snake		Snake	
Otter	3		
Florida Panther	2		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 30, 2008 Start Time: 0755

Observer(s): Bill Cox and Marijke Noens End Time: 1000

Weather (Start of survey)	T: 58°F	W: 2 mph ESE	C: 50%	P: None
Weather (End of survey)	T: 70°F	W: 0-8 mph SSE	C: 20%	P: None
Notes/Comments:				

Transect 6		**Transect 7**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	1
Bobcat		Bobcat	
Coyote/Dog		Coyote	
Deer	11	Deer	7
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	4	Hog	1
Quail		Quail	
Rabbit		Rabbit	1
Raccoon		Raccoon	3
Snake		Snake	
Turkey (Tracks)	1	Turkey (Tracks)	>6
Turkey (Scat)	2	Turkey (Scat)	1
Opossum	1	Florida Panther	1
		Cattle	2

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 30, 2008 Start Time: 1035

Observer(s): Bill Cox and Marijke Noens End Time: 1320

Weather (Start of survey)	T: 72°F	W: 8 mph S	C: 5%	P: None
Weather (End of survey)	T: 79°F	W: 8 mph S	C: 5%	P: None
Notes/Comments:				

Transect 8		**Transect 9**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	3	Armadillo (Dig)	1
Bobcat	3	Bobcat	1
Coyote/Dog		Coyote	
Deer	5	Deer	2
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	1
Quail		Quail	
Rabbit	2	Rabbit	1
Raccoon	2	Raccoon	3
Snake	2	Snake	2
Turkey	3	Cattle	2
Squirrel	1		
Opossum	1		
Turkey (Scat)	>1		
Bear (Scat)	1		
Bear (Track)	1		
Florida Panther	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 31, 2008 Start Time: 0811

Observer(s): Chris Emblidge and Debbie Tyson End Time: 0927

Weather (Start of survey)	T: 62°F	W: 11 mph ESE	C: 10%	P: None
Weather (End of survey)	T: 65°F	W: 8 mph E	C: 10%	P: None
Notes/Comments:				

Transect 5		**Transect**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	1	Armadillo	
Bobcat	2	Bobcat	
Coyote/Dog		Coyote	
Deer		Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit		Rabbit	
Raccoon	1	Raccoon	
Snake		Snake	
Otter	11		
Opossum	3		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 31, 2008 Start Time: 0755

Observer(s): Bill Cox and Stuart Spoede End Time: 1005

Weather (Start of survey)	T: 59°F	W: 5 mph E	C: 15%	P: None
Weather (End of survey)	T: 70°F	W: 5 mph ESE	C: 5%	P: None

Notes/Comments: Cows had trampled Transect 7 in many areas.

Transect 6		**Transect 7**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	4
Bobcat	2	Bobcat	2
Coyote/Dog		Coyote	
Deer	6	Deer	5
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	1	Hog	1
Quail		Quail	
Rabbit		Rabbit	
Raccoon		Raccoon	4
Snake		Snake	
Turkey	1	Turkey	8
Bear	1	Bear	1
		Florida Panther	1
		Squirrel	1
		Opossum	2

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: January 31, 2008 Start Time: 0800

Observer(s): Stuart Spoede and Bill Cox End Time: 1122

Weather (Start of survey)	T: 61°F	W: 10 mph ESE	C: 10%	P: None
Weather (End of survey)	T: 75°F	W: 14 mph SE	C: 80%	P: None
Notes/Comments:				

Transect 8		**Transect 9**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	5	Armadillo	3
Bobcat	2	Bobcat	
Coyote/Dog		Coyote	
Deer	2	Deer	5
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit	4	Rabbit	2
Raccoon		Raccoon	2
Snake	2	Snake	
Turkey	2		
Rat	1		
Bear	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 1, 2008 Start Time: 0825

Observer(s): David Anthony and Stuart Spoede End Time: 0950

Weather (Start of survey)	T: 63°F	W: 5 mph SE	C: 5%	P: None
Weather (End of survey)	T: 71°F	W: 11 mph SSE	C: 18%	P: None
Notes/Comments: Vehicle traffic almost to shoulder.				

Transect 5		**Transect**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	2	Bobcat	
Coyote/Dog		Coyote	
Deer	4	Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	1	Hog	
Quail		Quail	
Rabbit		Rabbit	
Raccoon	7	Raccoon	
Snake		Snake	
Otter	4		
Opossum	2		
Dog	1		
Turkey	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 1, 2008 Start Time: 0750

Observer(s): Bill Cox End Time: 1035

Weather (Start of survey)	T: 60°F	W: 2 mph SE	C: 10%	P: None
Weather (End of survey)	T: 75°F	W: 15 mph SSE	C: 30%	P: None
Notes/Comments:				

Transect 6		**Transect 7**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	2
Bobcat	2	Bobcat	2
Coyote/Dog		Coyote	
Deer	2	Deer	2
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	2	Hog	1
Quail		Quail	
Rabbit		Rabbit	2
Raccoon	1	Raccoon	3
Snake		Snake	
Turkey	6	Turkey	3
Florida Panther	1	Florida Panther	1
Bear	1	Bear	1
		Opossum	2
		Skunk	1

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 1, 2008 Start Time: 1130

Observer(s): Bill Cox End Time: 1355

Weather (Start of survey)	T: 76°F	W: 16 mph SSE	C: 40%	P: None
Weather (End of survey)	T: 81°F	W: 10 mph SSW	C: 40%	P: None
Notes/Comments:				

Transect 8		**Transect 9**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	4	Armadillo	4
Bobcat	2	Bobcat	1
Coyote/Dog		Coyote	
Deer	3	Deer	3
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit	3	Rabbit	2
Raccoon	2	Raccoon	1
Snake	1	Snake	
Florida Panther	1	Squirrel	1
Bear	1	Turkey	6
Opossum	1	Opossum	1
Turkey	2		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 5, 2008 Start Time: 0845

Observer(s): Jonathan Bakken and Stuart Spoede End Time: _____

Weather (Start of survey)	T: 65°F	W: 3 mph E	C: 0%	P: None
Weather (End of survey)	T: 73°F	W: 9 mph ESE	C: 30%	P: None
Notes/Comments:				

Transect 5		**Transect**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	2	Bobcat	
Coyote/Dog		Coyote	
Deer		Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit		Rabbit	
Raccoon	7	Raccoon	
Snake		Snake	
Turkey	1		
Opossum	2		
Otter	7		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 5, 2008 Start Time: 0820

Observer(s): Bill Cox and Cheryl Rolph End Time: 1015

Weather (Start of survey)	T: 63°F	W: 4 mph E	C: 10%	P: None
Weather (End of survey)	T: 75°F	W: 9 mph ESE	C: 10%	P: None
Notes/Comments:				

Transect 6		**Transect 7**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	6
Bobcat	2	Bobcat	2
Coyote/Dog		Coyote	
Deer	7	Deer	4
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	1	Hog	3
Quail		Quail	
Rabbit		Rabbit	4
Raccoon	3	Raccoon	2
Snake		Snake	1
Opossum	1	Opossum	2
Florida Panther	1	Squirrel	1
Turkey	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 5, 2008 Start Time: 1040

Observer(s): Bill Cox and Cheryl Rolph End Time: 1330

Weather (Start of survey)	T: 75°F	W: 14 mph ESE	C: 40%	P: None
Weather (End of survey)	T: 82°F	W: 12 mph ESE	C: 50%	P: None
Notes/Comments:				

Transect 8		**Transect 9**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	4	Armadillo	6
Bobcat	2	Bobcat	1
Coyote/Dog		Coyote	
Deer	9	Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	1	Hog	
Quail		Quail	
Rabbit	5	Rabbit	
Raccoon	4	Raccoon	1
Snake		Snake	
Rat	3	Turkey	3
Turkey	10		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 6, 2008 Start Time: 0815

Observer(s): Jean Ihnat and Stuart Spoede End Time: _____

Weather (Start of survey)	T: 62°F	W: 4 mph E	C: 70%	P: None
Weather (End of survey)	T: 70°F	W: 7 mph E	C: 70%	P:
Notes/Comments:				

Transect 5		**Transect**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	2	Bobcat	
Coyote/Dog		Coyote	
Deer		Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit		Rabbit	
Raccoon	7	Raccoon	
Snake		Snake	
Otter	8		
Turkey	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 6, 2008 Start Time: 0800

Observer(s): Bill Cox and Bethany Bachelor End Time: 0930

Weather (Start of survey)	T: 67°F	W: 1-3 mph ESE	C: Partly Cloudy	P: None
Weather (End of survey)	T: 70°F	W: 9 mph SE	C: Partly Cloudy	P: None
Notes/Comments:				

Transect 6		**Transect 7**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	3	Armadillo	3
Bobcat	2	Bobcat	3
Coyote/Dog		Coyote	
Deer	2	Deer	7
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	7
Quail		Quail	
Rabbit		Rabbit	3
Raccoon		Raccoon	3
Snake		Snake	
Turkey	2	Turkey	3
		Florida Panther	1
		Opossum	2
		Rat	1

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 6, 2008 Start Time: 1013

Observer(s): Bill Cox and Bethany Bachelor End Time: 1121

Weather (Start of survey)	T: 74°F	W: 13 mph SSE	C: Mostly Cloudy	P: None
Weather (End of survey)	T: 79°F	W: 17 mph SSE	C: Mostly Cloudy	P: None
Notes/Comments:				

Transect 8		**Transect 9**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	10	Armadillo	8
Bobcat	1	Bobcat	2
Coyote/Dog		Coyote	
Deer	3	Deer	2
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit	4	Rabbit	2
Raccoon	5	Raccoon	4
Snake		Snake	
Box Turtle	2	Turkey	2
Turkey	4	Cattle	1
Bear	2		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 19, 2008 Start Time: 0800

Observer(s): Jean Ihnat and Stuart Spoede End Time: 0853

Weather (Start of survey)	T: 64°F	W: 3-5 mph NE	C: 100%	P: Light Rain
Weather (End of survey)	T: 65°F	W: 3-31 mph WSW	C: 100%	P: Light Rain

Notes/Comments: Bobcat scat observed, cow tracks throughout trail, mourning doves and American robins heard.

Transect 3		**Transect**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat		Bobcat	
Coyote		Coyote	
Deer		Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit	2	Rabbit	
Raccoon		Raccoon	
Snake		Snake	
Florida Panther	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 19, 2008 Start Time: 0855

Observer(s): Bill Cox and Jonathan Bakken End Time: 1104

Weather (Start of survey)	T: 62°F	W: 0-5 mph NNW	C: 100%	P: Light Rain
Weather (End of survey)	T: 65°F	W: 1-3 mph NNW	C: 100%	P: Light Rain
Notes/Comments:				

Transect 2		**Transect 4**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	1	Armadillo	
Bobcat	2	Bobcat	
Coyote		Coyote	
Deer	8	Deer	4
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit	2	Rabbit	
Raccoon	1	Raccoon	
Snake		Snake	
Otter	3	Turkey	13
Opossum	3		
Florida Panther	1		
Bear	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 20, 2008 Start Time: 0845

Observer(s): Jonathan Bakken and Matt Brosious End Time: 0954

Weather (Start of survey)	T: 60°F	W: 6-11 mph NNE	C: 0%	P: None
Weather (End of survey)	T: 65°F	W: 13-16 mph NNE	C: 30%	P: None
Notes/Comments:				

Transect 5		**Transect**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo		Armadillo	
Bobcat	1	Bobcat	
Coyote	1	Coyote	
Deer	4	Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit		Rabbit	
Raccoon	5	Raccoon	
Snake		Snake	
Otter	5		
Opossum	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 20, 2008 Start Time: 0758

Observer(s): Bill Cox and Stuart Spoede End Time: 0925

Weather (Start of survey)	T: 57°F	W: 5-15 mph E	C: 5%	P: None
Weather (End of survey)	T: 63°F	W: 5-15 mph NE	C: 5%	P: None
Notes/Comments:				

Transect 7		**Transect 6**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	3	Armadillo	1
Bobcat	2	Bobcat	1
Coyote		Coyote	
Deer	1	Deer	10
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog	1	Hog	
Quail		Quail	
Rabbit	3	Rabbit	
Raccoon	3	Raccoon	3
Snake	1	Snake	
Otter	1	Turkey	3
Turkey	2		
Opossum	1		

Big Cypress Stewardship District
Deer/Hog Track Count Survey

Date: February 20, 2008 Start Time: 1031

Observer(s): Bill Cox and Stuart Spoede End Time: 1118

Weather (Start of survey)	T: 67°F	W: 5-15 mph NE	C: 30%	P: None
Weather (End of survey)	T: 70°F	W: 5-15 mph NE	C: 80%	P: None

Notes/Comments: Transect 8 – car tracks were visible over rake marks; Transect 9 – tractors had torn up most of the trail

Transect 8		**Transect 9**	
Wildlife Species	**Number of Tracks**	**Wildlife Species**	**Number of Tracks**
Armadillo	2	Armadillo	
Bobcat	1	Bobcat	1
Coyote		Coyote	
Deer		Deer	
Gopher Tortoise		Gopher Tortoise	
Gray Fox		Gray Fox	
Hog		Hog	
Quail		Quail	
Rabbit		Rabbit	
Raccoon	3	Raccoon	1
Snake		Snake	
Turkey	2		

APPENDIX F

SUMMARY OF WEATHER CONDITIONS FOR SURVEY DATES

Appendix F. Summary of Weather Conditions for Survey Dates

Date	High Temperature (^{o}F)	Low Temperature (^{o}F)	Precipitation (Inches)	Sunrise	Sunset	Moon Phase (Percent Illuminated, Approximate)
January 9, 2008	81	56	0	0717	1751	3
January 10, 2008	82	61	0	0717	1752	8
January 11, 2008	80	59	0	0717	1753	14
January 15, 2008	70	50	0	0717	1756	55
January 16, 2008	77	51	0	0717	1757	66
January 30, 2008	78	56	0	0713	1808	39
January 31, 2008	82	57	0	0713	1808	30
February 1, 2008	80	61	0	0712	1809	22
February 5, 2008	85	63	0	0710	1812	1
February 6, 2008	83	66	0	0709	1813	0
February 19, 2008	77	60	0	0700	1821	99
February 20, 2008	77	53	0	0659	1822	100

APPENDIX G

POPULATION INDICES FOR WHITE-TAILED DEER IN THE CORN DANCE UNIT OF THE BIG CYPRESS NATIONAL PRESERVE, 1980-1991

Appendix G. Population Indices for White-Tailed Deer in the Corn Dance Unit of the BCNP, 1980-1991

Time of Survey	Method	Source	Size of Unit (Acres)	Population Index	Density (Deer:Acre)
1991 Annual	Track Counts	McCown 1991	283,791	1253	1:227
1990 Annual	Track Counts	McCown 1991	283,791	1500	1:189
1989 Annual	Track Counts	McCown 1989	283,791	1215	1:234
1988 Annual	Track Counts	McCown 1988	283,791	1412	1:201
1987 Annual	Track Counts	McCown 1987	283,791	1720	1:165
1986 Annual	Track Counts	McCown 1986	283,791	1260	1:165
1985-1986 Pre-Hunt	Track Counts	Schortemeyer 1985	283,791	280-385	1:225
1985 Annual	Track Counts	McCown 1985	283,791	1140	1:1013-737
1982-1983 Post-Hunt	Track Counts	Pylant, memo 11 April 1983	270,000	1266-2250	1:213-120
1981-1982 Post-Hunt	Track Counts	Pylant, memo 21 April 1982	270,000	1080-1875	1:250-144
1980-1981 Post-Hunt	Track Counts	Pylant, memo 28 Dec. 1981	300,000	1620	1:185

APPENDIX H

POPULATION INDICES FOR WHITE-TAILED DEER IN THE TURNER RIVER UNIT (MULLET SLOUGH) OF THE BIG CYPRESS NATIONAL PRESERVE, 1988-1992

Appendix H. Population Indices for White-Tailed Deer in the Turner River Unit (Mullet Slough) of the BCNP, 1988-1992

Time of Survey	Method	Source	Size of Area (Acres)	Population Index	Density (Deer:Acre)
1992 Annual	Track Counts	Bozzo, May 1992 (a)	32,000	269	1:119
1991 Annual	Track Counts	Schortemeryer, Manor & Bozzo, May 1991(a)	32,000	145	1:221
1990 Annual	Track Counts	Schortemeryer, Manor & Bozzo, May 1990 (a)	32,000	345	1:93
1989 Annual	Track Counts	McGrady & Manor, May 1989 (a)	32,000	300	1:107
1988 Annual	Track Counts	McGrady April 1988 (b)	32.000	58	1:549

a) Cypress Lane, three applications.
b) Cypress Lane, two replications.

APPENDIX I

POPULATION INDICES FOR WHITE-TAILED DEER IN THE STAIRSTEPS UNIT (EASTERN PORTION) OF THE BIG CYPRESS NATIONAL PRESERVE, 1977-1998

Appendix I. Population Indices for White-Tailed Deer in the Stairsteps Unit (Eastern Portion) of the BCNP, 1977-1998

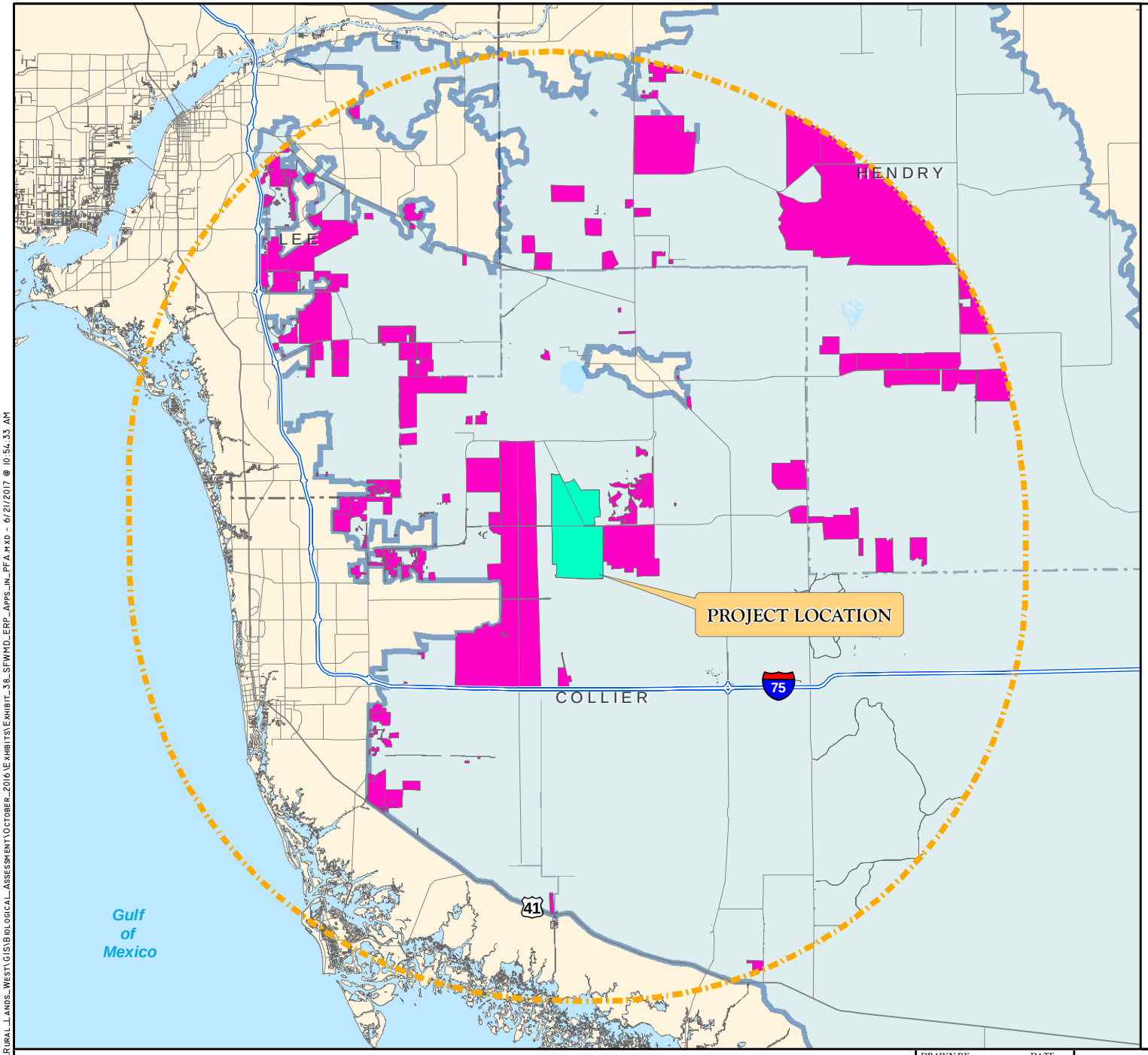
Time of Survey	Method	Source	Calculated Size of Unit (Acres)	Population Estimate	Density (Deer:Acre)
1977-1978 Post-Hunt	Track Counts	Bowman, memo 9 June 1978	140,600	743	1:190
1977-1978 Post-Hunt	Track Counts	Pylant, memo 28 Dec. 1981	141,000	1102	1:128
1978-1979 Post-Hunt	Track Counts	Pylant, memo 28 Dec. 1981	140,000	954	1:147
1979-1980 Post-Hunt	Track Counts	Pylant, memo 28 Dec. 1981	140,300	954	1:147
1980-1981 Post-Hunt	Track Counts	Pylant, memo 28 Dec. 1981	141,800	1013	1:140
1981-1982 Post-Hunt	Track Counts	Pylant, memo 21 April 1982	50,000	171	1:135
1982-1983 Pre-Hunt	SRF Aerial Counts	Pylant, memo 30 Sept. 1982	50,000	833-1190	1:60-42
1982-1983 Pre-Hunt	SRF Aerial Counts	Pylant, memo 11 April 1983	50,000	379-543	1:132-92
1984 Post-Production (1 of 2)	SRF Aerial Counts	Schortemeyer 1984	50,000	70-132	1:714-379
1984 Post-Production (2 of 2)	SRF Aerial Counts	Schortemeyer 1984	50,000	117-220	1:427-227
1984-1985 Pre-Hunt	SRF Aerial Counts	Schortemeyer 1984	50,000	316-633	1:158-79
1985-1986 Pre-Hunt	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	410-820	1:120-60
1985-1986 Post-Hunt	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	240-480	1:210-105
1986-1987 Pre-Hunt (1 of 2)	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	280-560	1:180-90
1986-1987 Post-Hunt	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	250-500	1:200-100
1987 Annual (1 of 2)	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	38-76	1:1322-661
1987 Annual (2 of 2)	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	19-38	1:2643-1322
1988 Annual	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	485-980	1:103-51
1989 Annual	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	620-1220	1:83-41

Appendix I. (Continued)

Time of Survey	Method	Source	Calculated Size of Unit (Acres)	Population Estimate	Density (Deer:Acre)
1990 Annual	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	200-442	1:227-113
1991 Annual (1 of 2)	SRF Aerial Counts	Schortemeyer & Ramsey	50,000	280-560	1:180-90
1991 Annual June (2 of 2)	SRF Aerial Counts	Manor & Bozzo	50,000	280-560	1:180-90
1992 Annual June (1 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	145-362	1:345-138
1992 Annual June (2 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	32-79	1:1586-636
1993 Annual (1 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	234-581	1:214-86
1993 Annual (2 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	88-221	1:566-266
1994 Annual (1 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	113-284	1:441-176
1994 Annual (2 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	152-379	1:330-132
1995 Annual June (1 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	171-427	1:293-117
1995 Annual June (2 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	50-126	1:991-396
1996 Annual June (1 of 2)	SRF Aerial Counts	Schortemeyer & Bozzo	50,000	32-79	1:1586-634
1996 Annual June (2 of 2)	SRF Aerial Counts	Bozzo & Myers	50,000	152-379	1:330-132
1997 Annual (1 of 2)	SRF Aerial Counts	Bozzo & Myers	50,000	581-1453	1:86-34
1997 Annual (2 of 2)	SRF Aerial Counts	Bozzo & Bush	50,000	259-648	1:193-77
1998 Annual (1 of 2)	SRF Aerial Counts	Schortemeyer & Steelman	50,000	157-393	1:317-127
1998 Annual (2 of 2)	SRF Aerial Counts	Schortemeyer & Steelman	50,000	176-442	1:283-113

EXHIBIT 38

PERMIT APPLICATIONS RECEIVED BY SFWMD FROM JULY 2013 THROUGH JULY 2016 WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA



LEGEND

- RURAL LANDS WEST
- 25 MILE RADIUS
- PANTHER FOCUS AREA
- SFWMD ERP APPLICATIONS

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NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

SFWMD ERP APPLICATIONS FROM 2013 THROUGH 2016 WERE ACQUIRED FROM THE SFWMD WEBSITE (HTTP://MY.SFWMD.GOV/GISAPPS/SFWMDXWEBDC/DATAVIEW.ASP?QUERY=UNQ_ID=1128) JULY 2016.

J:\2005\05CEN\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_38_SFWMD_ERP_APPS_IN_PFA.MXD - 6/21/2017 @ 10:54:33 AM

EXHIBIT 38. PERMIT APPLICATIONS RECEIVED BY SFWMD FROM JULY 2013 THROUGH JULY 2016 WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

Exhibit 38A. Permit Applications Received by SFWMD from July 2013 through July 2016 within Panther Focus Area

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
140828-19	36-00379-S-12	10060 BAVARIA ROAD - LOTS 5 A AND 5 B BLOCK D	0.00	0.00	0.00%	COMPLETE	LEE	45	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BLACKWELL RENTAL PROPERTIES L L C	COMMERCIAL
150817-2	11-03743-P	1296 KERI ISLAND RD	4.92	3.62	73.62%	COMPLETE	COLLIER	48	27	32	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		AGRICULTURAL
130723-8		17800 JAYNE COURT	0.02	0.02	94.94%	WITHDRAWN	LEE	45	26	13	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		AGRICULTURAL
150817-13	11-00042-S	858 COLLIER NORTH	2027.26	0.00	0.00%	COMPLETE	COLLIER	48	30	1-2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	TAMIAMI CITRUS L L C	AGRICULTURAL
151203-5	11-00042-S	858 COLLIER NORTH	2027.26	279.58	13.79%	COMPLETE	COLLIER	47	30	35,36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	TAMIAMI CITRUS L L C	AGRICULTURAL
150817-17	11-00361-S	858 COLLIER SOUTH	613.43	155.87	25.41%	UNDER REVIEW	COLLIER	48	30	13,14	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TAMIAMI CITRUS L L C	AGRICULTURAL
150318-3	36-00839-S-17	A C I - LOT 35	1.92	0.00	0.00%	COMPLETE	LEE	45	25	27	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	R E A C T PROPERTIES L L C	COMMERCIAL
141205-13	11-02336-P	A M MODIFICATION TO BASINS UN 1, UN 4, UN 6, AND IR 5	167.03	27.18	16.27%	COMPLETE	COLLIER	48	29	5-6	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	AVE MARIA DEVELOPMENT, L L L P	RESIDENTIAL
160419-10		ADDIES CORNER	18.56	18.56	100.00%	NO RESPONSE	COLLIER	48	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND NEW CONSTRUCTION/OPERATION)	NEW	CREEKSIDE WEST INC	RESIDENTIAL
160628-24		ADDIES CORNER - SOIL BORINGS	23.14	23.14	100.00%	INITIAL REVIEW	COLLIER	48	26	22	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	CREEKSIDE WEST INC	OTHER
150414-5	26-01211-P	AGRICULTURAL ROAD	3.74	0.27	7.22%	COMPLETE	HENDRY	47	32	22, 23, 15, 14, 10,11,3 AND 2	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LITTLE RANCH I I L L C	AGRICULTURAL
160415-18	36-08108-P	AIRPORT HAUL ROAD REALIGNMENT	14.21	13.57	95.55%	NO RESPONSE	LEE	46	26	6 and 7	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
131031-18	36-05427-P-02	AIRPORT HAUL ROAD SUBSTATION SITE	231.39	68.71	29.69%	COMPLETE	LEE	46	25	1,6	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	FLORIDA POWER AND LIGHT COMPANY INC	AIRPORT RELATED FACILITIES
160519-1	36-00605-S-02	AJAX PAVING - RICKENBACKER (LOT 11)	4.21	0.46	11.03%	COMPLETE	LEE	45	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AJAX PAVING INDUSTRIES OF FLORIDA L L C	INDUSTRIAL
140310-6	36-00605-S-02	AJAX PAVING INDUSTRIES OF FLORIDA	4.16	0.36	8.62%	COMPLETE	LEE	45	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	AJAX PAVING INDUSTRIES OF FLORIDA L L C	INDUSTRIAL
150219-26	26-00315-S	ALICO JOG	4076.79	1281.42	31.43%	COMPLETE	HENDRY	44	30	13,24,25,36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
130821-6	36-05518-P-04	ALICO LAKES VILLAGE PARCELS C, D, F, AND I	3.21	2.09	65.19%	COMPLETE	LEE	46	25	3	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SLF IV FL BONITA ALICO L L C	COMMERCIAL
150604-4	26-01213-P	ALICO N E - P E S PROJECT	25999.45	9577.95	36.84%	NO RESPONSE	HENDRY	45	30	11-14, 23-26, 35-36	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ALICO INC	AGRICULTURAL
160310-16	36-05136-P-07	ALL AMERICAN PET RESORT EXPANSION	2.56	0.00	0.00%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MANAGER OF T T R K L L C	INDUSTRIAL
140408-2	11-00904-S	AMERICAN FARMS 5 A C	52.44	11.68	22.27%	COMPLETE	COLLIER	49	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	AMERICAN FARMS L L C	AGRICULTURAL
150605-2	11-00904-S	AMERICAN FARMS 5 A C 2015	5.49	4.85	88.29%	UNDER REVIEW	COLLIER	49	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	AMERICAN FARMS L L C	AGRICULTURAL
141007-4	11-02748-P	AMERIMED CENTER	17.91	0.43	2.41%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND NEW CONSTRUCTION/OPERATION)	NEW	AMERISITE L L C	ROADWAY
151005-17	11-02336-P-09	ANTHEM PARKWAY & MAPLE RIDGE PHASES 4 & 5 (BASIN PS1-SOUTH)	327.50	29.80	9.10%	COMPLETE	COLLIER	48	29	4, 5, 8 & 9	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	C C AVE MARIA, L L C	RESIDENTIAL
160205-5	36-04853-P-06	ARBORWOOD AMENITY CENTER	9.03	0.00	0.00%	COMPLETE	LEE	45	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	W C I COMMUNITIES L L C	RECREATIONAL
141215-18	36-04853-P-06	ARBORWOOD PRESERVE- BASIN B3	181.46	20.60	11.35%	COMPLETE	LEE	45	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	ARBORWOOD C D D	RESIDENTIAL
140515-2	36-05198-P-03	ARBYS ALICO	1.25	0.00	0.00%	COMPLETE	LEE	46	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	CARISCH BROTHERS LP	COMMERCIAL
131120-4	11-02336-P-06	ARTHREX AT AVE MARIA FINISHING FACILITY	14.86	0.00	0.00%	COMPLETE	COLLIER	48	29	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVE MARIA DEVELOPMENT, L L L P	COMMERCIAL
150930-4	11-02336-P-06	ARTHREX BUILDING EXPANSION	50.91	0.00	0.00%	COMPLETE	COLLIER	48	29	17	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	R E S COLLIER HOLDINGS L L C	COMMERCIAL
150909-8	11-02268-P-09	AUTOZONE AT MISSION HILLS SHOPPING CENTER (PARCEL 8)	0.33	0.00	0.00%	COMPLETE	COLLIER	48	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	AUTOZONE STORES, L L C	COMMERCIAL
151020-4	11-02336-P-03	AVE MARIA - DEL WEBB ROAD CROSSING	1.13	0.00	0.00%	NO RESPONSE	COLLIER	48	29	8	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BARRON COLLIER PARTNERSHIP L T D AND AMULT L L C	RESIDENTIAL
150714-3	11-02336-P-08	AVE MARIA LAKE NUMBER 5C	1.74	0.00	0.00%	INITIAL REVIEW	COLLIER	48	29	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	C C AVE MARIA L L C	OTHER
150702-17	11-02336-P	AVE MARIA RECLAIMED WATER SYSTEM (RWS) WETLAND	161.20	146.46	90.86%	NO RESPONSE	COLLIER	47	29	29	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	PENINSULA ENGINEERING	ENVIRONMENTAL RESTORATION
151030-10	11-02336-P	AVE MARIA UNIVERSITY - PEDESTRIAN BRIDGE AND PRAYER GARDEN	1.67	0.22	12.90%	COMPLETE	COLLIER	48	29	5	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVE MARIA UNIVERSITY INC	INSTITUTIONAL
130729-8	11-02336-P	AVE MARIA UNIVERSITY PRESS BOX	1.45	0.00	0.00%	COMPLETE	COLLIER	47	29	32	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	AVE MARIA UNIVERSITY INC	RECREATIONAL
141008-4	11-01861-P	AVENTINE AT NAPLES	36.64	21.56	58.85%	COMPLETE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	AVENTINE AT NAPLES, L L C	RESIDENTIAL
150520-7	11-01861-P	AVENTINE AT NAPLES (F K A SAN MARINO CLUB)	36.64	21.56	58.85%	COMPLETE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVENTINE AT NAPLES L L C	RESIDENTIAL
160330-2	11-01861-P	AVENTINE AT NAPLES (F K A SAN MARINO CLUB)	36.64	21.56	58.84%	WITHDRAWN	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVENTINE AT NAPLES L L C	RESIDENTIAL
160718-3	11-01521-P	B L C NAPLES / MILANO LAKES APTS	24.31	2.72	11.20%	INITIAL REVIEW	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	M L LAND L L C	PUBLIC AND INSTITUTIONAL
140416-6	11-02336-P-09	BASIN PS1-SOUTH ERP MODIFICATION	246.30	20.81	8.45%	COMPLETE	COLLIER	48	29	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	C C AVE MARIA, L L C	RESIDENTIAL
160610-4	11-00323-S	BEAR HAMMOCK GROVE	255.37	49.39	19.34%	COMPLETE	COLLIER	47	27	13,14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BEAR HAMMOCK GROVE L L C	AGRICULTURAL
130801-4	11-02081-P	BENT CREEK PRESERVE	126.47	110.13	87.08%	COMPLETE	COLLIER	48	26	26	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	STANDARD PACIFIC OF SOUTH FLORIDA G P INC	RESIDENTIAL
151007-3	11-02081-P	BENT CREEK PRESERVE	135.85	119.52	87.98%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	STANDARD PACIFIC OF SOUTH FLORIDA G P INC	RESIDENTIAL
160330-6	26-00270-S	BETHEA GROVE INTERNAL LATERAL DITCHES	164.14	0.00	0.00%	COMPLETE	HENDRY	48	31	27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	ALICO INC	AGRICULTURAL
141230-11	11-00421-S	BIG CYPRESS FLEA MARKET - PHASES 3 AND 4	10.28	0.00	0.00%	NO RESPONSE	COLLIER	51	27	18	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	BASIK DEVELOPMENT	COMMERCIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
160622-13	26-00002-M	BIG CYPRESS MITIGATION BANK	2167.39	434.53	20.05%	INITIAL REVIEW	HENDRY	48	31	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	EARTHMARK SOUTHWEST FLORIDA MITIGATION L L C	MITIGATION
160706-14	36-04234-P-04	BONITA BEACH ROAD ESTATES	277.43	19.26	6.94%	INITIAL REVIEW	LEE	48	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BONITA SPRINGS ASSOCIATES I L L L P.	RESIDENTIAL
131003-8	36-04234-P-05	BONITA BEACH ROAD GOLF CLUB R P D	502.28	38.13	7.59%	COMPLETE	LEE	48	26	01	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LENNAR HOMES L L C	RESIDENTIAL
150914-16	36-04234-P-05	BONITA NATIONAL	500.27	38.03	7.60%	COMPLETE	LEE	48	26	01	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LENNAR HOMES L L C	RESIDENTIAL
140214-24	36-04234-P-05	BONITA NATIONAL - FKA BONITA BEACH ROAD GOLF CLUB RPD	499.93	38.13	7.63%	COMPLETE	LEE	48	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LENNAR HOMES L L C	RESIDENTIAL
150323-6	36-04234-P-05	BONITA NATIONAL (FKA BONITA BEACH ROAD GOLF CLUB RPD)	499.93	38.13	7.63%	COMPLETE	LEE	48	26	01	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LENNAR HOMES L L C	RESIDENTIAL
150303-3	36-04234-P-05	BONITA NATIONAL ACTIVE ADULT	53.14	19.82	37.30%	NO RESPONSE	LEE	48	26	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LENNAR HOMES L L C	RESIDENTIAL
140122-6	36-04328-P	BONITA SPRINGS FIRE STATION NUMBER 4	14.41	4.13	28.66%	COMPLETE	LEE	47	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BONITA SPRINGS FIRE CONTROL AND RESCUE DISTRICT	GOVERNMENT
141010-11	36-04853-P-05	BOTANICA SOUTH	237.41	6.26	2.64%	COMPLETE	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
150723-10	36-04853-P-05	BOTANICA SOUTH	116.39	4.88	4.19%	INITIAL REVIEW	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY HOME ASSOCIATES I I I L L L P	RESIDENTIAL
151207-20	36-04853-P-05	BOTANICA SOUTH	237.41	6.26	2.64%	WITHDRAWN	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEE COUNTY HOME ASSOCIATES I I I L L P	RESIDENTIAL
141223-9	11-03648-P	BRIDGE REHABILITATION TO CR 858 BRIDGE OVER OBIE CANAL	0.04	0.00	0.00%	COMPLETE	COLLIER	47	30	13	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140224-7	11-01434-P	BRIDGE REPAIR & SAFETY IMPROVEMENTS FOR 5 BRIDGES ON C R 846	0.34	0.29	85.43%	COMPLETE	COLLIER	47	29	1, 2, 3,	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150323-7	36-04853-P-02	BRIDGETOWN	6.10	0.08	1.39%	COMPLETE	LEE	45	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
140605-14	36-04853-P-02	BRIDGETOWN AT THE PLANTATION RE-USE LAKE	1.83	0.00	0.00%	COMPLETE	LEE	45	25	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
140210-5	36-04853-P	BRIDGETOWN PARCEL B-13	28.95	0.00	0.00%	COMPLETE	LEE	45	25	11,14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
131031-16	36-04853-P	BRIDGETOWN PARCEL B5	14.30	0.02	0.14%	COMPLETE	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
130916-16	36-04853-P	BRIDGETOWN PARCELS B-12 AND B-19	23.53	0.03	0.12%	COMPLETE	LEE	45	25	11 and 12	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	PULTE GROUP CENTEX HOMES	RESIDENTIAL
151023-7	11-02234-P-07	C R-951 EXTENSION (WEATHERED STONE DRIVE - TORRE VISTA LANE)	4.34	0.02	0.47%	COMPLETE	COLLIER	48	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
141223-8	11-01839-P	CALUSA PINES	297.68	83.79	28.15%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CALUSA PINES GOLF CLUB, L L C	RESIDENTIAL
151218-4	11-01839-P	CALUSA PINES	316.06	100.36	31.75%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CALUSA PINES GOLF CLUB L L C	GOLF COURSE DEVELOPMENT
160329-15	11-01839-P	CALUSA PINES	4.54	3.47	76.35%	HOLD FOR CONC	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CALUSA PINES GOLF CLUB L L C	RESIDENTIAL
140124-13	36-03568-P-05	CENTERPLACE	8.95	7.45	83.25%	COMPLETE	LEE	46	25	11,12, 13	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	ALICO WEST FUND L L C	RESIDENTIAL
160112-4	36-03568-P-05	CENTERPLACE	8.95	0.00	0.00%	COMPLETE	LEE	46	25	11, 12, 13	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	ALICO WEST FUND L L C	RESIDENTIAL
160311-6	36-03568-P-05	CENTERPLACE	8.95	14.91	166.60%	COMPLETE	LEE	46	25	11, 12, 13	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	ALICO WEST FUND L L C	RESIDENTIAL
140311-17	26-00721-P	CHURCH ROAD BORROW PIT	640.34	256.72	40.09%	COMPLETE	HENDRY	45	28	33	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	DELTA AGGRIGATE L L C	OTHER
141017-11	26-00721-P	CHURCH ROAD BORROW PIT	640.34	256.72	40.09%	UNDER REVIEW	HENDRY	45	28	33	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DELTA AGGREGATE L L C	MINING
151102-21	26-00721-P	CHURCH ROAD BORROW PIT - WORK SCHEDULE MODIFICATION	640.34	256.72	40.09%	NO RESPONSE	HENDRY	45	28	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	DELTA AGGREGATE L L C	COMMERCIAL
141209-4	26-00721-P	CHURCH ROAD BORROW PIT- WORK SCHEDULE MODIFICATION	650.01	257.34	39.59%	COMPLETE	HENDRY	45	28	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	DELTA AGGREGATE L L C	COMMERCIAL
140609-18	26-00224-S-02	CHURCH ROAD GROVE	2.45	2.45	100.00%	COMPLETE	HENDRY	45	28	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EAGLE CREEK SOUTHEAST L L C	AGRICULTURAL
150324-17	26-00224-S-02	CHURCH ROAD GROVE CULVERT CROSSING	0.94	0.00	0.00%	COMPLETE	HENDRY	45	28	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EAGLE CREEK SOUTHEAST L L C	AGRICULTURAL
160209-3	11-01863-P	CITY GATE BOULEVARD NORTH EXTENSION (PHASE 2)	5.74	5.74	100.00%	COMPLETE	COLLIER	49	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	C G I I L L C & 850 N W N L L C	COMMERCIAL
130809-11	36-00605-S-06	COCO PLUM DEVELOPMENT SELF STORAGE	3.01	0.00	0.00%	COMPLETE	LEE	45	25	24	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	STADIUM LAND L L C	COMMERCIAL
130809-8	36-00605-S-06	COCO PLUM DEVELOPMENT SELF STORAGE	3.01	0.00	0.00%	COMPLETE	LEE	45	25	24	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	STADIUM LAND L L C	COMMERCIAL
151217-1	11-03779-P	COLLIER CHARTER SCHOOL	9.71	2.58	26.62%	COMPLETE	COLLIER	48	27	21	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	T B D LAND VENTURES L L C	INSTITUTIONAL
140702-15	11-03593-P	COLLIER COUNTY BRIDGE REPAIR - BRIDGE 030137	0.04	0.04	97.80%	COMPLETE	COLLIER	47	29	1	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
140702-16	11-03594-P	COLLIER COUNTY BRIDGE REPAIRS - BRIDGES 034042 & 034044	0.11	0.11	99.31%	COMPLETE	COLLIER	48	28		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150219-27	26-00175-S-02	COLLINS SLOUGH EAST	1757.09	517.15	29.43%	COMPLETE	HENDRY	44	31	8,9,16,17,20	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GLOBAL A G PROPERTIES U S A L L C	AGRICULTURAL
140224-8	36-00678-S-13	COLONIAL COUNTRY CLUB	131.50	128.12	97.43%	COMPLETE	LEE	44	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLONIAL COUNTRY CLUB OF LEE COUNTY	GOLF COURSE DEVELOPMENT
140507-6	36-00678-S-33	COMCAST PARKING LOT EXPANSION	5.65	0.00	0.00%	COMPLETE	LEE	45	26	18	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TEMPLE DREXEL L L C	COMMERCIAL
140723-18	11-02336-P-09	COQUINA AT MAPLE RIDGE	292.31	30.52	10.44%	COMPLETE	COLLIER	48	29	5, 8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVE MARIA DEVELOPMENT L L L P	RESIDENTIAL
151222-9	11-02336-P-09	COQUINA AT MAPLE RIDGE	45.29	3.45	7.62%	COMPLETE	COLLIER	48	29	4, 5, 8, & 9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	AVE MARIA DEVELOPMENT, LLLP	RESIDENTIAL
151113-19	26-00844-P-02	CORBITT ROAD FARM	690.91	208.19	30.13%	COMPLETE	HENDRY	46	31	20,29,30	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	CORBITT ROAD IMMOKALEE L L C	AGRICULTURAL
141020-12		CORKSCREW CROSSING	395.01	394.34	99.83%	NO RESPONSE	LEE	46	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ARGO CORKSCREW CROSSING L L L P	RESIDENTIAL
160613-11		CORKSCREW ROAD INTERSECTION IMPROVEMENTS AT WILDCAT DRIVE	11.56	0.00	0.00%	INITIAL REVIEW	COLLIER	46	28	18	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY TRANSPORTATION ENGINEERING DIVISION	HIGHWAY

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
160627-4		CORKSCREW ROAD SAFETY IMPROVEMENTS	2.63	0.37	14.12%	INITIAL REVIEW	COLLIER	46	28	19	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW		ROADWAY
141205-12	36-03254-P	CORKSCREW SHORES	745.02	178.84	24.00%	COMPLETE	LEE	46	26	21, 28	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CORKSCREW LAKES, LLC	RESIDENTIAL
150106-4	36-03254-P	CORKSCREW SHORES (F K A CORKSCREW WOODS)	722.12	168.33	23.31%	COMPLETE	LEE	46	26	21, 28	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CORKSCREW LAKES, L L C	RESIDENTIAL
140227-5	36-03254-P	CORKSCREW SHORES AMENITY CENTER	12.36	0.00	0.00%	COMPLETE	LEE	46	26	21,28	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	CORKSCREW LAKES L L C	RECREATIONAL
140828-17	36-03254-P	CORKSCREW SHORES AMENITY CENTER	26.91	0.00	0.00%	COMPLETE	LEE	46	26	21	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CORKSCREW LAKES L L C	RECREATIONAL
141210-5	36-04032-P-02	COTTAGES AT OLD CORKSCREW GOLF CLUB	18.39	18.00	97.89%	COMPLETE	LEE	46	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COTTAGES AT OLD CORKSCREW GOLF CLUB L L C	RESIDENTIAL
150226-2	26-00679-P	CROOKS RANCH	1748.76	283.38	16.20%	COMPLETE	HENDRY	46	32	S11,14,15,22,23	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	CROOKS RANCH	AGRICULTURAL
151008-1	26-00679-P	CROOKS RANCH	1739.04	282.05	16.22%	COMPLETE	HENDRY	46	32	11,14,15,2,23	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	CROOKS RANCH	AGRICULTURAL
141230-12	36-05639-P	CROSSROADS COMMERCE CENTER	69.78	52.66	75.47%	COMPLETE	LEE	44	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	SUMMIT PROPERTIES S W L L C	COMMERCIAL
150630-19	26-00300-S	CROWS NEST GROVE	3710.10	781.09	21.05%	INITIAL REVIEW	HENDRY	46	31	34,35,35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER GROVES L T D	AGRICULTURAL
140905-4	11-00195-S	CRYSTAL LAKE R V RESORT STORAGE AREA	10.94	0.33	3.06%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CRYSTAL LAKE PROPERTY OWNERS ASSOC TWO INC	RESIDENTIAL
150820-13	11-00195-S	CRYSTAL LAKE R V RESORT STORAGE AREA	10.71	0.15	1.35%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CRYSTAL LAKE P O A TWO, INC.	RESIDENTIAL
150722-13	26-00732-P	DEER FENCE FARM	1223.37	210.95	17.24%	INITIAL REVIEW	HENDRY	46	32	31-34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	IMMOKALEE EXCHANGE L L C	AGRICULTURAL
140306-12	11-02336-P-03	DEL WEBB 201-203	164.60	13.55	8.23%	COMPLETE	COLLIER	48	29	8	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	BARRON COLLIER PARTNERSHIP LTD	RESIDENTIAL
151007-12	11-02336-P-03	DEL WEBB 203-204	169.24	14.09	8.33%	COMPLETE	COLLIER	48	29		ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PULTE HOME CORPORATION	RESIDENTIAL
150820-14	11-02336-P-03	DEL WEBB CONSOLIDATED SALES AND MODEL CENTER	10.80	0.01	0.07%	COMPLETE	COLLIER	48	29	8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PULTE HOME CORPORATION	COMMERCIAL
150929-23	26-00533-S	DUCK CURVE FARM	783.00	290.45	37.09%	COMPLETE	HENDRY	47	32	4,9	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	HICKX-6 L L C	AGRICULTURAL
141223-6	26-00003-F	DUDA LABELLE SECTIONS 10 AND 11-FORMAL WETLAND DETERMINATION	1210.90	60.88	5.03%	CLOSED	HENDRY	45	28	10	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	A DUDA AND SONS INC	WETLAND DETERMINATION
131003-9	36-04234-P-05	E BONITA ACTIVE ADULT LAKE COMMUNITY (REF: A#131003-8)	243.48	47.46	19.49%	VOID	LEE	48	26	01	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LENNAR HOMES L L C	RESIDENTIAL
150304-14	11-02874-P	ELEMENTARY SCHOOL SITE L	31.71	22.07	69.61%	COMPLETE	COLLIER	48	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	DISTRICT SCHOOL BOARD OF COLLIER COUNTY	INSTITUTIONAL
150908-1	11-02031-P	ESPLANADE DEVELOPMENT (F K A MIRASOL)	879.37	858.48	97.62%	NO RESPONSE	COLLIER	48	26	10,11, 15, 22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	TAYLOR MORRISON OF WEST FLORIDA, INC.	GOLF COURSE DEVELOPMENT
140425-12	11-02031-P	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	19.47	18.76	96.36%	COMPLETE	COLLIER	48	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	TAYLOR MORRISON ESPLANADE NAPLES, L L C	RESIDENTIAL
150702-16	11-02031-P	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	21.66	21.64	99.91%	NO RESPONSE	COLLIER	48	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	TAYLOR MORRISON ESPLANADE NAPLES, L L C	RESIDENTIAL
160126-1	11-02031-P	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	2.42	2.39	98.80%	WITHDRAWN	COLLIER	48	26	15	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	TAYLOR MORRISON ESPLANADE NAPLES L L C	RESIDENTIAL
150915-12	11-03462-P	ESTILO - FKA LORDS WAY 30	130.57	96.97	74.27%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MARCO ISLAND GROUP L L C	RESIDENTIAL
150107-11	11-03462-P	ESTILO (FKA LORDS WAY 30)	106.81	73.21	68.54%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LORDS WAY L L C	RESIDENTIAL
150513-9	36-05136-P-09	EXECUTIVE OFFICES AND TRAINING FACILITY	4.04	0.08	1.92%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SOMERO ENTERPRISES INC	COMMERCIAL
140820-12	36-00491-S-02	F G C U OFF-SITE UTILITY IMPROVEMENTS	12.58	0.14	1.11%	COMPLETE	LEE	46	25	14,15,23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	INDUSTRIAL/UTILITIES
160121-7	36-02881-S	F G C U ACADEMIC CORE RECREATIONAL FIELDS	11.43	0.02	0.15%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
150204-11	36-05188-P-02	F G C U EMERGENT TECH INSTITUTE	6.61	6.61	100.00%	COMPLETE	LEE	46	26	06	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA GULF COAST UNIVERSITY BOARD OF TRUSTEES ATTN: STEVE L.MAGIERA	INSTITUTIONAL
150320-8	36-02881-S	F G C U MAIN ENTRANCE SIGNAGE IMPROVEMENTS	1.43	0.76	52.66%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
140917-10	36-03568-P	F G C U OFF-SITE UTILITY IMPROVEMENTS	13.57	0.00	0.02%	COMPLETE	LEE	46	25	14,15	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	INDUSTRIAL/UTILITIES
140917-2	36-08277-P	F G C U OFFSITE UTILITY IMPROVEMENTS-B H G P PORTION	13.57	0.00	0.02%	COMPLETE	LEE	46	25	14	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	INDUSTRIAL/UTILITIES
150610-6	36-02881-S	F G C U PUBLIC RELATIONS MODULAR BLDG	0.73	0.02	3.13%	COMPLETE	LEE	46	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
160614-8	11-01730-P	FAKAHATCHEE MITIGATION SITE	173.91	173.91	100.00%	NO RESPONSE	COLLIER	52	28	4, 9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FAKAHATCHEE RESOURCES INC	MITIGATION
150727-29		FAKAHATCHEE MODULAR RESTROOM AND A D A RAMP	0.23	0.01	4.18%	INITIAL REVIEW	COLLIER	0	0		ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	RECREATIONAL
140820-6	11-02332-P	FALLS OF PORTOFINO	31.82	31.66	99.50%	NO RESPONSE	COLLIER	48	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PORTOFINO FALLS BUILDERS L L C	RESIDENTIAL
150421-14		FAMILY DOLLAR - LEHIGH ACRES JOEL BOULEVARD	1.33	1.33	100.00%	WITHDRAWN	LEE	44	27	3	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW		COMMERCIAL
140825-18	26-00121-S	FELDA RIDGE GROVES	621.76	49.35	7.94%	COMPLETE	HENDRY	45	28	13,23,24	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	FELDA RIDGE GROVES PARTNERSHIP	AGRICULTURAL
131212-3	36-02881-S	FGCU CAMPUS CENTRAL ENERGY PLANT	1.99	0.91	45.65%	COMPLETE	LEE	46	25	13, 23, 24	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA GULF COAST UNIVERSITY	INSTITUTIONAL
160427-19	26-00243-S	FINKS GROVE	315.07	75.44	23.94%	COMPLETE	HENDRY	45	29	16	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GOODMAN GROVE PARTNERSHIP	AGRICULTURAL
150727-22	11-01521-P	FIRST ASSEMBLY MINISTRIES/LORDS WAY APARTMENTS	24.31	2.72	11.19%	INITIAL REVIEW	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LORDS WAY APARTMENTS, L L C	RESIDENTIAL
140807-1	36-08264-P	FIRST FRUIT FARMS CORKSCREW FARM	1173.90	42.62	3.63%	COMPLETE	LEE	46	27	19	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	RESOURCE CONSERVATION HOLDINGS L L C	AGRICULTURAL
150212-13	36-05238-P	FLORIDA GULF COAST TECHNOLOGY AND RESEARCH PARK	973.32	678.26	69.69%	COMPLETE	LEE	46	25	1, 2, 12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	BENDERSON DEVLOPMENT COMPANY L L C	COMMERCIAL
160215-11	36-05238-P	FLORIDA GULF COAST TECHNOLOGY AND RESEARCH PARK	973.32	678.26	69.68%	CLOSED	LEE	46	25	1,2,12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	BENDERSON DEVELOPMENT COMPANY L L C	COMMERCIAL
151221-3	36-02881-S	FLORIDA GULF COAST UNIVERSITY - PARKING LOT/ACCESS ROAD	0.71	0.00	0.00%	NO RESPONSE	LEE	46	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	STATE OF FLORIDA / F G C U	INSTITUTIONAL

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150805-18	26-00273-S	G ROAD LAND TRUST	146.95	15.20	10.35%	COMPLETE	HENDRY	44	29	10	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LAND TRUST SERVICE CORPORATION AS TRUSTEE	AGRICULTURAL
140428-20	36-08199-P	GATEWAY ROADWAYS REHABILITATION	7.37	1.66	22.45%	COMPLETE	LEE	0	0		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	LEE COUNTY BOARD OF COUNTY COMMISSIONERS ATTN: SARAH CLARKE	ROADWAY
141210-12		GOLDEN GATE ESTATES PARK SITE	107.06	106.81	99.77%	NO RESPONSE	COLLIER	48	27	32	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	OTHER
131127-18	26-00768-P	GOLDEN OX	629.44	112.05	17.80%	NO RESPONSE	HENDRY	46	32	3,10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD		AGRICULTURAL
160329-17	36-05195-P	GOLDEN PALM MOTOR COACH ESTATES	54.49	23.31	42.78%	COMPLETE	LEE	45	27	19	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	FAB 1 INC	RECREATIONAL
131031-6	11-01714-P	GOLF CLUB OF THE EVERGLADES	250.95	223.39	89.02%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	PULTE HOME CORPORATION	RESIDENTIAL
150219-18	11-01714-P	GOLF CLUB OF THE EVERGLADES	257.33	229.01	88.99%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	PULTE HOME CORPORATION	RESIDENTIAL
150728-9	11-01714-P	GOLF CLUB OF THE EVERGLADES	9.40	8.04	85.59%	INITIAL REVIEW	COLLIER	48	27	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	PULTE HOME CORPORATION	RECREATIONAL
150914-9	11-01714-P	GOLF CLUB OF THE EVERGLADES	9.36	6.24	66.66%	UNDER REVIEW	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PULTE HOME CORPORATION	RESIDENTIAL
160303-10	11-01714-P	GOLF CLUB OF THE EVERGLADES (BASINS REVISIONS)	0.64	0.51	79.63%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	PULTE HOME CORPORATION	GOLF COURSE DEVELOPMENT
160323-16		GOOD TURN CENTER	8.92	3.71	41.65%	NO RESPONSE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL)	NEW	COLLIER RATTLESNAKE L L C	COMMERCIAL
151105-7	36-05198-P-07	GULF COAST LANDING	1.05	0.00	0.00%	COMPLETE	LEE	46	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	G C L 16441 L L C	COMMERCIAL
150401-12	11-03377-P	HABITAT FOR HUMANITY OF COLLIER COUNTY - LEGACY LAKES	10.44	0.03	0.28%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC.	AGRICULTURAL
140718-6	11-03312-P	HACIENDA BOULEVARD PHASE 1	16.56	14.98	90.48%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES, L L C	ROADWAY
130917-26	11-03312-P-04	HACIENDA LAKES OF NAPLES RATTLESNAKE HAMMOCK PHASE 2	11.47	1.91	16.66%	COMPLETE	COLLIER	50	26	23	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	HACIENDA LAKES OF NAPLES L L C	RESIDENTIAL
140826-12	11-03312-P-04	HACIENDA LAKES OF NAPLES RATTLESNAKE HAMMOCK PHASE 2	11.47	1.91	16.66%	COMPLETE	COLLIER	50	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES L L C	RESIDENTIAL
151215-2	11-03312-P-05	HACIENDA LAKES TRACT B	141.45	59.48	42.05%	COMPLETE	COLLIER	50	26	14 & 23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	HACIENDA LAKES OF NAPLES L L C	RESIDENTIAL
150924-5	11-03750-P	HADLE NURSERY	36.21	20.74	57.28%	COMPLETE	COLLIER	49	27	13	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	M P B P 2 ENTERPRISES L L C	AGRICULTURAL
140212-3	36-00678-S	HAMPTON PARK AT GATEWAY LAKE #10/GRIFFIN ROAD SIDEWALK	18.25	0.01	0.06%	COMPLETE	LEE	45	26	5,6,31	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
140718-12	36-00678-S	HAMPTON PARK PARCEL J (PHASE 7)	257.80	60.68	23.54%	COMPLETE	LEE	45	26	5,6	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	W C I COMMUNITIES, LLC	RESIDENTIAL
131212-18	11-00084-S-02	HARRIS MORAN RESEARCH FACILITY	6.32	0.00	0.00%	COMPLETE	COLLIER	48	29	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ENGLISH BROTHERS	AGRICULTURAL
140214-30	11-00084-S-02	HARRIS MORAN RESEARCH FACILITY	7.63	0.00	0.00%	COMPLETE	COLLIER	48	29	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ENGLISH BROTHERS	AGRICULTURAL
160602-20	36-00142-S	HENDRY CANAL WIDENING - PHASE 2	67.41	25.15	37.31%	COMPLETE	LEE	44	27	35	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEHIGH ACRES MUNICIPAL SERVICES	ENVIRONMENTAL RESTORATION
160603-25	36-00142-S	HENDRY CANAL WIDENING PHASE 1	18.78	7.69	40.96%	COMPLETE	LEE	44	27	36	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEHIGH ACRES MUNICIPAL SERVICES IMPROVEMENT DIST	OTHER
150427-2	26-00539-S-02	HOWELL FARMS	538.86	70.82	13.14%	COMPLETE	HENDRY	47	32	3	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		AGRICULTURAL
150129-8	11-00024-S	I F A S IMMOKALEE BUILDING 7712 EXPANSION	79.58	47.86	60.14%	COMPLETE	COLLIER	46	29	20	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	UNIVERSITY OF FLORIDA	GOVERNMENT
150506-14	26-00516-S	I P S - RENFROE FARM	476.56	83.18	17.45%	COMPLETE	HENDRY	45	28	S29	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	HESTER RENFROE FARM	AGRICULTURAL
150108-6	11-00396-S	I-75 (ALLIGATOR ALLEY) GUARDRAIL	1045.04	68.04	6.51%	COMPLETE	COLLIER	50	26	multiple	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
141212-3	36-03802-P	I-75 AT DANIELS PARKWAY INTERCHANGE	119.66	16.60	13.87%	COMPLETE	LEE	45	25	4, 27, 35	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
160524-13	11-00396-S	I-75 BRAZILIAN PEPPER REMOVAL MITIGATION PROJECT	42.06	41.77	99.30%	UNDER REVIEW	COLLIER	49	30	32	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	F D O T DISTRICT 1	GOVERNMENT
150526-4	11-00396-S-03	I-75 MILE MARKER 63 REST AREA	22.59	12.71	56.26%	NO RESPONSE	COLLIER	49	32	36	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	BIG CYPRESS NATIONAL PRESERVE	HIGHWAY
131115-13	11-01737-P	IMMOKALEE RD CR 951 TO 43RD AVE N E (BASIN 4)	66.98	0.62	0.93%	COMPLETE	COLLIER	48	27	29	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS ATTN:	ROADWAY
141205-17	11-00999-S	IMMOKALEE REGIONAL AIRPORT	2.62	0.00	0.00%	COMPLETE	COLLIER	46	29	34, 35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	AIRPORT RELATED FACILITIES
130801-11	11-00999-S	IMMOKALEE REGIONAL AIRPORT PH 1 AND 2 (REF: A#130718-24)	2.26	0.00	0.00%	VOID	COLLIER	46	29	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	COLLIER COUNTY AIRPORT AUTHORITY	AIRPORT RELATED FACILITIES
140725-12	11-01737-P	IMMOKALEE ROAD CHLORAMINE BOOSTER STATION	66.98	0.62	0.93%	COMPLETE	COLLIER	48	27	22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS ATTN: TOM CHMELIK	GOVERNMENT
150720-1	11-01737-P	IMMOKALEE-COLLIER INTERSECTION IMPROVEMENTS	4.49	0.70	15.58%	INITIAL REVIEW	COLLIER	48	26	23,23,26,27	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY	HIGHWAY
160628-10	26-00118-S	JAMERSON FARMS - FELDA S	220.74	34.00	15.40%	INITIAL REVIEW	HENDRY	45	29	34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS		AGRICULTURAL
141029-14	36-05198-P-06	JASONS DELI - GULFCOAST LANDINGS	1.39	0.00	0.00%	COMPLETE	LEE	45	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	WILROCK GULF COAST LANDINGS	COMMERCIAL
160621-5	36-05136-P	JETPORT LOOP EXTENSION	0.93	0.00	0.00%	INITIAL REVIEW	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	SOUTHWEST FLORIDA INVESTMENTS PROPERTY L L C	INDUSTRIAL
140414-7	26-00428-S	K BOB GROVE	15.13	0.38	2.49%	COMPLETE	HENDRY	44	29	9	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BULMAHN GROVES L L C	AGRICULTURAL
160119-24	11-03097-P	KAICASA	97.90	0.00	0.00%	COMPLETE	COLLIER	47	29	12, 13	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC	RESIDENTIAL
160415-19	11-03097-P	KAICASA	97.90	84.64	86.46%	COMPLETE	COLLIER	47	29	12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC	RESIDENTIAL
141107-2	26-00148-S	K-BOB GROVE	78.45	10.33	13.17%	NO RESPONSE	HENDRY	43	27	29	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	K-BOB	AGRICULTURAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
141216-1	11-03643-P	L C E C CROSSING NUMBER 2	0.02	0.02	100.01%	COMPLETE	COLLIER	52	29	S25	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	L C E C	HIGHWAY
141010-5	11-01839-P-02	LA MORADA (F K A INDIAN HILL ESTATES)	224.54	70.75	31.51%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	W C I COMMUNITIES, L L C	RESIDENTIAL
151218-5	11-01839-P-02	LA MORADA (F K A INDIAN HILL ESTATES)	206.18	0.00	0.00%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
160518-19	11-01839-P-02	LA MORADA (F K A INDIAN HILL ESTATES)	206.18	108.37	52.56%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150415-7	11-01839-P-02	LA MORADA MULTI-FAMILY TRACTS	25.68	0.17	0.65%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES, L L C	RESIDENTIAL
140410-2	26-00080-S	LABELLE RANCH	855.11	344.41	40.28%	COMPLETE	HENDRY	43	30	29	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	C P B PROPERTIES INC	AGRICULTURAL
140411-9	26-00080-S	LABELLE RANCH (REF: A#140410-2)	855.11	344.41	40.28%	VOID	HENDRY	43	30	29	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	C P B PROPERTIES INC	AGRICULTURAL
151202-16	26-00080-S	LABELLE RANCHES - RESERVOIR B-12A MODIFICATION	843.60	341.60	40.49%	NO RESPONSE	HENDRY	43	29	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	C P B PROPERTIES INC	AGRICULTURAL
150821-13	36-01303-S	LEE CO COMPLETE ST INITIATIVE TIGER GRANT 19 DANIELS PKWY	0.00	0.00	0.00%	COMPLETE	LEE	45	25	20-23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150813-1	36-01729-S	LEE COUNTY COMPLETE STREETS INITIATIVE,TIGER GRANT NO. 19	18.50	1.05	5.67%	COMPLETE	LEE	45	26	23, 24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY DEPARTMENT OF TRANSPORATION	ROADWAY
130919-16	36-04786-P	LEE COUNTY MOSQUITO CONTROL DISTRICT	30.01	3.50	11.65%	COMPLETE	LEE	44	26	15, 16, 21, 22	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	LEE COUNTY MOSQUITO CONTROL DISTRICT	GOVERNMENT
160216-15	36-04786-P	LEE COUNTY MOSQUITO CONTROL DISTRICT TAXIWAY EXTENSIONS	30.01	3.50	11.65%	COMPLETE	LEE	44	26	15, 16, 21, 22	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY MOSQUITO CONTROL DISTRICT	GOVERNMENT
160126-7	11-03377-P	LEGACY LAKES	10.44	0.03	0.28%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HABITAT FOR HUMANITY OF COLLIER COUNTY INC	RESIDENTIAL
140428-12	11-03614-P	LIDO ISLES	22.92	22.01	96.02%	NO RESPONSE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	LORDS WAY 30 M L L C	RESIDENTIAL
151125-6	11-03614-P	LIDO ISLES	22.56	21.69	96.14%	COMPLETE	LEE	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MARCO ISLAND GROUP L L C	RESIDENTIAL
140106-2	11-02893-P	LIVING WORD FAMILY CHURCH	37.50	16.31	43.49%	COMPLETE	COLLIER	48	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LIVING WORD FAMILY CHURCH INC	INSTITUTIONAL
150204-16	11-02893-P	LIVING WORD FAMILY CHURCH	18.39	7.05	38.34%	COMPLETE	COLLIER	48	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LIVING WORD FAMILY CHURCH, INC.	INSTITUTIONAL
140106-5	11-02893-P	LIVING WORD FAMILY CHURCH (REF: A# 140106-2)	37.50	16.31	43.49%	VOID	COLLIER	48	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION)	MOD	LIVING WORD FAMILY CHURCH INC	INSTITUTIONAL
150202-10		MANNA CHRISTIAN	14.85	13.92	93.77%	UNDER REVIEW	LEE	47	26	32	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	MANNA CHRISTIAN MISIONS INC	ENVIRONMENTAL RESTORATION
131031-14	11-02336-P-08	MAPLE RIDGE AT AVE MARIA PHASE 2	25.30	0.00	0.00%	COMPLETE	COLLIER	48	29	5	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	MAPLE RIDGE AT AVE MARIA HOA INC	RESIDENTIAL
141022-11	11-02336-P-08	MAPLE RIDGE ESTATE MODEL LOTS	6.45	0.00	0.00%	COMPLETE	COLLIER	48	29	4	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MAPLE RIDGE AT AVE MARIA HOA INC	RESIDENTIAL
150921-14	36-04853-P-05	MARINA BAY (F.K.A. BOTANICA SOUTH)	263.55	30.23	11.47%	NO RESPONSE	LEE	45	25	10, 11, 14, 15	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
160401-1	36-04853-P-05	MARINA BAY PLAT THREE	27.96	0.34	1.20%	COMPLETE	LEE	45	25	10,11,14,15	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
151020-3	36-04853-P-05	MARINA BAY PLAT TWO (PARCELS C AND E)	80.57	0.00	0.01%	VOID	LEE	45	25	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
151015-4	36-04853-P-05	MARINA BAY RECREATION TRACT AND PARCELS C AND E	80.47	0.00	0.01%	COMPLETE	LEE	45	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY HOMES ASSOCIATES I I I L L L P	RESIDENTIAL
140206-8	11-02603-P	MASSEY STREET OUTFALL IMPROVEMENTS	0.83	0.08	10.07%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	D R HORTON, INC	ROADWAY
140710-13	36-00678-S-18	MATERITA PHASE 4	183.98	132.12	71.81%	COMPLETE	LEE	45	25	01	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150707-20	36-01871-S-11	MC DONALDS RESTAURANT - LOT 4	0.51	0.00	0.00%	INITIAL REVIEW	LEE	46	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MC DONALDS CORP	COMMERCIAL
140530-5	36-04749-P-02	MIDWAY EXPANSION	0.71	0.00	0.00%	COMPLETE	LEE	46	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	MIDWAY PROMENADE L L C	COMMERCIAL
150622-21	36-05415-P	MILLENIUM CORPORATE PARK FKA AIRPORT INTERSTATE COMMERCE PRK	320.32	292.34	91.26%	COMPLETE	LEE	46	25	2, 3	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	ASSET RECOVERY X X L L C	COMMERCIAL
140508-8	36-03568-P	MIROMAR LAKES SOUTH ENTRANCE	9.64	4.49	46.58%	HOLD FOR CONC	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	MIROMAR LAKES, L L C	ROADWAY
131008-4	11-02603-P	MOCKINGBIRD CROSSING	108.52	61.91	57.05%	WITHDRAWN	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D R HORTON	RESIDENTIAL
141015-8	11-02603-P	MOCKINGBIRD CROSSING	108.52	61.91	57.05%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D R HORTON I N C	RESIDENTIAL
141029-1	11-02603-P	MOCKINGBIRD CROSSING	109.77	61.96	56.45%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	D R HORTON I N C	RESIDENTIAL
150831-15	11-02603-P	MOCKINGBIRD CROSSING	108.38	61.65	56.88%	COMPLETE	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D R HORTON INC	RESIDENTIAL
151106-15	11-02603-P	MOCKINGBIRD CROSSING	108.38	61.65	56.88%	VOID	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	D R HORTON INC	RESIDENTIAL
160119-20	11-02603-P	MOCKINGBIRD CROSSING	108.38	61.65	56.88%	COMPLETE	COLLIER	48	26	36	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	D R HORTON INC	RESIDENTIAL
160408-12	11-00090-S-02	NAPLES RESERVE	1029.67	348.88	33.88%	NO RESPONSE	COLLIER	51	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	S F I NAPLES RESERVE L L C	RESIDENTIAL
160707-20	11-00090-S-02	NAPLES RESERVE - CORAL HARBOR	32.33	0.00	0.00%	INITIAL REVIEW	COLLIER	51	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S F I NAPLES RESERVE L LC C/O ISTAR FINANCIAL INC	RESIDENTIAL
150609-8	11-00090-S-02	NAPLES RESERVE CLUBHOUSE PHASE I I	6.06	0.00	0.00%	COMPLETE	COLLIER	51	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	S F I NAPLES RESERVE, L L C	RECREATIONAL
140721-4	11-00090-S-02	NAPLES RESERVE ISLAND CLUB	6.13	0.00	0.00%	COMPLETE	COLLIER	51	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	S F I NAPLES RESERVE, L L C	RECREATIONAL
140113-10	11-00090-S-02	NAPLES RESERVE PHASE I I	115.88	10.13	8.74%	COMPLETE	COLLIER	51	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	S F I NAPLES RESERVE L L C	RESIDENTIAL
160120-5	11-00090-S-02	NAPLES RESERVE TENNIS CENTER	25.94	0.00	0.00%	COMPLETE	COLLIER	51	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	S F I NAPLES RESERVE L L C	RECREATIONAL
140529-2	11-02279-P	NATIVE POND RESTORATION ON THE FLORIDA PANTHER N W R	4.90	4.90	99.99%	COMPLETE	COLLIER	49	29	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	U S A - DEPARTMENT OF INTERIOR	ENVIRONMENTAL RESTORATION

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
130927-2	11-03508-P	NORTH GOLDEN GATE ESTATES ROADWAY CULVERTS	27020.05	15989.31	59.18%	COMPLETE	COLLIER	48	28	5-8, 17-20, 29-32	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS ATT:	OTHER
130808-3	26-01145-P	OAK CREEK HAMMOCK	33.92	13.38	39.44%	COMPLETE	HENDRY	43	28	31	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	SOFLO AG L L C	AGRICULTURAL
150325-4	11-00248-S-02	OCHOPEE HYDROLOGIC RESTORATION, PHASE 2	2.30	2.30	100.00%	COMPLETE	COLLIER	52	30	15	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	UNITED STATES OF AMERICA	GOVERNMENT
160328-4	11-00248-S-02	OCHOPEE HYDROLOGIC RESTORATION, PHASE 2	2.30	2.30	100.00%	COMPLETE	COLLIER	52	30		ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BIG CYPRESS NATIONAL PRESERVE	GOVERNMENT
141124-8	11-02135-P	OFF ROAD VEHICLE TRAIL STABILIZATION MITIGATION MODIFICATION	296.16	296.16	100.00%	COMPLETE	COLLIER	52	30		ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	UNITED STATES OF AMERICA C/ O NATIONAL PARK SERVICE	GOVERNMENT
130718-23	11-02135-P	OFF-ROAD VEHICLE TRAIL STABILIZATION	150.86	126.82	84.06%	COMPLETE	COLLIER	49	30		ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	UNITED STATES OF AMERICA C/ O NATIONAL PARK SERVIC	GOVERNMENT
150306-12	11-01745-P	OIL WELL ROAD 29-ACRES MITIGATION AREA	30.48	30.48	99.99%	COMPLETE	COLLIER	0	0		ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	MITIGATION
160606-25	11-01745-P	OIL WELL ROAD SEGMENT 3	82.29	17.37	21.10%	COMPLETE	COLLIER	48	28	14-17 & 20-23	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	HIGHWAY
131223-7	11-00898-S	OLDE FLORIDA GOLF CLUB	237.37	219.11	92.31%	COMPLETE	COLLIER	48	27	31	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	OLDE FLORIDA GOLF CLUB, INC.	GOLF COURSE DEVELOPMENT
141031-11	11-02432-P	ORANGE BLOSSOM RANCH	510.75	24.15	4.73%	UNDER REVIEW	COLLIER	48	27	13	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	R P ORANGE BLOSSOM OWNER, L L C	RESIDENTIAL
141231-40	11-02432-P	ORANGE BLOSSOM RANCH	90.70	14.17	15.62%	COMPLETE	COLLIER	48	27	13, 14, 24	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	BRYAN PAUL CITRUS INC	RESIDENTIAL
140825-17	26-00430-S-02	ORANGE HAMMOCK GROVES	524.75	90.43	17.23%	COMPLETE	HENDRY	45	28	25,26,36	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	ORANGE HAMMOCK GROVES L L P	AGRICULTURAL
150326-4	11-00794-S	ORANGE TREE SHERIFFS SUBSTATION	5.91	0.12	2.10%	COMPLETE	COLLIER	48	27	11, 14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	PUBLIC AND INSTITUTIONAL
141013-24	11-00704-S	PACIFIC LAND COMPANY INDUSTRIAL PARK	14.24	0.00	0.00%	COMPLETE	COLLIER	47	29	2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ENGLISH BROTHERS PARTNERSHIP	INDUSTRIAL
151026-12	36-00326-S	PAN TERRA HOLDINGS	534.62	29.51	5.52%	COMPLETE	LEE	46	27	32	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PAN TERRA HOLDINGS L T D	AGRICULTURAL
151026-21	36-00327-S	PAN TERRA HOLDINGS	908.31	102.20	11.25%	COMPLETE	LEE	46	27	32	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PAN TERRA HOLDINGS L T D	AGRICULTURAL
151217-7	11-00002-M	PANTHER ISLAND MITIGATION BANK EXPANSION	4238.18	3385.46	79.88%	NO RESPONSE	COLLIER	47	27	3, 4, 10, 19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	SOUTHWEST FLORIDA WETLANDS JOINT VENTURE	MITIGATION
131024-5	36-05518-P-05	PARCEL C AT ALICO LAKES	1.03	0.48	46.41%	COMPLETE	LEE	46	25	2, 3	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	VAN MF ALICO LAKES L LC	COMMERCIAL
150706-20	36-05518-P-05	PARCEL C AT ALICO LAKES	1.03	0.48	46.41%	INITIAL REVIEW	LEE	46	25	2,3	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	ORIONLS L L C	COMMERCIAL
151207-18	11-02231-P	PARKLANDS COLLIER	787.08	644.37	81.87%	COMPLETE	COLLIER	48	26	9,12	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	PARKLANDS ASSOCIATES I L L L P	RESIDENTIAL
141124-2	11-00090-S-03	PARROT CAY	36.60	0.00	0.00%	COMPLETE	COLLIER	51	26	1	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	PARROT CAY HOLDCO	RESIDENTIAL
160223-21	36-00678-S	PELICAN PRESERVE GOLF CLUBHOUSE OUTDOOR DINING EXPANSION	8.63	0.00	0.00%	COMPLETE	LEE	44	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES, L L C	RESIDENTIAL
140815-12	36-00678-S-18	PELICAN PRESERVE NINE HOLES	1361.59	545.65	40.07%	COMPLETE	LEE	45	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WCI COMMUNITIES L.L.C.	RESIDENTIAL
141031-10	36-00678-S-18	PELICAN PRESERVE NINE HOLES	28.36	17.36	61.21%	COMPLETE	LEE	45	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
140102-8	36-00678-S-18	PELICAN PRESERVE NINE HOLES (BASIN 15)	28.36	17.36	61.21%	COMPLETE	LEE	45	25	1	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150710-2	36-00678-S-18	PELICAN PRESERVE NINE HOLES (BASINS 12, 14 & 15)	218.19	143.29	65.67%	INITIAL REVIEW	LEE	45	25	1,12	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	W C I COMMUNITIES	RESIDENTIAL
140312-4	36-00678-S	PELICAN PRESERVE TOWN CENTER EXPANSION	23.99	0.19	0.79%	COMPLETE	LEE	45	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
160407-2	36-00678-S	PELICAN PRESERVE TOWN CENTER PICKLE BALL COURTS	0.65	0.00	0.00%	COMPLETE	LEE	45	25	2	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RECREATIONAL
131101-6	36-00678-S-18	PELICAN PRESERVE-MATERITA PHASE 3	118.93	65.53	55.10%	COMPLETE	LEE	45	25	01	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150305-15	11-03679-P	PEPPER RANCH PRESERVE MOUNTAIN BIKE TRAILS	144.20	20.55	14.25%	COMPLETE	COLLIER	46	28	28	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISIONERS	ENVIRONMENTALLY SENSITIVE
140108-24	36-02292-S	PEPPERLAND	644.31	67.63	10.50%	COMPLETE	LEE	46	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PEPPERLAND L L C (D/B/A PEPPERLAND HOLDINGS L L C)	AGRICULTURAL
160520-30	36-02292-S	PEPPERLAND	644.30	67.76	10.52%	NO RESPONSE	LEE	46	27	30	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PEPPERLAND L L C	RESIDENTIAL
160624-11	11-01174-S	PICAYUNE STRAND RESTORATION PROJECT	30.15	30.15	100.00%	INITIAL REVIEW	COLLIER	50	27	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NEW HOPE MINISTRIES INC	MITIGATION
150427-3	26-00539-S	POINT OF CYPRESS	2291.20	339.06	14.80%	COMPLETE	HENDRY	47	32	1, 2, 11, 12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		AGRICULTURAL
150121-12	26-00126-S	PRIDE CITRUS DEVELOPMENT	1105.31	59.81	5.41%	UNDER REVIEW	HENDRY	48	31	16-21	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PRISON REHABILITATIVE IND. & DIVERSIFIED ENT. INC	AGRICULTURAL
150820-1	11-00418-S-06	PUBLIX ORANGETREE	9.98	0.00	0.00%	COMPLETE	COLLIER	48	27	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	PUBLIX SUPER MARKETS, INC	COMMERCIAL
150917-5	11-00736-S	PYLES RESIDENCE - LOT 20	2.24	0.74	32.85%	COMPLETE	COLLIER	48	27	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RESIDENTIAL
150129-12	11-00768-S	QUAIL WEST	0.82	0.00	0.00%	COMPLETE	COLLIER	48	26	5, 7, 8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	QUAIL WEST FOUNDATION INC	RESIDENTIAL
160628-7	26-00412-S	QUEEN FELDA GROVE	37.39	5.35	14.30%	INITIAL REVIEW	HENDRY	45	29	34, 35	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	MC KINNON CORPORATION	AGRICULTURAL
151002-21	36-00326-S	R L F - R S AND SON GROVE (F/K/A SCHOENBRUN FARMS GROVE 2)	534.62	29.51	5.52%	COMPLETE	LEE	46	27	32	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	R L F CORKSCREW HOLDINGS L L C	AGRICULTURAL
151223-5	11-02492-P	RAFFIA PRESERVE	182.00	177.80	97.70%	NO RESPONSE	COLLIER	48	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	WCI COMMUNITIES, LLC	RESIDENTIAL
140124-2	11-02492-P	RAFFIA PRESERVE CLUBHOUSE SITE	2.63	2.63	100.00%	COMPLETE	COLLIER	48	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150401-13	11-03312-P-04	RATTLESNAKE HAMMOCK ROAD PHASE 2	11.25	1.86	16.53%	COMPLETE	COLLIER	50	26	14, 23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES L L C	RESIDENTIAL
140409-18	11-02131-P	REFLECTION LAKES AT NAPLES PHASE 1 B -AKA WALNUT LAKES P U D	24.40	3.01	12.34%	COMPLETE	COLLIER	51	26	12	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LENNAR HOMES L L C	RESIDENTIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
130903-10	36-07333-P	RESERVE AT SILVERSTONE	147.04	0.53	0.36%	WITHDRAWN	LEE	48	26	2	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	A C F 10 - A BONITA L L C	AGRICULTURAL
140806-11	36-07333-P	RESERVE AT SILVERSTONE TEMPORARY AGRICULTURAL ACTIVITY	299.29	39.07	13.05%	COMPLETE	LEE	48	26	02	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	A C F 10-A BONITA L L C	RESIDENTIAL
151013-17	36-07333-P	RESERVE AT SILVERSTONE TEMPORARY AGRICULTURAL ACTIVITY	277.43	19.26	6.94%	COMPLETE	LEE	48	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BONITA SPRINGS ASSOCIATES I L L L P	RESIDENTIAL
130903-13	36-04234-P-04	RESERVE OF SILVERSTONE	277.43	19.26	6.94%	WITHDRAWN	LEE	48	26	2	ERP	GP	ENVIRONMENTAL RESOURCE (STANDARD GENERAL PERMIT EXTENSION HB503)	MOD	A C F 10 - A BONITA L L C	RESIDENTIAL
150918-18	36-04234-P-04	RESERVE OF SILVERSTONE	277.43	0.00	0.00%	COMPLETE	LEE	48	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BONITA SPRINGS ASSOCIATES I L L L P	RESIDENTIAL
151207-19	36-04234-P-04	RESERVE OF SILVERSTONE	277.43	38.52	13.88%	COMPLETE	LEE	48	26	2	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	A C F 10 A BONITA L L C	RESIDENTIAL
160426-14	11-03808-P	RICHMOND PARK	16.41	11.30	68.83%	UNDER REVIEW	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	NEAL COMMUNITIES OF S W F L	RESIDENTIAL
130702-4	11-02055-P	RIVERSTONE (FORMERLY SATURNIA FALLS)	631.21	292.53	46.34%	COMPLETE	COLLIER	48	26	16	ERP	GP	ENVIRONMENTAL RESOURCE (GENERAL PERMIT MODIFICATION)	MOD	G L HOMES OF NAPLES ASSOC. I I, L T D	RESIDENTIAL
141024-12	11-03617-P	ROCKEDGE	107.11	23.95	22.36%	UNDER REVIEW	COLLIER	50	26	23	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	WATERMEN AT ROCKEDGE NAPLES, L L C	RESIDENTIAL
160711-8		RURAL LANDS WEST	10158.86	4718.00	46.44%	INITIAL REVIEW	COLLIER	48	28	3, 10-15, 22-27, 34-36	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL)	NEW	COLLIER ENTERPRISES MANAGEMENT INC	RESIDENTIAL
140723-12	11-00968-S	S R 29 WILDLIFE CROSSINGS	31.46	30.45	96.80%	COMPLETE	COLLIER	49	30	5	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	MITIGATION
150225-8	36-07151-P	S R 82 FROM LEE BOULEVARD TO SHAWNEE ROAD	69.88	45.37	64.93%	COMPLETE	LEE	45	26	4, 5, 6, 9, 10	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
130905-8	26-01188-P	S R 82 WIDENING FROM LEE CO LINE TO COLLIER CO LINE	38.07	6.75	17.73%	COMPLETE	HENDRY	45	28	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
160519-15	11-01194-S	S R 846 LAND	2574.71	389.25	15.12%	COMPLETE	COLLIER	47	27	35,36	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	27TH/ PICO BOULEVARD LIMITED PARTNERSHIP	AGRICULTURAL
160708-6	36-00080-S	S W F I A REMEDIATION OF HAZARDOUS WILDLIFE AREAS 9, 10 & 12	5525.58	3662.63	66.28%	INITIAL REVIEW	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY PORT AUTHORITY	AIRPORT RELATED FACILITIES
150730-1	36-00080-S	S W F I A REMEDIATION OF HAZARDOUS WILDLIFE AREAS PH. 2	76.46	42.42	55.48%	INITIAL REVIEW	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY PORT AUTHORITY	AIRPORT RELATED FACILITIES
151005-10	36-00080-S	S W F I A SECURITY GATE 64 RELOCATION	1.40	0.00	0.00%	COMPLETE	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY PORT AUTHORITY	AIRPORT RELATED FACILITIES
150813-11	36-00080-S	S W FLORIDA INTERNATIONAL AIRPORT	5525.58	3662.63	66.28%	COMPLETE	LEE	45	25	23-27, 34-36	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	COMMERCIAL
140813-7	36-03802-P	S W FLORIDA INTERNATIONAL AIRPORT (S W F I A) ACCESS TO I-75	144.54	41.49	28.70%	COMPLETE	LEE	46	25	2,3,10	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA DEPARTMENT OF TRANSPORTATION	ROADWAY
140929-12	36-05136-P-05	S W INTERNATIONAL TRACT F2	3.88	0.11	2.83%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	BARNUM FORT MYERS PROPERTIES L L C	INDUSTRIAL
140926-12	36-05136-P-05	S W INTERNATIONAL TRACT F-2	3.88	0.11	2.83%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	BARNUM FORT MYERS PROPERTIES L L C	INDUSTRIAL
150928-3	36-05136-P-10	S W INTERNATIONAL TRACT F-3	4.11	0.01	0.22%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	JENISA INVESTMENTS L L C	INDUSTRIAL
140929-16	36-05136-P-03	S W INTERNATIONAL TRACT K	6.55	0.07	1.05%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD		COMMERCIAL
140124-15		SABAL PALM M S T U	11.93	10.00	83.84%	RETURNED	COLLIER	0	0		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	BETTER ROADS INC	ROADWAY
140422-17	11-03631-P	SABAL PALM M S T U	1.48	0.74	50.05%	COMPLETE	COLLIER	0	0		ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
130806-4	11-00736-S	SADDLEBROOK LAKES	141.43	141.43	100.00%	WITHDRAWN	COLLIER	48	27	9	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	SADDLEBROOK LAKES HOMEOWNERS ASSOCIATION INC	RESIDENTIAL
151228-3	11-00736-S	SADDLEBROOK LAKES LOT 17	2.29	1.14	50.02%	COMPLETE	COLLIER	48	27	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RESIDENTIAL
150826-3	11-00736-S	SADDLEBROOK LAKES LOT 8	2.26	1.32	58.61%	COMPLETE	COLLIER	48	27	9	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RESIDENTIAL
141117-1	11-03664-P	SAN MARINO	181.49	181.14	99.81%	NO RESPONSE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	H & L D VENTURES, L L C	RESIDENTIAL
150409-15	36-00379-S-08	SANDERS LABORATORIES FACILITY - PART OF LOT 6 BLOCK D	0.02	0.00	0.00%	COMPLETE	LEE	45	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	SANDERS LABORATORIES INC	COMMERCIAL
151207-17	11-02055-P	SATURNIA FALLS F K A TERAFINA PUD	631.21	292.53	46.34%	WITHDRAWN	COLLIER	48	26	16	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	G L HOMES OF NAPLES ASSOC I I L T D	RESIDENTIAL
151104-10	36-00142-S-60	SAVANNA LAKES	517.01	262.01	50.68%	COMPLETE	LEE	45	27	16-20	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	U S HOME CORPORATION	RESIDENTIAL
141017-6	11-03630-P	SCOUR PROTECTION FOR IMMOKALEE ROAD BRIDGE OVER GATOR CANAL	0.11	0.11	100.00%	COMPLETE	COLLIER	47	28	23, 26	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
141017-4	11-03629-P	SCOUR PROTECTION FOR RANDALL BLVD BRIDGE	0.08	0.07	92.65%	COMPLETE	COLLIER	48	27	19, 25	ERP	GP	ENVIRONMENTAL RESOURCE (NEW GENERAL PERMIT)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150722-14	26-00820-P	SECTION 33 FARM	732.74	87.92	12.00%	INITIAL REVIEW	HENDRY	46	31	4	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	IMMOKALEE EXCHANGE L L C	AGRICULTURAL
150612-19	36-07251-P	SECTION 33 REGIONAL MITIGATION SITE	632.44	588.66	93.08%	COMPLETE	LEE	46	26	33	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONER	MITIGATION
160201-13	36-01871-S-13	SHOPPES AT GRANDE OAK - LOT 2 (DUNKIN DONUTS - VALVOLINE)	16.01	0.00	0.00%	NO RESPONSE	LEE	40	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	S S C 354714 L L C	COMMERCIAL
130930-21	36-00080-S	SITE PREPARATION FOR RUNWAY 6 R-24 L	5525.00	3662.63	66.29%	NO RESPONSE	LEE	45	26	19, 20, 29-32	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	AIRPORT RELATED FACILITIES
140618-3	36-04853-P-02	SOMERSET PHASE 4 B	13.93	0.00	0.00%	COMPLETE	LEE	45	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOME	RESIDENTIAL
131016-5	36-04853-P-02	SOMERSET PHASE 4A	65.68	0.00	0.00%	COMPLETE	LEE	45	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
150113-5	36-04853-P-02	SOMERSET PHASE 5	51.98	0.03	0.06%	COMPLETE	LEE	45	25	13	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	CENTEX HOMES	RESIDENTIAL
140825-15	11-00365-S	SOUTH RANCH	5373.64	2358.20	43.88%	COMPLETE	COLLIER	48	28	24,25	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	PACIFIC LAND L T D	AGRICULTURAL
150212-11	26-00220-S-04	SPIRIT OF THE WILD HYDROLOGIC RESTORATION	3142.43	1002.74	31.91%	COMPLETE	HENDRY	44	29	21,22,23,26,28,33,34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION	GOVERNMENT
141219-21	26-00220-S-04	SPIRIT OF THE WILD WILDLIFE MGMT AREA	7501.55	2398.86	31.98%	COMPLETE	HENDRY	44	29	21, 22, 23, 26, 27, 28, 33, 34	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	FLORIDA FISH AND WILDLIFE COMMISSION	GOVERNMENT
150217-3	11-03672-P	STARNES WATER CONTROL STRUCTURES	0.69	0.25	36.84%	COMPLETE	COLLIER	46	28	30	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW DEMINIMUS EXEMPTION)	NEW		AGRICULTURAL
160715-2		STATE ROAD 82 AT CORKSCREW ROAD (CR 850) INTERSECTION	10.67	0.50	4.73%	INITIAL REVIEW	COLLIER	46	28	4	ERP	EXEMP	ENVIRONMENTAL RESOURCE (NEW EXEMPTION)	NEW	COLLIER COUNTY TRANSPORTATION ENGINEERING	HIGHWAY

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
160408-8	11-02231-P	STONECREEK RECREATION TRACT	456.02	313.31	68.71%	COMPLETE	COLLIER	48	26	9	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	PARKLANDS ASSOCIATES I L L L P	RECREATIONAL
140225-23	36-00605-S-03	SW REGIONAL COMMERCE AND TRADE CENTER LOTS 15 AND 16	1.99	0.00	0.00%	COMPLETE	LEE	45	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	LINDBERGH32 L L C	COMMERCIAL
160427-17	26-00454-S	TANNER GROVE	140.77	32.03	22.76%	COMPLETE	HENDRY	45	29	17	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	GOODMAN GROVE PARTNERSHIP	AGRICULTURAL
150911-1	36-00080-S	TERMINAL ACCESS ROADWAY WIDENING	38.04	0.14	0.37%	COMPLETE	LEE	45	26	19	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	LEE COUNTY PORT AUTHORITY	AIRPORT RELATED FACILITIES
140305-4	11-00272-S	THE FLORIDA EVALUATION CENTER	533.17	411.01	77.09%	COMPLETE	COLLIER	49	28	22,27,34	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	CHRYSLER GROUP CARCO L L C	COMMERCIAL
140501-7	36-05075-P	THE GINN DEVELOPMENT AND GOLF COURSE	3469.85	1948.96	56.17%	COMPLETE	LEE	46	26	5,7,8	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ALICO EAST FUND L L C	RESIDENTIAL
140718-10	11-03312-P	THE LORDS WAY	4.10	0.37	9.02%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES, L L C	ROADWAY
160517-20	11-03312-P	THE LORDS WAY/HACIENDA LAKES BUSINESS PARK	1.79	0.00	0.00%	COMPLETE	COLLIER	50	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	HACIENDA LAKES OF NAPLES L L C	ROADWAY
150924-16	36-08561-P	THE PLACE	1361.55	125.13	9.19%	COMPLETE	LEE	46	26	23,24	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	THE PLACE AT CORKSCREW L L C	RESIDENTIAL
140516-12	36-05393-P	THE PRESERVE AT CORKSCREW	350.63	336.73	96.03%	COMPLETE	LEE	46	26	29	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	R C S - CORKSCREW LAND L L C	RESIDENTIAL
150604-16	36-05393-P	THE PRESERVE AT CORKSCREW	0.21	0.19	91.46%	COMPLETE	LEE	46	26	20	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE PRESERVE AT CORKSCREW MASTER ASSOCIATION INC	RESIDENTIAL
150410-7	36-01871-S-08	THE SHOPPES AT GRANDE OAK - PERKINS RESTAURANT - LOT 5	0.49	0.00	0.00%	COMPLETE	LEE	46	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	HARBOUR PRIVATE CAPITAL L L C	COMMERCIAL
160229-15	11-02336-P	THE TOWN OF AVE MARIA	1741.30	138.43	7.95%	COMPLETE	COLLIER	48	29	4, 7, 8, and 9	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	AVE MARIA STEWARDSHIP COMMUNITY DISTRICT	RESIDENTIAL
141003-14	36-01871-S-09	TIDEWATER (UNIVERSITY HIGHLAND TRACT 1)	128.99	125.36	97.18%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	UNIVERSITY HIGHLAND LIMITED PARTERSHIP	RESIDENTIAL
160113-2	36-01871-S-09	TIDEWATER (UNIVERSITY HIGHLANDS)	128.99	125.36	97.19%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	UNIVERSITY HIGHLANDS LIMITED PARTNERSHIP	COMMERCIAL
150911-14	36-00678-S-36	TIMBERWOOD PRESERVE AT GATEWAY	15.14	15.06	99.49%	COMPLETE	LEE	45	26	08	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	W C I COMMUNITIES L L C	RESIDENTIAL
150521-24	36-03568-P	TRACT M-M	1.10	0.00	0.00%	COMPLETE	LEE	46	25	14	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	MIROMAR LAKES GOLF CLUB L L C	RESIDENTIAL
141009-1	11-03652-P	TREE FARM P U D	52.02	1.88	3.61%	UNDER REVIEW	COLLIER	48	26	22	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND NEW CONSTRUCTION/OPERATION)	NEW	LANDQUEST GROUP, L L C	RESIDENTIAL
130924-10	11-02513-P	TREE FARM ROAD	11.74	4.75	40.47%	WITHDRAWN	COLLIER	48	26	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	NEAL COMMUNITIES	ROADWAY
140908-6	11-03706-P	TREE FARM ROAD EXTENSION	1.26	0.87	68.82%	COMPLETE	COLLIER	48	26	25, 26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
150721-17	36-00080-S	TREELINE AVE - BUS STOP B S 9, B S 10	0.46	0.08	18.51%	INITIAL REVIEW	LEE	45	25	35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	L C D O T	ROADWAY
140609-1	36-04033-P-02	TREELINE DISTRIBUTION CENTER	21.49	0.00	0.00%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	J D C PROPERTY GROUP L L C	COMMERCIAL
151229-3	36-04033-P-02	TREELINE DISTRIBUTION CENTER	21.06	0.00	0.00%	COMPLETE	LEE	45	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	J D C FORT MYERS L L C	COMMERCIAL
141231-37	36-05251-P	TREELINE PRESERVE	3.61	0.00	0.00%	NO RESPONSE	LEE	44	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	NRG DEVELOPMENT L L C	COMMERCIAL
141016-3	11-00324-S	TROYER GROVE	116.32	21.35	18.35%	COMPLETE	COLLIER	47	27	14,23	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	BEAR HAMMOCK GROVE L L C	AGRICULTURAL
151207-14	11-02891-P	TWIN EAGLES SOUTH	522.24	0.00	0.00%	COMPLETE	COLLIER	48	27	29-32	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	NAPLES ASSOCIATES I V L L L P	RESIDENTIAL
160617-12	11-02891-P	TWIN EAGLES SOUTH	522.24	1017.56	194.85%	COMPLETE	COLLIER	48	27	29-32	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	NAPLES ASSOCIATES I V L L L P	RESIDENTIAL
130916-15	11-02891-P	TWIN EAGLES SOUTH (F K A IMMOKALEE ROAD SOUTH)	522.24	508.78	97.42%	COMPLETE	COLLIER	48	27	29	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	NAPLES ASSOCIATES I V L L L P	RESIDENTIAL
140703-5	36-05198-P-05	TWIN PEAKS RESTAURANT	1.63	0.00	0.00%	COMPLETE	LEE	46	25	02	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DMD FLORIDA RESTARAUNT GROUP F LLC	COMMERCIAL
140722-4	11-01567-P	TWINEAGLES - BLOCK 111	17.99	0.00	0.00%	COMPLETE	COLLIER	48	27	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE TWINEAGLES CLUB L L C	RESIDENTIAL
140415-11	11-01567-P	TWINEAGLES - BLOCK 109	249.89	101.52	40.63%	COMPLETE	COLLIER	48	27	17	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	THE TWINEAGLES CLUB L L C	RESIDENTIAL
150113-9	11-01567-P-03	TWINEAGLES GRAND ARBORS (BLOCK 110)	4.58	0.00	0.00%	COMPLETE	COLLIER	48	27	17	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	TWINEAGLES DEVELOPMENTS A G R, L L C	RESIDENTIAL
141001-5	11-03649-P	U S 41 FROM MOSQUITO CANAL TO S R 29	0.19	0.19	99.92%	COMPLETE	COLLIER	52	28	9,13	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	FLORIDA DEPARTMENT OF TRANSPORTATION	HIGHWAY
140226-7	36-01871-S-09	UNIVERSITY HIGHLAND - N M DEVELOPMENT	128.99	125.36	97.18%	COMPLETE	LEE	46	25	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	UNIVERSITY HIGHLAND LIMITED PARTNERSHIP	COMMERCIAL
160111-13	36-02881-S	UNIVERSITY LOOP PROJECT (B2)	7.52	6.55	87.11%	COMPLETE	LEE	46	25	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	FLORIDA GULF COAST UNIVERSITY	RECREATIONAL
140725-8	36-03568-P	UNIVERSITY VILLAGE	490.13	441.40	90.06%	HEARING	LEE	46	25	24	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	MIROMAR DEVELOPMENT CORPORATION	RESIDENTIAL
131014-5	11-00418-S	VALENCIA GOLF & COUNTRY CLUB LAKE 4-2 MODIFICATION	6.00	3.87	64.52%	COMPLETE	COLLIER	48	27	23	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ORANGETREE ASSOCIATES	RESIDENTIAL
140320-4	11-00418-S-11	VALENCIA GOLF AND COUNTRY CLUB PHASE 3	6.08	0.20	3.29%	COMPLETE	COLLIER	48	27	23 and 24	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	ORANGTREE ASSOCIATES	RESIDENTIAL
131030-3	11-02132-P-02	VERONAWALK	104.22	2.18	2.09%	COMPLETE	COLLIER	50	26	26, 34, 35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	D IVOSTA HOMES L P	RESIDENTIAL
150529-23	11-00596-S	VOYAGER HOLDINGS	24.23	1.38	5.70%	COMPLETE	COLLIER	46	29	17	ERP	IND	ENVIRONMENTAL RESOURCE (GENERAL PERMIT TRANSFER)	TRANS	VOYAGER HOLDINGS L L C	AGRICULTURAL
140327-4	11-03661-P	WARM SPRINGS	99.65	96.20	96.53%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ARGO WARM SPRINGS, L L C	RESIDENTIAL
150831-16	11-03661-P	WARM SPRINGS	99.69	96.24	96.54%	COMPLETE	COLLIER	48	26	26	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND NEW CONSTRUCTION/OPERATION)	MOD	ARGO WARM SPRINGS, L L L P	RESIDENTIAL
150319-4	36-08397-P	WAWA - COLONIAL BLVD AND S R 82	2.75	0.00	0.00%	COMPLETE	LEE	44	25	25	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	COLONIAL EXTENSION 322 L L C	COMMERCIAL

APPLICATION ID	PERMIT NO.	NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	APPLICATION STATUS	COUNTY	TWP	RGE	SEC	PERMIT TYPE	APPLICATION TYPE	FEE DESCRIPTION	APPLICATION KIND	COMPANY	LAND USE
150625-3		WEST MARSH PRESERVE	213.33	38.24	17.93%	NO RESPONSE	LEE	44	26	15	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	RECREATIONAL
150901-12	11-01770-P	WIDENING OF GOLDEN GATE BLVD FROM WILSON TO DESOTO	17.16	11.87	69.19%	COMPLETE	COLLIER	49	27	1-4	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
141006-19	11-01770-P	WIDENING OF GOLDEN GATE BOULEVARD FROM WILSON TO DESOTO	17.16	11.87	69.17%	COMPLETE	COLLIER	49	27	7	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION HOUSE BILL/ SENATE BILL)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	ROADWAY
141121-5	36-07485-P	WILD TURKEY STRAND PRESERVE - WOODSTORK FORAGING PILOT PROJ	110.65	19.02	17.19%	COMPLETE	LEE	45	26	14	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ENVIRONMENTAL RESTORATION
160127-5	36-07992-P	WILD TURKEY STRAND REGIONAL MITIGATION	586.40	347.73	59.30%	COMPLETE	LEE	46	26	3,4,5	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	LEE COUNTY BOARD OF COUNTY COMMISSIONERS	ENVIRONMENTAL RESTORATION
140516-10	36-05075-P	WILDBLUE	3040.11	1784.08	58.68%	COMPLETE	LEE	46	26	7	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	ALICO EAST FUND L L C	RESIDENTIAL
160107-17	36-05075-P	WILDBLUE	3034.90	1783.90	58.78%	NO RESPONSE	LEE	46	26	7,8,17,18,19,20	ERP	IND	ENVIRONMENTAL RESOURCE (PERMIT EXTENSION SB 2156 STATE OF EMERGENCY)	MOD	ALICO EAST FUND L L C	RESIDENTIAL
130911-2	36-00252-S	WILDCAT RUN GOLF AND COUNTRY CLUB	54.03	15.71	29.08%	COMPLETE	LEE	46	26	30	ERP	GP	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	LTRMD	WILDCAT RUN COUNTRY CLUB	RESIDENTIAL
150611-16		WILLOW RUN	473.22	176.40	37.28%	NO RESPONSE	COLLIER	50	26	11	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	K E WILLOW RUN PROPERTIES L L C	RESIDENTIAL
150918-5	11-02132-P	WINDING CYPRESS	1189.47	1152.48	96.89%	COMPLETE	COLLIER	50	26	34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DIVOSTA HOMES L P	RESIDENTIAL
150511-3	11-02132-P	WINDING CYPRESS LINEAR PARK	61.62	61.62	100.01%	NO RESPONSE	COLLIER	50	26	34,35	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD		RECREATIONAL
140917-7	11-02132-P	WINDING CYPRESS SOUTH	1143.55	1106.51	96.76%	COMPLETE	COLLIER	50	26	26,35	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	DI VOSTA HOMES L P	RESIDENTIAL
141219-23	11-02132-P	WINDING CYPRESS SOUTH	1143.55	1106.51	96.76%	COMPLETE	COLLIER	50	26	26, 35	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	BARRON COLLIER COMPANY, LTD	RESIDENTIAL
140811-5	11-02603-P-02	WOODCREST DRIVE	2.64	1.21	45.75%	COMPLETE	COLLIER	48	26	25 & 26	ERP	IND	ENVIRONMENTAL RESOURCE (NEW CONSTRUCTION/OPERATION)	NEW	ARGO WARM SPRINGS, L L C	ROADWAY
150120-24	11-02081-P-02	WOODCREST DRIVE - PHASE I I	9.70	3.74	38.57%	COMPLETE	COLLIER	48	26	25	ERP	IND	ENVIRONMENTAL RESOURCE (CONCEPTUAL APPROVAL MODIFICATION AND CONSTRUCTION/OPERATION MODIFICATION)	MOD	COLLIER COUNTY BOARD OF COUNTY COMMISSIONERS	RESIDENTIAL
140418-16	11-02649-P	YAHL MULCHING MITIGATION MODIFICATION	29.07	17.27	59.41%	NO RESPONSE	COLLIER	49	27	31	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	YAHL MULCHING AND RECYCLING INC	COMMERCIAL
131203-10	36-01606-S-02	YOUBI RESIDENCE SKI LAKE	91.77	48.16	52.48%	COMPLETE	LEE	45	27	34	ERP	IND	ENVIRONMENTAL RESOURCE (LETTER MOD W/TRANSFER)	MOD	EDENS TEAM L L C	RESIDENTIAL
150115-2	36-01606-S-02	YOUBI SKI LAKE MODIFICATION	91.77	48.16	52.48%	COMPLETE	LEE	45	27	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EDENS TEAM L L C	RESIDENTIAL
150616-4	36-01606-S-02	YOUBI SKI ACADEMY	91.77	48.16	52.48%	NO RESPONSE	LEE	45	27	34	ERP	IND	ENVIRONMENTAL RESOURCE (CONSTRUCTION/OPERATION MODIFICATION)	MOD	EDENS TEAM L L C	RESIDENTIAL
140502-11	36-01606-S-02	YOUBI SKI LAKE	91.77	48.16	52.48%	COMPLETE	LEE	45	27	34	ERP	IND	ENVIRONMENTAL RESOURCE (COMPLIANCE LETTER MOD)	MOD	EDENS TEAM L L C	AGRICULTURAL

Note: SFWMD applications from 2013 through 2016 were acquired from the SFWMD website (http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=unq_id=1128) July 2016.

EXHIBIT 39

ERPs ISSUED BY SFWMD WITHIN PANTHER FOCUS AREA

Exhibit 39. SFWMD ERPs Issued July 2013 through July 2016 within 25 Mile Radius and Panther Focus Area

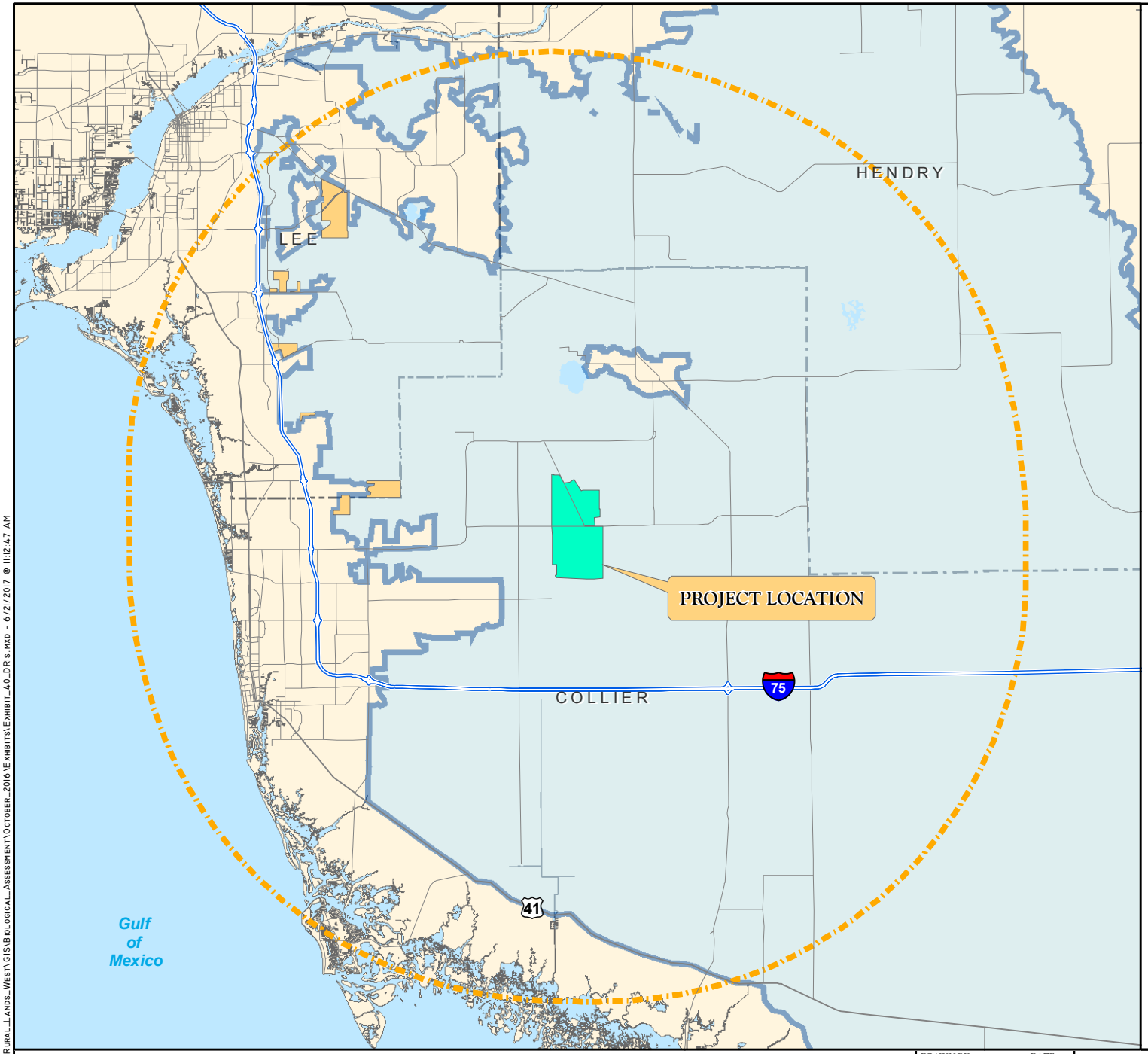
APPLICATION ID	PERMIT NO.	APPROVED DATE	PROJECT NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS ON PROJECT
120814-14	11-03462-P	July 1, 2013	LORDS WAY 30	91.11	59.82	22.37	3.51	0.00	65.7%
130821-6	36-05518-P-04	October 11, 2013	ALICO LAKES VILLAGE PARCELS C, D, F, AND I	3.21	2.09	0.00	0.00	0.00	65.2%
121212-13	36-00678-S-36	December 10, 2013	TIMBERWOOD PRESERVE AT GATEWAY	15.01	14.96	0.00	14.48	3.04	99.7%
131024-5	36-05518-P-05	December 11, 2013	PARCEL C AT ALICO LAKES	1.03	0.48	0.00	0.00	0.00	46.4%
131212-3	36-02881-S	January 21, 2014	FGCU CAMPUS CENTRAL ENERGY PLANT	1.99	0.91	0.00	0.00	0.00	45.7%
130502-5	11-02132-P	February 10, 2014	WINDING CYPRESS SOUTH	1,143.55	1,106.51	75.88	0.00	0.13	96.8%
130530-22	36-05188-P	March 31, 2014	F G C U INNOVATION HUB	240.27	240.23	0.00	0.00	0.00	100.0%
140102-8	36-00678-S-18	March 31, 2014	PELICAN PRESERVE NINE HOLES (BASIN 15)	28.36	17.36	0.00	0.00	0.00	61.2%
140206-8	11-02603-P	April 4, 2014	MASSEY STREET OUTFALL IMPROVEMENTS	0.83	0.08	0.00	0.00	0.00	10.1%
121214-4	36-04853-P-05	April 8, 2014	BOTANICA SOUTH	116.39	4.88	0.00	0.00	0.00	4.2%
140226-7	36-01871-S-09	April 18, 2014	UNIVERSITY HIGHLAND - N M DEVELOPMENT	128.99	125.36	0.00	0.00	0.00	97.2%
130916-15	11-02891-P	May 19, 2014	TWIN EAGLES SOUTH (F K A IMMOKALEE ROAD SOUTH)	522.24	508.78	0.00	23.61	143.78	97.4%
130718-23	11-02135-P	June 16, 2014	OFF-ROAD VEHICLE TRAIL STABILIZATION	150.86	126.82	2.48	NA	NA	84.1%
140106-2	11-02893-P	June 27, 2014	LIVING WORD FAMILY CHURCH	37.50	16.31	0.00	0.00	0.00	43.5%
140408-2	11-00904-S	July 3, 2014	AMERICAN FARMS 5 A C	52.44	11.68	0.00	0.00	0.00	22.3%
140530-5	36-04749-P-02	July 17, 2014	MIDWAY EXPANSION	0.71	0.00	0.00	0.00	0.00	0.0%
140227-5	36-03254-P	August 1, 2014	CORKSCREW SHORES AMENITY CENTER	12.36	0.00	0.00	0.00	0.00	0.0%
140515-2	36-05198-P-03	August 19, 2014	ARBYS ALICO	1.25	0.00	0.00	0.00	0.00	0.0%
140718-12	36-00678-S	September 10, 2014	HAMPTON PARK PARCEL J (PHASE 7)	257.80	60.68	0.00	0.00	0.00	23.5%
140425-12	11-02031-P	September 15, 2014	ESPLANADE GOLF AND COUNTRY CLUB OF NAPLES	19.47	18.76	15.97	0.00	0.00	96.4%
130905-8	26-01188-P	October 16, 2014	S R 82 WIDENING FROM LEE CO LINE TO COLLIER CO LINE	38.07	6.75	4.19	0.00	0.00	17.7%
140306-12	11-02336-P-03	October 27, 2014	DEL WEBB 201-203	164.60	13.55	0.00	0.00	0.00	8.2%
140703-5	36-05198-P-05	October 30, 2014	TWIN PEAKS RESTAURANT	1.63	0.00	0.00	0.00	0.00	0.0%
140529-2	11-02279-P	November 5, 2014	NATIVE POND RESTORATION ON THE FLORIDA PANTHER NWR	4.90	4.90	0.00	4.70	0.00	99.9%
140917-7	11-02132-P	November 13, 2014	WINDING CYPRESS SOUTH	1,143.55	1,106.51	0.00	0.00	0.00	96.8%
140723-12	11-00968-S	November 20, 2014	S R 29 WILDLIFE CROSSINGS	31.46	30.45	0.00	0.00	0.00	96.8%
141007-4	11-02748-P	December 3, 2014	AMERIMED CENTER	17.91	0.43	0.00	0.00	0.00	2.4%
141029-14	36-05198-P-06	December 17, 2014	JASONS DELI - GULFCOAST LANDINGS	1.39	0.00	0.00	0.00	0.00	0.0%
140721-4	11-00090-S-02	January 2, 2015	NAPLES RESERVE ISLAND CLUB	6.13	0.00	0.00	0.00	0.00	0.0%
140124-13	36-03568-P-05	January 12, 2015	CENTERPLACE	8.95	7.45	44.49	25.09	1.43	83.3%
141001-5	11-03649-P	January 21, 2015	U S 41 FROM MOSQUITO CANAL TO S R 29	0.19	0.19	0.27	0.00	0.00	98.4%
141003-14	36-01871-S-09	February 16, 2015	TIDEWATER (UNIVERSITY HIGHLAND TRACT 1)	128.99	125.36	0.00	0.00	0.00	97.2%
141205-13	11-02336-P	February 16, 2015	A M MODIFICATION TO BASINS UN 1, UN 4, UN 6, AND IR 5	167.03	27.18	0.00	0.00	0.00	16.3%
141121-5	36-07485-P	March 5, 2015	WILD TURKEY STRAND PRESERVE - WOODSTORK FORAGING PILOT PROJ	110.65	19.03	0.00	0.00	0.00	17.2%
141124-8	11-02135-P	March 6, 2015	OFF ROAD VEHICLE TRAIL STABILIZATION MITIGATION MODIFICATION	296.16	296.16	0.00	NA	NA	100.0%
141124-2	11-00090-S-03	March 13, 2015	PARROT CAY	36.60	0.00	0.00	0.00	0.00	0.0%
141215-18	36-04853-P-06	March 23, 2015	ARBORWOOD PRESERVE- BASIN B3	181.46	20.60	0.00	0.00	0.00	11.4%
140327-4	11-03661-P	March 30, 2015	WARM SPRINGS	99.65	96.20	53.39	29.35	1.86	96.5%
140609-1	36-04033-P-02	April 1, 2015	TREELINE DISTRIBUTION CENTER	21.49	0.00	0.39	1.46	0.00	0.0%
141010-5	11-01839-P-02	April 3, 2015	LA MORADA (F K A INDIAN HILL ESTATES)	224.54	70.75	0.00	0.00	0.00	31.5%
141223-8	11-01839-P	April 3, 2015	CALUSA PINES	297.68	83.79	0.00	0.00	0.00	28.1%
150204-11	36-05188-P-02	April 17, 2015	F G C U EMERGENT TECH INSTITUTE	6.61	6.61	0.00	0.00	0.00	100.1%
150120-24	11-02081-P-02	April 21, 2015	WOODCREST DRIVE - PHASE I I	9.70	3.74	0.00	0.00	0.00	38.6%
140725-8	36-03568-P	May 11, 2015	UNIVERSITY VILLAGE	490.13	441.40	0.00	0.00	0.00	90.1%
150107-11	11-03462-P	June 5, 2015	ESTILO (FKA LORDS WAY 30)	106.81	73.21	0.00	3.51	0.00	68.5%
150325-4	11-00248-S-02	June 16, 2015	OCHOPEE HYDROLOGIC RESTORATION, PHASE 2	2.30	2.30	0.00	NA	NA	100.2%
150319-4	36-08397-P	June 18, 2015	WAWA - COLONIAL BLVD AND S R 82	2.75	0.00	0.00	0.00	0.00	0.0%

APPLICATION ID	PERMIT NO.	APPROVED DATE	PROJECT NAME	PROJECT AC.	WETLAND AC.	WETLAND IMPACTS	WETLAND PRESERVE	UPLAND PRESERVE	PERCENT WETLANDS ON PROJECT
150219-18	11-01714-P	June 29, 2015	GOLF CLUB OF THE EVERGLADES	505.95	452.40	0.00	0.00	0.00	89.4%
150506-14	26-00516-S	July 2, 2015	I P S - RENFROE FARM	476.56	83.18	0.00	0.00	0.00	17.5%
141205-17	11-00999-S	July 8, 2015	IMMOKALEE REGIONAL AIRPORT	2.62	0.00	0.00	0.00	0.00	0.0%
150513-9	36-05136-P-09	July 9, 2015	EXECUTIVE OFFICES AND TRAINING FACILITY	4.04	0.08	0.00	0.00	0.00	1.9%
140811-5	11-02603-P-02	July 24, 2015	WOODCREST DRIVE	2.64	1.21	0.91	0.00	0.00	45.7%
140908-6	11-03706-P	July 24, 2015	TREE FARM ROAD EXTENSION	1.26	0.87	3.50	0.00	0.00	68.8%
140516-10	36-05075-P	August 3, 2015	WILDBLUE	3,040.11	1,784.09	210.92	850.98	484.72	58.7%
150225-8	36-07151-P	August 10, 2015	S R 82 FROM LEE BOULEVARD TO SHAWNEE ROAD	69.88	45.37	1.68	0.00	0.00	64.9%
150909-8	11-02268-P-09	October 8, 2015	AUTOZONE AT MISSION HILLS SHOPPING CENTER (PARCEL 8)	0.33	0.00	0.00	0.00	0.00	0.00%
150831-16	11-03661-P	October 20, 2015	WARM SPRINGS	99.69	96.24	0.00	0.00	0.00	96.54%
150928-3	36-05136-P-10	November 20, 2015	S W INTERNATIONAL TRACT F-3	4.11	0.01	0.00	0.00	0.00	0.22%
151005-17	11-02336-P-09	November 25, 2015	ANTHEM PARKWAY & MAPLE RIDGE PHASES 4 & 5 (BASIN PS1-SOUTH)	327.50	29.80	0.00	0.00	0.00	9.10%
150821-13	36-01303-S	December 3, 2015	LEE CO COMPLETE ST INITIATIVE TIGER GRANT 19 DANIELS PKWY	8.43	1.78	1.28	0.33	0.00	21.12%
151023-7	11-02234-P-07	December 7, 2015	C R-951 EXTENSION (WEATHERED STONE DRIVE - TORRE VISTA LANE)	4.34	0.02	0.00	0.00	0.00	0.47%
150820-1	11-00418-S-06	December 16, 2015	PUBLIX ORANGETREE	9.98	0.00	0.00	0.00	0.00	0.00%
150911-1	36-00080-S	December 23, 2015	TERMINAL ACCESS ROADWAY WIDENING	38.04	0.14	0.00	0.00	0.00	0.37%
150914-16	36-04234-P-05	December 31, 2015	BONITA NATIONAL	500.27	38.03	0.00	0.00	0.00	7.60%
150924-5	11-03750-P	January 15, 2016	HADLE NURSERY	36.21	20.74	0.00	0.00	0.00	57.28%
151015-4	36-04853-P-05	January 29, 2016	MARINA BAY RECREATION TRACT AND PARCELS C AND E	80.47	0.00	0.00	0.00	0.00	0.01%
150918-5	11-02132-P	February 2, 2016	WINDING CYPRESS	1,189.47	1,152.48	0.00	0.00	0.00	96.89%
151105-7	36-05198-P-07	February 5, 2016	GULF COAST LANDING	1.05	0.00	0.00	0.00	0.00	0.00%
160205-5	36-04853-P-06	March 25, 2016	ARBORWOOD AMENITY CENTER	9.03	0.00	0.00	0.00	0.00	0.00%
160209-3	11-01863-P	March 25, 2016	CITY GATE BOULEVARD NORTH EXTENSION (PHASE 2)	5.74	5.74	0.00	0.00	0.00	100.00%
151217-1	11-03779-P	April 6, 2016	COLLIER CHARTER SCHOOL	9.71	2.58	0.00	1.13	1.35	26.62%
160120-5	11-00090-S-02	April 20, 2016	NAPLES RESERVE TENNIS CENTER	25.94	0.00	0.00	0.00	0.00	0.00%
160229-15	11-02336-P	April 21, 2016	THE TOWN OF AVE MARIA	1,741.30	138.43	0.00	0.00	0.00	7.95%
151215-2	11-03312-P-05	April 29, 2016	HACIENDA LAKES TRACT B	141.45	59.48	0.00	0.00	0.00	42.05%
160330-6	26-00270-S	May 16, 2016	BETHEA GROVE INTERNAL LATERAL DITCHES	164.14	6.38	0.00	6.38	0.00	3.89%
160401-1	36-04853-P-05	May 20, 2016	MARINA BAY PLAT THREE	27.96	0.34	0.00	0.00	0.00	1.20%
150924-16	36-08561-P	May 23, 2016	THE PLACE	1,361.55	102.74	0.41	102.07	27.68	7.55%
160408-8	11-02231-P	July 6, 2016	STONECREEK RECREATION TRACT	456.02	313.31	0.00	0.00	0.00	68.71%

Note: SFWMD applications from 2013 through 2016 were acquired from the SFWMD website (http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=ung_id=1128) July 2016. The SFWMD ePermitting website was then researched to determine ERPs issued from 2013 through 2016.

EXHIBIT 40

DRIs 2013 THROUGH 2016 WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA



LEGEND

- Rural Lands West
- 25 Mile Radius
- Panther Focus Area
- DRIs

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NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

DRIs WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE HTTP://WWW.FGDL.ORG/METADATAEXPLORER/EXPLORER.JSP JULY 2016 AND ARE CURRENT TO FEBRUARY 2015.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

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EXHIBIT 40. DRIs 2013 THROUGH 2016 WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

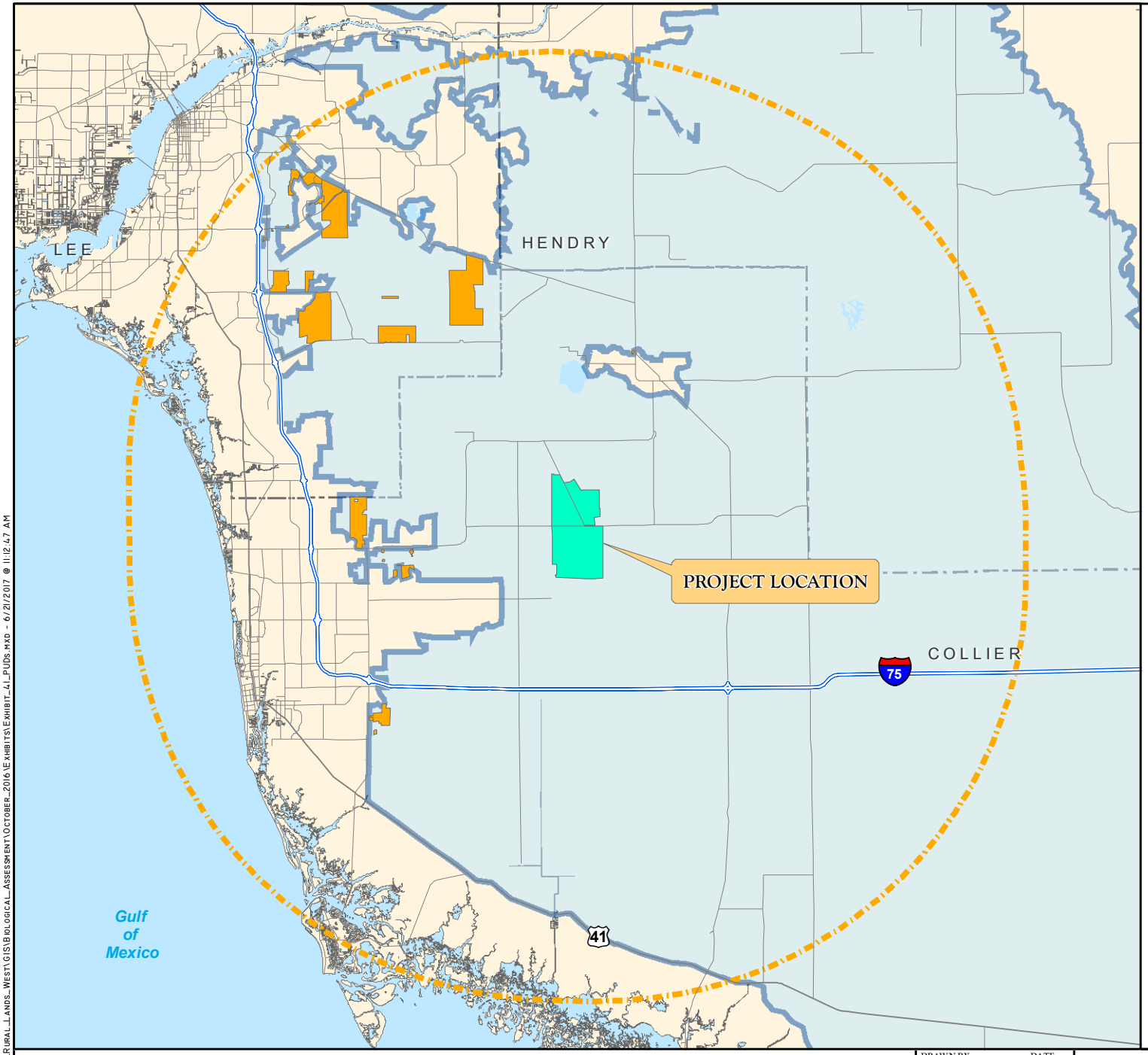
Exhibit 40A. DRIs 2013 through 2016 within 25 Mile Radius and Panther Focus Area

PROJECT NAME	PROJECT ACRES	WETLAND ACRES	PERCENT WETLANDS ON PROJECT	ADA NO.	DATE APPROVED
BONITA BEACH ROAD	1,174.98	282.64	24.05%	2001-014	02/23/01
BONITA GRANDE R.V. RESORT, INC.	94.77	0.82	0.87%	1990-029	11/02/89
FLORIDA GULF COAST TECHNOLOGY & RESEARCH PARK	620.95	366.22	58.98%	2007-028	04/19/07
PARKLANDS WEST	486.01	308.14	63.40%	1989-003	07/29/88
THE FOUNTAINS	2,745.52	1,653.17	60.21%	2006-018	01/23/06
TIMBERLAND & TIBURON	571.46	223.27	39.07%	1985-008	07/20/84

Note: DRIs were acquired from the Florida Geographic Data Library website http://www.fgdl.org/metadataexplorer/explorer.jsp in July 2016.

EXHIBIT 41

PUDs 2013 THROUGH 2016 WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA



LEGEND

- Rural Lands West
- 25 Mile Radius
- Panther Focus Area
- PUDs

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NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

COLLIER PUDS WERE ACQUIRED FROM THE COLLIER COUNTY GIS WEBSITE (HTTP://WWW.COLLIERGOV.NET /INDEX.ASPX?PAGE=2713) JULY 2016.

LEE PUDS WERE ACQUIRED FROM THE LEE COUNTY GOVERNMENT WEBSITE (HTTP://LEEGIS.LEEGOV.COM/GISDATA.HTM) JULY 2016.

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EXHIBIT 41. PUDs 2013 THROUGH 2016 WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

Exhibit 41A. Lee County PUDs 2013 through 2016 within Panther Action Area

NAME	PROJECT AC.	WETLAND AC.	PERCENT WETLANDS ON PROJECT	INITIAL APPLICATION	STATUS	ZONING CATEGORY	MASTER NO.	INITIAL RESOLUTION
Cemex, Alico Rd Quarry PH3C	261.65	261.21	99.83%	2014	Approved	MEPD	DCI2010-00012	Z-13-026
Centerplace	3.61	3.61	100.00%	2015	Approved	CCPD	DCI2013-00023	Z-14-021
Corkscrew Farms	1360.99	123.66	9.09%	2015	Approved	RPD	DCI2015-00004	Z-15-025
Daniels Rd Showroom Warehouse	6.11	2.80	45.79%	Pend	Pending	IPD		
Florida Gulf Coast Technology	719.90	450.90	62.63%		Pending	MPD	DRI2007-00002	
Gateway DRI and PUD Amendment	744.17	306.93	41.25%	Pend	Approved	PUD	DRI2011-00004	
Greenmeadow Mine Expansion	79.39	26.71	33.65%	Pend	Approved	IPD	960721903Z	Z88210
Old Corkscrew Plantation	4202.46	1246.62	29.66%	Pend	Pending	IPD	DCI2011-00007	Pending
The Fountains	2738.49	1647.56	60.16%	Pend	Pending	MPD	DCI2006-00029	
Wildblue	2922.50	1779.20	60.88%	2015	Approved	MPD	DCI2014-00009	Z-15-021
Dogwood CPD	3.70	0.00	0.00%	Pend	Pending	CPD	DCI2006-00093	
Dogwood IPD	7.38	0.00	0.00%	Pend	Pending	IPD	DCI2006-00093	
Treeline Distribution Center	21.21	0.00	0.00%	2015	Approved	IPD	DCI2014-00011	Z-14-034

Note: Lee PUDs were acquired from the Lee County government website (http://leegis.leegov.com/gisdata.htm) July 2016.

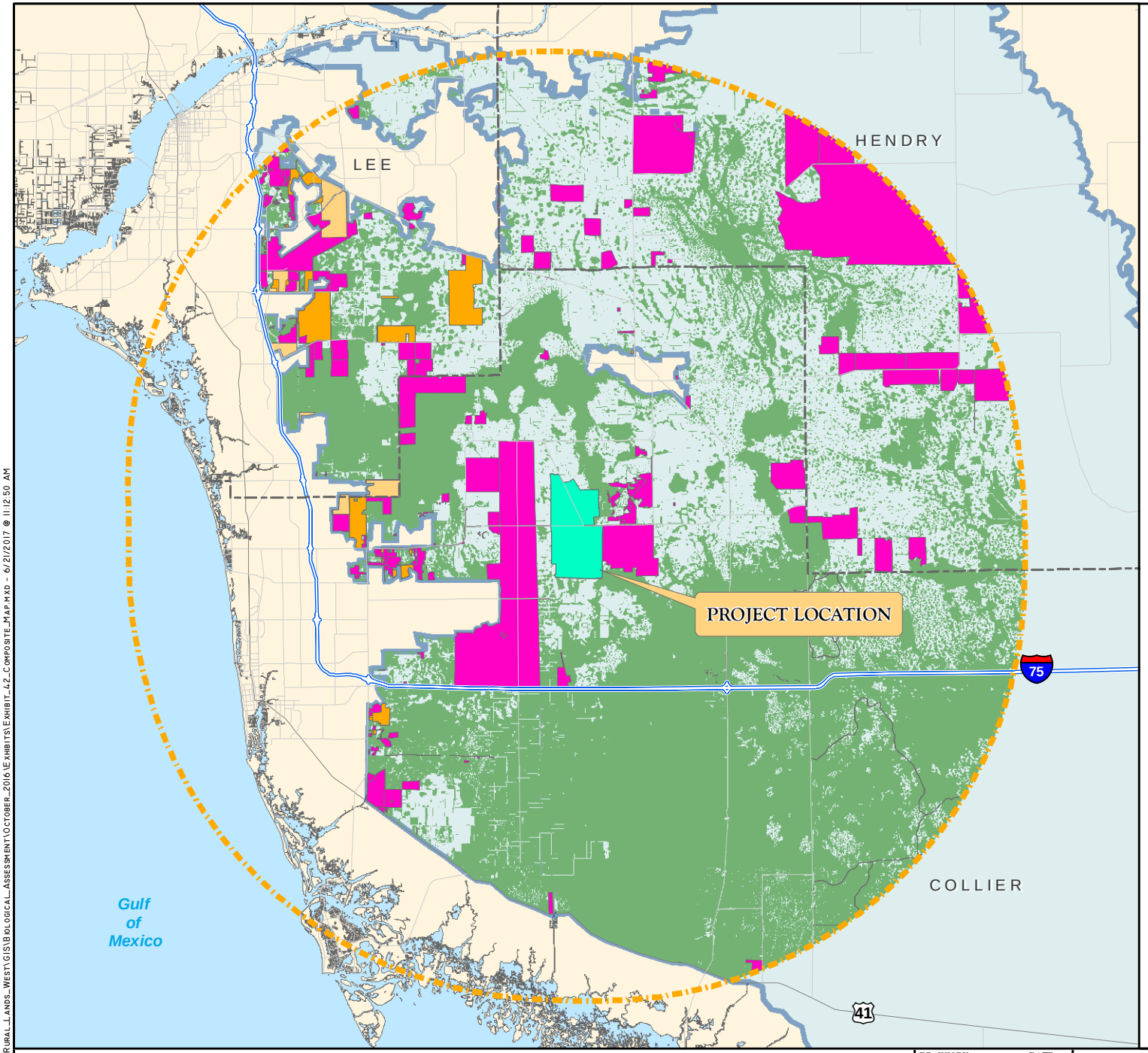
Exhibit 41B. Collier County PUDs 2013 through 2016 within 25 Mile Radius and Panther Focus Area

NAME	WETLAND ACRES	PROJECT ACRES	PERCENT OF WETLANDS ON PROJECT	PETITION	STATUS	SYS PUD NU	ORDINANCE NUMBER	DATE APPROVED
ABACO CLUB RPUD	11.39	16.55	68.83%	PUDZ-PL2015-204	ACTIVE		16-09	
ESPLANADE GOLF AND COUNTRY	1568.75	1598.01	98.17%	PUD-99-10	ACTIVE	AR-9124	01-20; 14-36	10/14/14
GOLF CLUB OF THE EVERGLADES	267.29	299.35	89.29%	PUDZ-PL2013-1374	ACTIVE		14-21	6/10/14
HABITAT - WOODCREST	0.11	11.47	0.95%	PUDZ-2005	ACTIVE	AR-7883	07-63	
LIDO ISLES	21.67	22.54	96.13%	RPUD-PUDZ-PL2014-393	ACTIVE		15-35	6/23/15
LIVING WORD FAMILY CHURCH	15.55	35.22	44.16%	PUDZ-2011	ACTIVE	PL11-0762	13-60	10/22/13
SR29	7.84	10.70	73.29%	PUDZ-PL2013-1241	ACTIVE		15-23	3/10/15
WESTCLOX 29 CPUD	0.44	0.44	100.00%	PUDZ-PL2015-660	ACTIVE		16-04	
WILLOW RUN	261.03	558.03	46.78%	RPUD-PUDZ-PL2013-682	ACTIVE		14-35	9/23/14
THE LORD'S WAY 30 ACRE RPUD	0.00	30.17	0.00%	PUDZ-PL2013-827	ACTIVE		14-11	

Note: Collier PUDs were acquired from the Collier County GIS website (http://www.colliergov.net/index.aspx?page=2713) July 2016.

EXHIBIT 42

SFWMD APPLICATIONS, DRIs, PUDs, AND NWI MAPPING WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA



LEGEND

- Rural Lands West
- 25 Mile Radius
- Panther Focus Area
- DRIs
- PUDs
- SFWMD ERP Applications
- National Wetlands Inventory

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NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

COLLIER PUDS WERE ACQUIRED FROM THE COLLIER COUNTY GIS WEBSITE (HTTP://WWW.COLLIERGOV.NET /INDEX.ASPX?PAGE=2713) JULY 2016.

LEE PUDS WERE ACQUIRED FROM THE LEE COUNTY GOVERNMENT WEBSITE (HTTP://LEEGIS.LEEGOV.COM/GISDATA.HTM) JULY 2016.

DRIs WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE HTTP://WWW.FGDL.ORG/METADATAEXPLORER/ EXPLORER.JSP JULY 2016 AND ARE CURRENT TO FEBRUARY 2015.

SFWMD ERP APPLICATIONS FROM 2013 THROUGH 2016 WERE ACQUIRED FROM THE SFWMD WEBSITE (HTTP://MY.SFWMD. GOV/GISAPPS/SFWMDXWEBDC/DATAVIEW .ASP?QUERY=UNQ_ID=1128) JULY 2016.

NATIONAL WETLANDS INVENTORY WAS ACQUIRED FROM THE USFWS WEBSITE HTTP://WWW.FWS.GOV/GIS/DATA/NATIONAL/ INDEX.HTML JULY 2016.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

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EXHIBIT 42. SFWMD APPLICATIONS, DRIs, PUDs, AND NWI MAPPING WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
K.C.P.	10/25/16
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

EXHIBIT 43

PROJECTS WITH LESS THAN 5 PERCENT WETLANDS WITHIN PANTHER FOCUS AREA

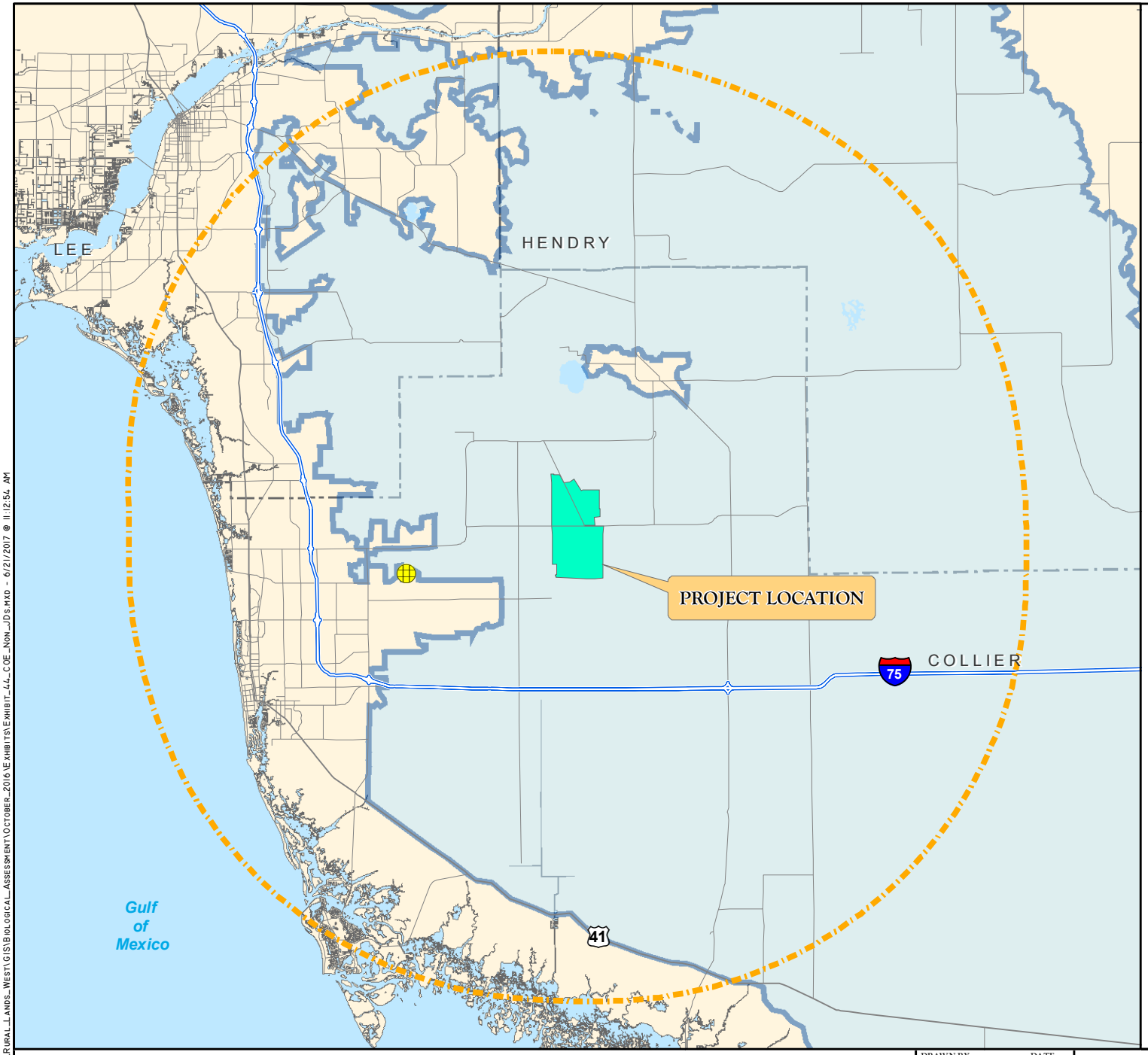
Exhibit 43. Projects Within the 25 Mile Radius and Panther Focus Area Having Less Than Five Percent Wetlands

PROJECT NAME	PROJECT AC.	WETLAND AC.	PERCENT OF WETLAND ON PROJECT	DRI	PUD	DISTRICT
10060 BAVARIA ROAD - LOTS 5 A AND 5 B BLOCK D	0.00	0.00	0.00%			2014
858 COLLIER NORTH	2027.26	0.00	0.00%			2015
A C I - LOT 35	1.92	0.00	0.00%			2015
ALL AMERICAN PET RESORT EXPANSION	2.56	0.00	0.00%			2016
AMERIMED CENTER	17.91	0.43	2.41%			2014
ARBORWOOD AMENITY CENTER	9.03	0.00	0.00%			2016
ARBYS ALICO	1.25	0.00	0.00%			2014
ARTHREX AT AVE MARIA FINISHING FACILITY	14.86	0.00	0.00%			2013
ARTHREX BUILDING EXPANSION	50.91	0.00	0.00%			2015
AUTOZONE AT MISSION HILLS SHOPPING CENTER (PARCEL 8)	0.33	0.00	0.00%			2015
AVE MARIA - DEL WEBB ROAD CROSSING	1.13	0.00	0.00%			2015
AVE MARIA LAKE NUMBER 5C	1.74	0.00	0.00%			2015
AVE MARIA UNIVERSITY PRESS BOX	1.45	0.00	0.00%			2013
BETHEA GROVE INTERNAL LATERAL DITCHES	164.14	0.00	0.00%			2016
BIG CYPRESS FLEA MARKET - PHASES 3 AND 4	10.28	0.00	0.00%			2014
BONITA GRANDE R.V. RESORT, INC.	94.77	0.82	0.87%	Indefinite Hold		
BOTANICA SOUTH	237.41	6.26	2.64%			2015
BOTANICA SOUTH	237.41	6.26	2.64%			2014
BOTANICA SOUTH	116.39	4.88	4.19%			2015
BRIDGE REHABILITATION TO CR 858 BRIDGE OVER OBIE CANAL	0.04	0.00	0.00%			2014
BRIDGETOWN	6.10	0.08	1.39%			2015
BRIDGETOWN AT THE PLANTATION RE-USE LAKE	1.83	0.00	0.00%			2014
BRIDGETOWN PARCEL B-13	28.95	0.00	0.00%			2014
BRIDGETOWN PARCEL B5	14.30	0.02	0.14%			2013
BRIDGETOWN PARCELS B-12 AND B-19	23.53	0.03	0.12%			2013
C R-951 EXTENSION (WEATHERED STONE DRIVE - TORRE VISTA LANE)	4.34	0.02	0.47%			2015
CENTERPLACE	8.95	0.00	0.00%			2016
CHURCH ROAD GROVE CULVERT CROSSING	0.94	0.00	0.00%			2015
COCO PLUM DEVELOPMENT SELF STORAGE	3.01	0.00	0.00%			2013
COCO PLUM DEVELOPMENT SELF STORAGE	3.01	0.00	0.00%			2013
COMCAST PARKING LOT EXPANSION	5.65	0.00	0.00%			2014
CORKSCREW ROAD INTERSECTION IMPROVEMENTS AT WILDCAT DRIVE	11.56	0.00	0.00%			2016
CORKSCREW SHORES AMENITY CENTER	12.36	0.00	0.00%			2014
CORKSCREW SHORES AMENITY CENTER	26.91	0.00	0.00%			2014
CRYSTAL LAKE R V RESORT STORAGE AREA	10.71	0.15	1.35%			2015
CRYSTAL LAKE R V RESORT STORAGE AREA	10.94	0.33	3.06%			2014
DEL WEBB CONSOLIDATED SALES AND MODEL CENTER	10.80	0.01	0.07%			2015
DOGWOOD CPD	3.70	0.00	0.00%		Pending	
DOGWOOD IPD	7.38	0.00	0.00%		Pending	
EXECUTIVE OFFICES AND TRAINING FACILITY	4.04	0.08	1.92%			2015
F G C U OFF-SITE UTILITY IMPROVEMENTS	12.58	0.14	1.11%			2014
F G C U ACADEMIC CORE RECREATIONAL FIELDS	11.43	0.02	0.15%			2016
F G C U OFF-SITE UTILITY IMPROVEMENTS	13.57	0.00	0.02%			2014
F G C U OFFSITE UTILITY IMPROVEMENTS-B H G P PORTION	13.57	0.00	0.02%			2014
F G C U PUBLIC RELATIONS MODULAR BLDG	0.73	0.02	3.13%			2015
FAKAHATCHEE MODULAR RESTROOM AND A D A RAMP	0.23	0.01	4.18%			2015
FIRST FRUIT FARMS CORKSCREW FARM	1173.90	42.62	3.63%			2014
FLORIDA GULF COAST UNIVERSITY - PARKING LOT/ACCESS ROAD	0.71	0.00	0.00%			2015
GULF COAST LANDING	1.05	0.00	0.00%			2015
HABITAT - WOODCREST	11.47	0.11	0.95%		2014	
HABITAT FOR HUMANITY OF COLLIER COUNTY - LEGACY LAKES	10.44	0.03	0.28%			2015
HAMPTON PARK AT GATEWAY LAKE #10/GRIFFIN ROAD SIDEWALK	18.25	0.01	0.06%			2014
HARRIS MORAN RESEARCH FACILITY	6.32	0.00	0.00%			2013
HARRIS MORAN RESEARCH FACILITY	7.63	0.00	0.00%			2014
IMMOKALEE RD CR 951 TO 43RD AVE N E (BASIN 4)	66.98	0.62	0.93%			2013
IMMOKALEE REGIONAL AIRPORT	2.62	0.00	0.00%			2014
IMMOKALEE REGIONAL AIRPORT PH 1 AND 2 (REF: A#130718-24)	2.26	0.00	0.00%			2013
IMMOKALEE ROAD CHLORAMINE BOOSTER STATION	66.98	0.62	0.93%			2014
JASONS DELI - GULFCOAST LANDINGS	1.39	0.00	0.00%			2014
JETPORT LOOP EXTENSION	0.93	0.00	0.00%			2016
K BOB GROVE	15.13	0.38	2.49%			2014
KAICASA	97.90	0.00	0.00%			2016
LA MORADA (F K A INDIAN HILL ESTATES)	206.18	0.00	0.00%			2015
LA MORADA MULTI-FAMILY TRACTS	25.68	0.17	0.65%			2015
LEE CO COMPLETE ST INITIATIVE TIGER GRANT 19 DANIELS PKWY	0.00	0.00	0.00%			2015
LEGACY LAKES	10.44	0.03	0.28%			2016
MAPLE RIDGE AT AVE MARIA PHASE 2	25.30	0.00	0.00%			2013
MAPLE RIDGE ESTATE MODEL LOTS	6.45	0.00	0.00%			2014
MARINA BAY PLAT THREE	27.96	0.34	1.20%			2016
MARINA BAY PLAT TWO (PARCELS C AND E)	80.57	0.00	0.01%			2015
MARINA BAY RECREATION TRACT AND PARCELS C AND E	80.47	0.00	0.01%			2015
MC DONALDS RESTAURANT - LOT 4	0.51	0.00	0.00%			2015
MIDWAY EXPANSION	0.71	0.00	0.00%			2014

PROJECT NAME	PROJECT AC.	WETLAND AC.	PERCENT OF WETLAND ON PROJECT	DRI	PUD	DISTRICT
NAPLES RESERVE - CORAL HARBOR	32.33	0.00	0.00%			2016
NAPLES RESERVE CLUBHOUSE PHASE I I	6.06	0.00	0.00%			2015
NAPLES RESERVE ISLAND CLUB	6.13	0.00	0.00%			2014
NAPLES RESERVE TENNIS CENTER	25.94	0.00	0.00%			2016
ORANGE BLOSSOM RANCH	510.75	24.15	4.73%			2014
ORANGE TREE SHERIFFS SUBSTATION	5.91	0.12	2.10%			2015
PACIFIC LAND COMPANY INDUSTRIAL PARK	14.24	0.00	0.00%			2014
PARROT CAY	36.60	0.00	0.00%			2014
PELICAN PRESERVE GOLF CLUBHOUSE OUTDOOR DINING EXPANSION	8.63	0.00	0.00%			2016
PELICAN PRESERVE TOWN CENTER EXPANSION	23.99	0.19	0.79%			2014
PELICAN PRESERVE TOWN CENTER PICKLE BALL COURTS	0.65	0.00	0.00%			2016
PUBLIX ORANGETREE	9.98	0.00	0.00%			2015
QUAIL WEST	0.82	0.00	0.00%			2015
RESERVE AT SILVERSTONE	147.04	0.53	0.36%			2013
RESERVE OF SILVERSTONE	277.43	0.00	0.00%			2015
S W F I A SECURITY GATE 64 RELOCATION	1.40	0.00	0.00%			2015
S W INTERNATIONAL TRACT F2	3.88	0.11	2.83%			2014
S W INTERNATIONAL TRACT F-2	3.88	0.11	2.83%			2014
S W INTERNATIONAL TRACT F-3	4.11	0.01	0.22%			2015
S W INTERNATIONAL TRACT K	6.55	0.07	1.05%			2014
SANDERS LABORATORIES FACILITY - PART OF LOT 6 BLOCK D	0.02	0.00	0.00%			2015
SHOPPES AT GRANDE OAK - LOT 2 (DUNKIN DONUTS - VALVOLINE)	16.01	0.00	0.00%			2016
SOMERSET PHASE 4 B	13.93	0.00	0.00%			2014
SOMERSET PHASE 4A	65.68	0.00	0.00%			2013
SOMERSET PHASE 5	51.98	0.03	0.06%			2015
STATE ROAD 82 AT CORKSCREW ROAD (CR 850) INTERSECTION	10.67	0.50	4.73%			2016
SW REGIONAL COMMERCE AND TRADE CENTER LOTS 15 AND 16	1.99	0.00	0.00%			2014
TERMINAL ACCESS ROADWAY WIDENING	38.04	0.14	0.37%			2015
THE LORD'S WAY 30 ACRE RPUD	30.17	0.00	0.00%		2014	
THE LORDS WAY/HACIENDA LAKES BUSINESS PARK	1.79	0.00	0.00%			2016
THE SHOPPES AT GRANDE OAK - PERKINS RESTAURANT - LOT 5	0.49	0.00	0.00%			2015
TRACT M-M	1.10	0.00	0.00%			2015
TREE FARM P U D	52.02	1.88	3.61%			2014
TREELINE DISTRIBUTION CENTER	21.49	0.00	0.00%			2014
TREELINE DISTRIBUTION CENTER	21.06	0.00	0.00%			2015
TREELINE DISTRIBUTION CENTER	21.21	0.00	0.00%		2015	
TREELINE PRESERVE	3.61	0.00	0.00%			2014
TWIN EAGLES SOUTH	522.24	0.00	0.00%			2015
TWIN PEAKS RESTAURANT	1.63	0.00	0.00%			2014
TWINEAGLES - BLOCK 111	17.99	0.00	0.00%			2014
TWINEAGLES GRAND ARBORS (BLOCK 110)	4.58	0.00	0.00%			2015
VALENCIA GOLF AND COUNTRY CLUB PHASE 3	6.08	0.20	3.29%			2014
VERONAWALK	104.22	2.18	2.09%			2013
WAWA - COLONIAL BLVD AND S R 82	2.75	0.00	0.00%			2015
TOTALS/AVERAGES	**7,327.25**	**94.72**	**0.60%**			

EXHIBIT 44

CORPS NON-JURISDICTIONAL DETERMINATIONS ISSUED 2009 THROUGH 2012 WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA



LEGEND

- Rural Lands West
- 25 Mile Radius
- Olde Florida Golf Phase II

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0 4 8 12
Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

CORPS NON-JURISDICTIONAL WAS OBTAINED ON JANUARY 28, 2012 AND MARCH 4, 2012 FROM THE FREEDOM OF INFORMATION ACT REQUEST NO.12-189.

J:\2005\05CEN\481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_44_COE_NON_JDS.MXD - 6/21/2017 @ 11:12:54 AM

EXHIBIT 44. COE NON-JURISDICTIONAL DETERMINATIONS ISSUED 2009 THROUGH 2012 WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. — Consulting Ecologists

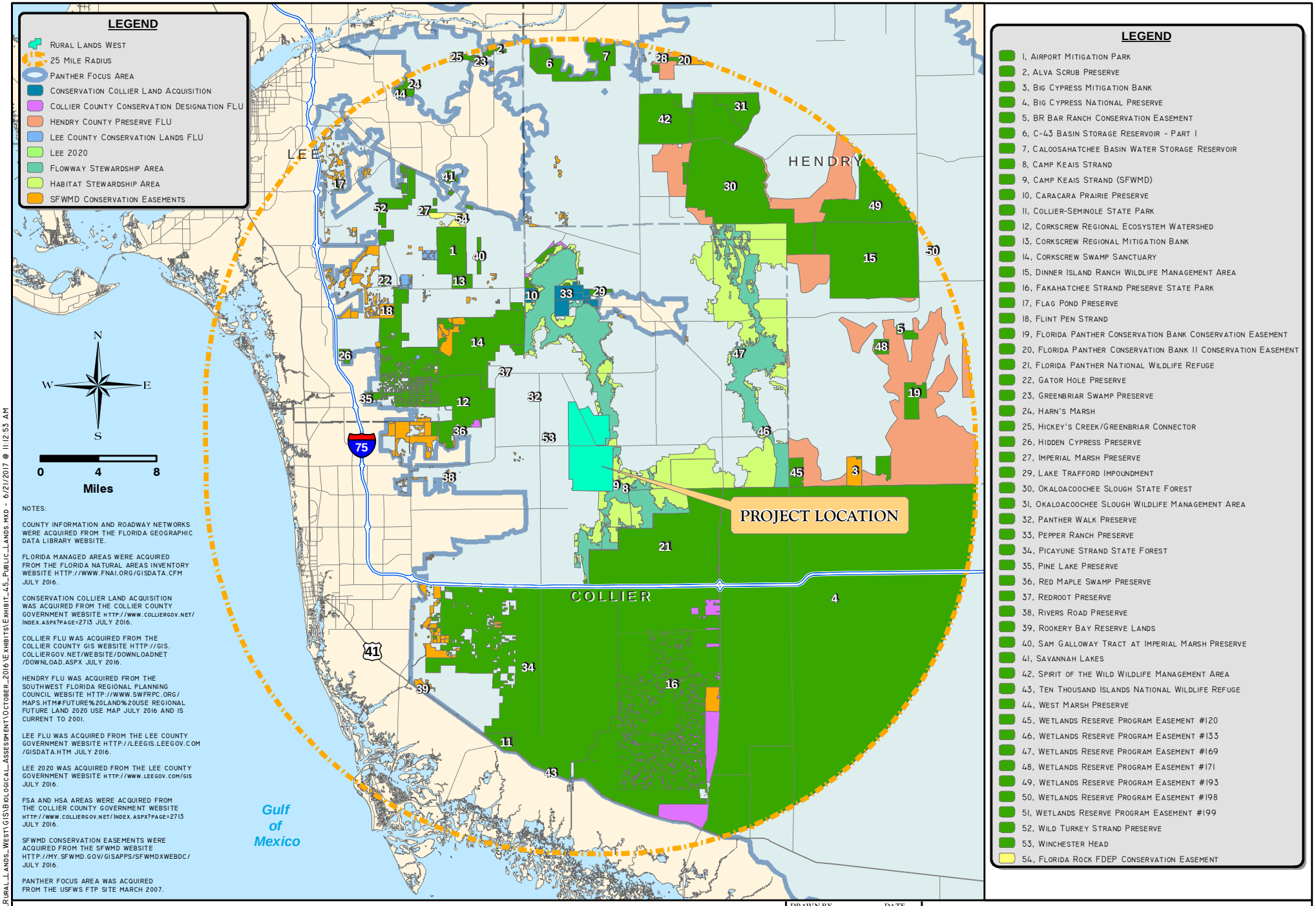
Exhibit 44A. Corps Non-Jurisdictional Determinations from 2009 through 2012 within 25 Mile Radius and Panther Focus Area

Map ID	Project	COE Application No.	Date	Location	Project Acreage	Isolated Wetland Acreage
1	Olde Florida Golf Club Phase II	SAJ-1993-31697	5/24/2011	Lat 26.251956 / Long 81.651793	258	30.88

Note: Corps non-jurisdictional information was obtained on January 28, 2012 and March 4, 2012 from Freedom of Information Act Request No. 12-189.

EXHIBIT 45

CUMULATIVE CONSERVATION LANDS WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA



NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

FLORIDA MANAGED AREAS WERE ACQUIRED FROM THE FLORIDA NATURAL AREAS INVENTORY WEBSITE HTTP://WWW.FNAI.ORG/GISDATA.CFM JULY 2016.

CONSERVATION COLLIER LAND ACQUISITION WAS ACQUIRED FROM THE COLLIER COUNTY GOVERNMENT WEBSITE HTTP://WWW.COLLIERGOV.NET/INDEX.ASPX?PAGE=2713 JULY 2016.

COLLIER FLU WAS ACQUIRED FROM THE COLLIER COUNTY GIS WEBSITE HTTP://GIS.COLLIERGOV.NET/WEBSITE/DOWNLOADNET/DOWNLOAD.ASPX JULY 2016.

HENDRY FLU WAS ACQUIRED FROM THE SOUTHWEST FLORIDA REGIONAL PLANNING COUNCIL WEBSITE HTTP://WWW.SWFRPC.ORG/MAPS.HTM#FUTURE%20LAND%20USE REGIONAL FUTURE LAND 2020 USE MAP JULY 2016 AND IS CURRENT TO 2001.

LEE FLU WAS ACQUIRED FROM THE LEE COUNTY GOVERNMENT WEBSITE HTTP://LEEGIS.LEEGOV.COM/GISDATA.HTM JULY 2016.

LEE 2020 WAS ACQUIRED FROM THE LEE COUNTY GOVERNMENT WEBSITE HTTP://WWW.LEEGOV.COM/GIS JULY 2016.

FSA AND HSA AREAS WERE ACQUIRED FROM THE COLLIER COUNTY GOVERNMENT WEBSITE HTTP://WWW.COLLIERGOV.NET/INDEX.ASPX?PAGE=2713 JULY 2016.

SFWMD CONSERVATION EASEMENTS WERE ACQUIRED FROM THE SFWMD WEBSITE HTTP://MY.SFWMD.GOV/GISAPPS/SFWMDXWEBDC/ JULY 2016.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

LEGEND

1, Airport Mitigation Park
2, Alva Scrub Preserve
3, Big Cypress Mitigation Bank
4, Big Cypress National Preserve
5, BR Bar Ranch Conservation Easement
6, C-43 Basin Storage Reservoir - Part 1
7, Caloosahatchee Basin Water Storage Reservoir
8, Camp Keais Strand
9, Camp Keais Strand (SFWMD)
10, Caracara Prairie Preserve
11, Collier-Seminole State Park
12, Corkscrew Regional Ecosystem Watershed
13, Corkscrew Regional Mitigation Bank
14, Corkscrew Swamp Sanctuary
15, Dinner Island Ranch Wildlife Management Area
16, Fakahatchee Strand Preserve State Park
17, Flag Pond Preserve
18, Flint Pen Strand
19, Florida Panther Conservation Bank Conservation Easement
20, Florida Panther Conservation Bank II Conservation Easement
21, Florida Panther National Wildlife Refuge
22, Gator Hole Preserve
23, Greenbriar Swamp Preserve
24, Harn's Marsh
25, Hickey's Creek/Greenbriar Connector
26, Hidden Cypress Preserve
27, Imperial Marsh Preserve
29, Lake Trafford Impoundment
30, Okaloacoochee Slough State Forest
31, Okaloacoochee Slough Wildlife Management Area
32, Panther Walk Preserve
33, Pepper Ranch Preserve
34, Picayune Strand State Forest
35, Pine Lake Preserve
36, Red Maple Swamp Preserve
37, Redroot Preserve
38, Rivers Road Preserve
39, Rookery Bay Reserve Lands
40, Sam Galloway Tract at Imperial Marsh Preserve
41, Savannah Lakes
42, Spirit of the Wild Wildlife Management Area
43, Ten Thousand Islands National Wildlife Refuge
44, West Marsh Preserve
45, Wetlands Reserve Program Easement #120
46, Wetlands Reserve Program Easement #133
47, Wetlands Reserve Program Easement #169
48, Wetlands Reserve Program Easement #171
49, Wetlands Reserve Program Easement #193
50, Wetlands Reserve Program Easement #198
51, Wetlands Reserve Program Easement #199
52, Wild Turkey Strand Preserve
53, Winchester Head
54, Florida Rock FDEP Conservation Easement

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EXHIBIT 45. CUMULATIVE CONSERVATION LANDS WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA
RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

Exhibit 45A. Conservation Lands within 25 Mile Radius and Panther Focus Area

MAP ID	NAME	MANAGING AGENCY	OWNER	COUNTY	TOTAL ACRES
1	Airport Mitigation Park	Lee County	Lee County	LEEX	4,154.70
2	Alva Scrub Preserve	Lee County	Lee County	LEEX	366.73
3	Big Cypress Mitigation Bank	Earthmark Southwest Florida Mitigation, LLC	Private Individual(s)	HEND	2,193.68
4	Big Cypress National Preserve	US Dept. of the Interior, National Park Service	US Dept. of the Interior, National Park Service	BROW, COLL, DADE, MONR	203,858.89
5	BR Bar Ranch Conservation Easement	FL Dept. of Environmental Protection, Div. of State Lands	Private Individual(s)	HEND	562.25
6	C-43 Basin Storage Reservoir - Part 1	South Florida Water Management District	South Florida Water Management District	HEND	2,058.20
7	Caloosahatchee Basin Water Storage Reservoi	South Florida Water Management District	South Florida Water Management District	HEND	3,374.39
8	Camp Keais Strand	Collier County	Collier County	COLL	32.96
9	Camp Keais Strand (SFWMD)	South Florida Water Management District	South Florida Water Management District	COLL	53.32
10	Caracara Prairie Preserve	Collier County	Collier County	COLL	380.34
11	Collier-Seminole State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks	Trustees of the Internal Improvement Trust Fund	COLL	1,181.47
12	Corkscrew Regional Ecosystem Watershed	South Florida Water Management District	South Florida Water Management District	COLL, LEEX	28,053.43
13	Corkscrew Regional Mitigation Bank	South Florida Water Management District	South Florida Water Management District	LEEX	643.54
14	Corkscrew Swamp Sanctuary	National Audubon Society, Inc.	National Audubon Society, Inc.	COLL, LEEX	13,117.90
15	Dinner Island Ranch Wildlife Management Ar	FL Fish and Wildlife Conservation Commission	Trustees of the Internal Improvement Trust Fund	HEND	21,702.40
16	Fakahatchee Strand Preserve State Park	FL Dept. of Environmental Protection, Div. of Recreation and Parks	Trustees of the Internal Improvement Trust Fund	COLL	66,439.58
17	Flag Pond Preserve	Lee County	Lee County	LEEX	66.92
18	Flint Pen Strand	Lee County	Lee County	LEEX	989.54
19	Florida Panther Conservation Bank Conservat	US Dept. of the Interior, Fish and Wildlife Service	Florida Panther Conservation, LLC	HEND	1,933.00
20	Florida Panther Conservation Bank II Conserv	US Dept. of the Interior, Fish and Wildlife Service	Florida Panther Conservation, LLC	HEND	358.47
21	Florida Panther National Wildlife Refuge	US Dept. of the Interior, Fish and Wildlife Service	US Fish & Wildlife Service	COLL	26,355.26
22	Gator Hole Preserve	Lee County	Lee County	LEEX	174.99
23	Greenbriar Swamp Preserve	Lee County East County Water Control District	Lee County	LEEX	352.03
24	Harn's Marsh	Lee County East County Water Control District	Lee County	LEEX	514.63
25	Hickey's Creek/Greenbriar Connector	Lee County	Lee County	LEEX	7.49
26	Hidden Cypress Preserve	Lee County	Lee County	LEEX	427.15
27	Imperial Marsh Preserve	Lee County	Lee County	LEEX	521.54
28	LaBelle Ranch, Inc. Conservation Easement	FL Dept. of Environmental Protection, Div. of State Lands	Private Individual(s)	HEND	842.11
29	Lake Trafford Impoundment	South Florida Water Management District	South Florida Water Management District	COLL	350.89
30	Okaloacoochee Slough State Forest	FL Dept. of Agriculture and Consumer Services, Florida Forest Service	South Florida Water Management District	COLL, HEND	32,341.31
31	Okaloacoochee Slough Wildlife Management	FL Fish and Wildlife Conservation Commission	Trustees of the Internal Improvement Trust Fund	HEND	2,992.60
32	Panther Walk Preserve	Collier County	Collier County	COLL	9.54
33	Pepper Ranch Preserve	Collier County	Collier County	COLL	2,460.10
34	Picayune Strand State Forest	FL Dept. of Agriculture and Consumer Services, Florida Forest Service	Trustees of the Internal Improvement Trust Fund	COLL	74,183.48
35	Pine Lake Preserve	Lee County	Lee County	LEEX	0.05
36	Red Maple Swamp Preserve	Collier County	Collier County	COLL	202.90
37	Redroot Preserve	Collier County	Collier County	COLL	8.97
38	Rivers Road Preserve	Collier County	Collier County	COLL	75.66
39	Rookery Bay Reserve Lands	FL Dept. of Environmental Protection, Florida Coastal Office	Trustees of the Internal Improvement Trust Fund	COLL	53.63
40	Sam Galloway Tract at Imperial Marsh Preser	Lee County	Lee County	LEEX	400.03
41	Savannah Lakes	Lee County East County Water Control District	Lee County	LEEX	355.75
42	Spirit of the Wild Wildlife Management Area	FL Fish and Wildlife Conservation Commission	Trustees of the Internal Improvement Trust Fund	HEND	7,647.82
43	Ten Thousand Islands National Wildlife Refug	US Dept. of the Interior, Fish and Wildlife Service	US Fish & Wildlife Service	COLL	0.51
44	West Marsh Preserve	Lee County	Lee County	LEEX	204.94
45	Wetlands Reserve Program Easement #120	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	COLL, HEND	1,263.85
46	Wetlands Reserve Program Easement #133	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	COLL	151.68
47	Wetlands Reserve Program Easement #169	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	COLL	217.05
48	Wetlands Reserve Program Easement #171	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	646.65
49	Wetlands Reserve Program Easement #193	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	9,045.68
50	Wetlands Reserve Program Easement #198	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	HEND	0.80
51	Wetlands Reserve Program Easement #199	US Dept. of Agriculture, Natural Resources Conservation Service	Private Individual(s)	COLL	42.31
52	Wild Turkey Strand Preserve	Lee County	Lee County	LEEX	3,053.45
53	Winchester Head	Collier County	Collier County	COLL	77.25
	Collier County FLU	-	-	-	341,388.59
-	Lee County FLU	-	-	-	23,520.27
-	Hendry County FLU	-	-	-	96,568.69
-	Flowway Stewardship Area	-	-	-	38, 658.81
-	Habitat Stewardship Area	-	-	-	45, 781.84
-	SFWMD Conservation Easements	-	-	-	17,694.23

MAP ID	NAME	MANAGING AGENCY	OWNER	COUNTY	TOTAL ACRES
-	Florida Rock FDEP Conservation Easement	-	-	-	800.17
-	Conservation Collier	-	-	-	3, 177.77

Note: Collier FLU was acquired from the Collier County GIS website http://gis.colliergov.net/website/downloadnet/download.aspx August 2016. Lee FLU was acquired from the Lee County Government website http://leegis.leegov.com/gisdata.htm August 2016. FSA and HSA areas were acquired from the Collier County Government website http://www.colliergov.net/index.aspx?page=2713 August 2016. Florida managed areas were acquired from the Florida Natural Areas Inventory website http://www.fnai.org/gisdata.cfm August 2016. SFWMD conservation easements were acquired from the SFWMD website http://my.sfwmd.gov/gisapps/sfwmdxwebdc/ August 2016. Glades and Hendry FLU was aquired from the SWFRPC website http:www.swfrpc.org/maps.htm#future%20land%use Conservation Collier land acquisition was acquired from the Collier County facilities Department August 2016.

Exhibit 45B. SFWMD Conservation Easements within 25 Mile Radius and Panther Focus Area

APPLICATION NUMBER	EASEMENT ID	ACRES
000301-11	000301-11-CE4	11.08
000301-11	000301-11-CE6	3.91
000301-11	000301-11-CE7	116.85
000301-23	000301-23-CE1	44.65
000301-23	000301-23-CE2	50.57
000329-16	000329-16-CE1	9.72
000329-16	000329-16-CE10	3.95
000329-16	000329-16-CE11	5.45
000329-16	000329-16-CE12	10.50
000329-16	000329-16-CE13	38.19
000329-16	000329-16-CE14	2.66
000329-16	000329-16-CE15	3.68
000329-16	000329-16-CE17	12.84
000329-16	000329-16-CE2	19.08
000329-16	000329-16-CE3	1.02
000329-16	000329-16-CE5	4.66
000329-16	000329-16-CE7	8.18
000331-9	000331-9-CE1	4.85
000331-9	000331-9-CE2	5.20
000331-9	000331-9-CE3	1.69
000531-20	000531-20-CE1	1.43
001027-4	001027-4-CE11	26.63
010110-5	010110-5-CE1	5.86
010110-5	010110-5-CE2	4.54
010427-5	010427-5-CE2	6.66
010427-5	010427-5-CE3	2.30
010427-5	010427-5-CE4	15.14
010625-1	010625-1-CE1	21.73
010917-5	010917-5-CE1	30.09
010917-5	010917-5-CE10	2.32
010917-5	010917-5-CE2	6.49
010917-5	010917-5-CE3	1.45
010917-5	010917-5-CE4	4.64
010917-5	010917-5-CE5	1.91
010917-5	010917-5-CE6	0.35
010917-5	010917-5-CE7	2.56
010917-5	010917-5-CE8	3.94
010917-5	010917-5-CE9	1.37
011121-7	011121-7-CE1	7.71
011121-7	011121-7-CE2	4.05
020118-14	020118-14-CE1	3.83
020215-6	020215-6-CE1	7.80
020215-6	020215-6-CE2	2.87
02038-L	02038-L-CE1	17.90
020410-6	020410-6-CE2	44.33
020410-6	020410-6-CE3	0.28
020423-7	020423-7-CE1	10.87
020508-6	020508-6-CE1	20.13
020523-16	020523-16-CE1	14.57
020523-16	020523-16-CE2	110.18
020523-16	020523-16-CE3	629.11
030326-8	030326-8-CE1	2.83

APPLICATION NUMBER	EASEMENT ID	ACRES
030326-8	030326-8-CE2	1.74
030326-8	030326-8-CE3	1.31
030328-10	030328-10-CE1	5.36
030502-5	030502-5-CE1	26.90
030505-23	030505-23-CE1	66.14
030505-23	030505-23-CE2	21.26
030617-5	030617-5-CE1	2.22
030617-5	030617-5-CE2	0.97
030617-5	030617-5-CE3	5.24
030618-9	030618-9-CE1	5.77
030618-9	030618-9-CE2	2.31
030708-17	030708-17-CE1	1015.09
030708-17	030708-17-CE2	223.59
030708-17	030708-17-CE3	26.27
030708-17	030708-17-CE4	0.10
030708-17	030708-17-CE5	0.79
031001-18	031001-18-CE1	163.52
031001-18	031001-18-CE10	3.96
031001-18	031001-18-CE11	3.56
031001-18	031001-18-CE12	3.05
031001-18	031001-18-CE13	1.49
031001-18	031001-18-CE2	86.54
031001-18	031001-18-CE3	55.82
031001-18	031001-18-CE4	46.44
031001-18	031001-18-CE5	10.18
031001-18	031001-18-CE6	7.49
031001-18	031001-18-CE7	5.86
031001-18	031001-18-CE8	5.12
031001-18	031001-18-CE9	4.51
031010-6	031010-6-CE1	0.30
031010-6	031010-6-CE2	20.38
031021-13	031021-13-CE1	5.80
031031-27	031031-27-CE1	15.22
031209-16	031209-16-CE1	0.60
040130-20	040130-20-CE1	1.43
040130-20	040130-20-CE2	0.36
040130-20	040130-20-CE3	34.57
040326-28	040326-28-CE1	2.08
040326-28	040326-28-CE2	2.85
040326-28	040326-28-CE3	12.71
040326-28	040326-28-CE4	1.32
040326-28	040326-28-CE5	1.43
040326-28	040326-28-CE6	15.51
040326-28	040326-28-CE7	2.41
040326-28	040326-28-CE8	2.36
040326-28	040326-28-CE9	2.36
040803-19	040803-19-CE1	17.73
040803-19	040803-19-CE10	10.65
040803-19	040803-19-CE2	22.87
040803-19	040803-19-CE3	26.02
040803-19	040803-19-CE4	5.97
040803-19	040803-19-CE5	115.83
040803-19	040803-19-CE6	25.02
040803-19	040803-19-CE7	4.58

APPLICATION NUMBER	EASEMENT ID	ACRES
040803-19	040803-19-CE8	0.53
040803-19	040803-19-CE9	1.09
040804-18	040804-18-CE2	2.89
040804-18	040804-18-CE3	0.81
040804-18	040804-18-CE4	2.21
040804-18	040804-18-CE5	0.11
040820-19	040820-19-CE1	8.06
040820-19	040820-19-CE10	1.39
040820-19	040820-19-CE11	85.28
040820-19	040820-19-CE12	49.13
040820-19	040820-19-CE13	3.57
040820-19	040820-19-CE14	2.06
040820-19	040820-19-CE15	4.30
040820-19	040820-19-CE2	2.27
040820-19	040820-19-CE21	5.08
040820-19	040820-19-CE22	2.78
040820-19	040820-19-CE3	1.12
040820-19	040820-19-CE4	8.35
040820-19	040820-19-CE5	91.91
040820-19	040820-19-CE6	26.09
040820-19	040820-19-CE7	28.08
040820-19	040820-19-CE8	26.16
040820-19	040820-19-CE9	2.06
040823-13	040823-13-CE1	48.61
040823-13	040823-13-CE2	1.61
040823-13	040823-13-CE3	2.09
041118-15	041118-15-CE1	0.74
050124-10	050124-10-CE1	23.93
050124-10	050124-10-CE10	0.16
050124-10	050124-10-CE2	11.86
050124-10	050124-10-CE3	30.35
050124-10	050124-10-CE4	6.82
050124-10	050124-10-CE5	3.70
050124-10	050124-10-CE6	9.38
050124-10	050124-10-CE7	0.74
050124-10	050124-10-CE8	1.08
050208-14	050208-14-CE1	8.29
050208-14	050208-14-CE2	1.85
050208-14	050208-14-CE3	0.21
050208-14	050208-14-CE4	39.12
050208-14	050208-14-CE5	2.26
050208-14	050208-14-CE6	0.25
050208-14	050208-14-CE7	0.75
050225-38	050225-38-CE1	6.19
050705-24	050705-24-CE1	7.31
050706-20	050706-20-CE1	13.06
050706-20	050706-20-CE2	0.70
050706-20	050706-20-CE3	16.17
051031-17	051031-17-CE1	7.74
051118-16	051118-16-CE1	96.53
06036-C	06036-C-CE1	13.31
06036-C	06036-C-CE2	7.61
06036-C	06036-C-CE3	1.92
06036-C	06036-C-CE4	7.25

APPLICATION NUMBER	EASEMENT ID	ACRES
06036-C	06036-C-CE5	3.58
06036-C	06036-C-CE6	2.39
060512-18	060512-18-CE1	15.76
060606-2	060606-2-CE1	11.83
060606-2	060606-2-CE2	3.85
060606-2	060606-2-CE3	0.52
060609-6	060609-6-CE1	18.38
060912-3	060912-3-CE1	29.59
060912-3	060912-3-CE2	12.18
060912-3	060912-3-CE3	6.28
061222-4	061222-4-CE1	4.88
061222-4	061222-4-CE2	7.31
061222-4	061222-4-CE3	13.08
070507-23	070507-23-CE1	25.09
070507-23	070507-23-CE2	20.68
070507-23	070507-23-CE3	7.85
070508-27	070508-27-CE1	2.86
070830-18	070830-18-CE1	619.69
080602-11	080602-11-CE2	0.11
080602-11	080602-11-CE4	0.00
080602-11	080602-11-CE5	0.00
080602-11	080602-11-CE6	0.00
080604-8	080604-8-CE1	1.28
080827-7	080827-7-CE1	9.09
081022-16	081022-16-CE1	22.96
081022-16	081022-16-CE2	37.12
081022-16	081022-16-CE3	17.97
090204-11	090204-11-CE2	1.60
090421-10	090421-10-CE1	0.51
090626-14	090626-14-CE1	2.91
09111-B	09111-B-CE8	62.01
100423-17	100423-17-CE1	151.69
100423-17	100423-17-CE2	325.89
100426-16	100426-16-CE1	19.52
100521-23	100521-23-CE1	2.36
100521-23	100521-23-CE2	15.52
100521-23	100521-23-CE3	1.43
100521-23	100521-23-CE4	2.42
100521-23	100521-23-CE5	0.42
100521-23	100521-23-CE6	1.32
100521-23	100521-23-CE7	2.85
100521-23	100521-23-CE8	12.71
100521-23	100521-23-CE9	2.08
100604-10	100604-10-CE3	2.91
100809-1	100809-1-CE2	5.07
101029-5	101029-5-CE1	2.20
101105-7	101105-7-CE1	29.22
101105-7	101105-7-CE2	311.64
101112-8	101112-8-CE1	0.78
101112-8	101112-8-CE2	0.73
101112-8	101112-8-CE3	3.40
101217-5	101217-5-CE2	160.00
101217-5	101217-5-CE3	121.75
101217-5	101217-5-CE4	4.90

APPLICATION NUMBER	EASEMENT ID	ACRES
101217-5	101217-5-CE5	14.19
101217-5	101217-5-CE6	5.44
101217-5	101217-5-CE7	3.75
110526-10	110526-10-CE1	15.73
110526-10	110526-10-CE2	1.44
110526-10	110526-10-CE3	0.08
110526-10	110526-10-CE4	8.39
110608-7	110608-7-CE1	12.08
110908-7	110908-7-CE1	1.54
110908-7	110908-7-CE2	17.21
110908-7	110908-7-CE3	10.40
110908-7	110908-7-CE4	17.24
111118-9	111118-9-CE1	36.36
111118-9	111118-9-CE2	36.36
111228-11	111228-11-CE1	157.38
111228-11	111228-11-CE2	4.70
111228-11	111228-11-CE3	233.70
120113-5	120113-5-CE1	17.31
120113-5	120113-5-CE10	0.77
120113-5	120113-5-CE11	0.03
120113-5	120113-5-CE12	0.07
120113-5	120113-5-CE13	0.03
120113-5	120113-5-CE2	4.54
120113-5	120113-5-CE5	0.73
120113-5	120113-5-CE6	0.38
120113-5	120113-5-CE7	0.46
120113-5	120113-5-CE8	0.16
120113-5	120113-5-CE9	1.01
120425-11	120425-11-CE1	9.91
120425-8	120425-8-CE1	896.99
120425-8	120425-8-CE2	137.68
120425-8	120425-8-CE3	11.40
120425-8	120425-8-CE4	3.78
120425-8	120425-8-CE5	16.25
120425-8	120425-8-CE6	12.17
120828-5	120828-5-CE1	37.81
120828-5	120828-5-CE4	37.81
121009-11		225.27
121009-11		101.60
121009-11		56.81
121009-11		46.12
121009-11		56.81
121009-11		10.77
121009-11		148.44
121009-11		694.23
121009-11		160.97
121009-11		32.20
121127-3	121127-3-CE1	10.77
121212-13	121212-13-CE1	9.02
130205-6	130205-6-CE1	896.99
130205-6	130205-6-CE2	137.68
130205-6	130205-6-CE3	11.40
130205-6	130205-6-CE4	3.78
130205-6	130205-6-CE5	16.25

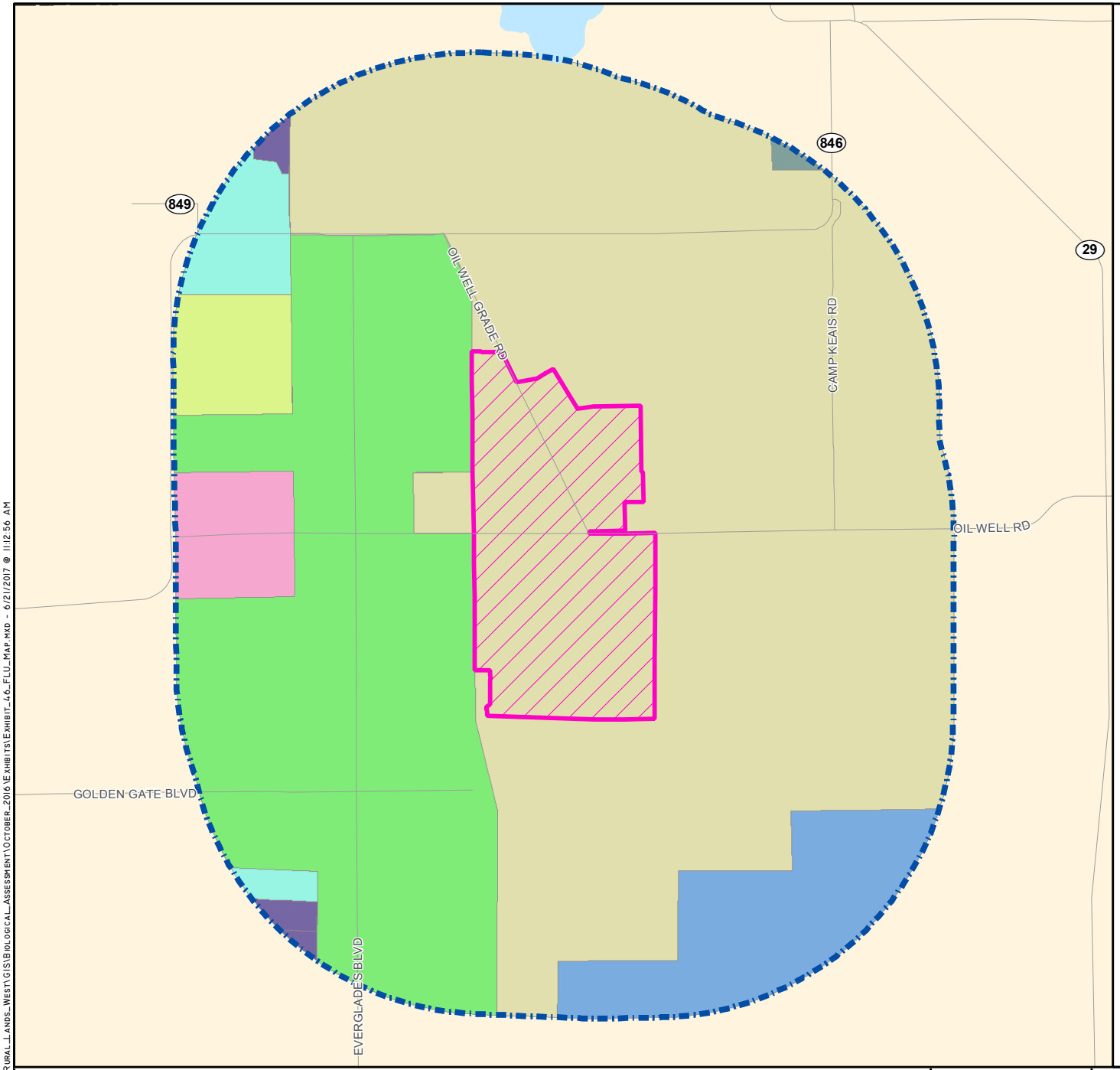
APPLICATION NUMBER	EASEMENT ID	ACRES
130205-6	130205-6-CE6	12.17
140124-13	140124-13-CE1	3.59
140327-4	140327-4-CE1	31.87
140516-10	140516-10-CE1	343.62
140516-10	140516-10-CE10	322.54
140516-10	140516-10-CE11	237.00
140516-10	140516-10-CE12	25.28
140516-10	140516-10-CE13	10.63
140516-10	140516-10-CE14	6.19
140516-10	140516-10-CE2	111.63
140516-10	140516-10-CE3	1.82
140516-10	140516-10-CE4	2.13
140516-10	140516-10-CE5	0.69
140516-10	140516-10-CE7	11.19
140516-10	140516-10-CE8	38.55
140516-10	140516-10-CE9	136.12
140718-10	140718-10-CE1	41.69
140718-10	140718-10-CE2	41.32
140718-6	140718-6-CE1	41.69
140718-6	140718-6-CE2	41.32
140725-8	140725-8-CE1	3.58
140725-8	140725-8-CE2	12.44
140725-8	140725-8-CE3	34.05
140725-8	140725-8-CE4	2.00
140725-8	140725-8-CE5	104.91
140725-8	140725-8-CE6	5.06
140725-8	140725-8-CE7	0.17
140725-8	140725-8-CE8	0.54
141017-11	141017-11-CE1	57.64
141017-11	141017-11-CE10	2.30
141017-11	141017-11-CE11	7.11
141017-11	141017-11-CE12	2.45
141017-11	141017-11-CE13	0.58
141017-11	141017-11-CE14	1.62
141017-11	141017-11-CE15	1.56
141017-11	141017-11-CE16	0.32
141017-11	141017-11-CE17	0.46
141017-11	141017-11-CE18	1.14
141017-11	141017-11-CE19	0.69
141017-11	141017-11-CE2	7.25
141017-11	141017-11-CE20	1.27
141017-11	141017-11-CE21	2.08
141017-11	141017-11-CE22	4.26
141017-11	141017-11-CE23	1.98
141017-11	141017-11-CE3	0.83
141017-11	141017-11-CE4	46.69
141017-11	141017-11-CE5	9.42
141017-11	141017-11-CE6	2.37
141017-11	141017-11-CE7	0.76
141017-11	141017-11-CE8	4.11
141017-11	141017-11-CE9	3.61
150107-11	150107-11-CE1	99.89
150831-16	150831-16-CE1	31.87
150915-12	150915-12-CE1	99.89

APPLICATION NUMBER	EASEMENT ID	ACRES
150918-18	150918-18-CE1	17.31
150918-18	150918-18-CE10	1.01
150918-18	150918-18-CE11	4.54
150918-18	150918-18-CE2	0.16
150918-18	150918-18-CE3	0.07
150918-18	150918-18-CE4	0.03
150918-18	150918-18-CE5	0.73
150918-18	150918-18-CE6	0.03
150918-18	150918-18-CE7	0.77
150918-18	150918-18-CE8	0.46
150918-18	150918-18-CE9	0.38
150924-16	150924-16-CE6	3.47
151217-1	151217-1-CE1	1.98
890503-21	890503-21-CE1	0.09
890503-21	890503-21-CE2	28.45
900221-19	900221-19-CE4	0.22
900731-2	900731-2-CE1	26.87
900731-2	900731-2-CE2	24.21
900731-2	900731-2-CE3	17.48
900731-2	900731-2-CE4	62.98
920709-3	920709-3-CE1	35.38
921118-3	921118-3-CE1	5.09
921118-3	921118-3-CE2	10.39
930211-4	930211-4-CE1	30.06
930714-1-D	930714-1-D-CE1	1.43
930729-6	930729-6-CE1	17.96
931112-11	931112-11-CE1	2.40
940307-5	940307-5-CE1	22.53
940307-5	940307-5-CE2	17.25
940307-5	940307-5-CE3	25.23
940307-5	940307-5-CE4	21.98
940307-5	940307-5-CE5	0.67
940307-5	940307-5-CE7	0.40
940307-5	940307-5-CE8	28.36
940615-13	940615-13-CE1	4.15
940615-13	940615-13-CE2	18.01
940615-13	940615-13-CE3	1.12
940615-13	940615-13-CE4	9.36
941212-3	941212-3-CE1	4.36
950210-5	950210-5-CE4	56.24
951114-5	951114-5-CE1	10.41
951122-7	951122-7-CE2	43.14
951122-7	951122-7-CE3	65.50
951122-7	951122-7-CE4	48.51
951211-6	951211-6-CE1	63.00
951211-6	951211-6-CE2	17.46
951211-6	951211-6-CE3	24.21
951211-6	951211-6-CE4	26.87
960304-3	960304-3-CE2	0.64
960304-4	960304-4-CE2	9.09
960516-6	960516-6-CE1	5.81
960516-6	960516-6-CE2	3.29
960516-6	960516-6-CE3	20.12
960516-6	960516-6-CE4	7.36

APPLICATION NUMBER	EASEMENT ID	ACRES
960516-6	960516-6-CE5	10.17
960516-6	960516-6-CE6	2.19
960516-6	960516-6-CE7	1.21
960710-1	960710-1-CE1	56.31
960718-16	960718-16-CE1	76.79
960718-16	960718-16-CE2	5.04
960718-16	960718-16-CE3	5.03
960718-16	960718-16-CE4	77.49
961121-3	961121-3-CE1	51.44
961121-3	961121-3-CE2	16.45
970519-17	970519-17-CE1	9.71
971124-9	971124-9-CE1	1.29
971211-13	971211-13-CE1	201.03
980629-8	980629-8-CE1	1.56
980713-8	980713-8-CE1	7.99
980727-6	980727-6-CE2	303.82
980821-2	980821-2-CE1	173.78
980821-2	980821-2-CE8	3.46
981021-10	981021-10-CE1	58.81
981021-10	981021-10-CE2	209.65
981021-10	981021-10-CE3	253.20
981021-10	981021-10-CE4	163.88
981021-10	981021-10-CE5	757.29
981029-8	981029-8-CE10	2.92
981029-8	981029-8-CE11	6.37
981029-8	981029-8-CE12	7.12
981029-8	981029-8-CE13	0.08
981029-8	981029-8-CE14	6.47
981029-8	981029-8-CE15	0.08
981029-8	981029-8-CE7	22.48
981029-8	981029-8-CE8	0.23
981029-8	981029-8-CE9	0.03
990111-11	990111-11-CE1	47.04
990308-7	990308-7-CE2	1274.96
990401-8	990401-8-CE1	33.84
990401-8	990401-8-CE2	40.77
990413-9	990413-9-CE1	31.56
990413-9	990413-9-CE2	12.90
990413-9	990413-9-CE3	15.11
990413-9	990413-9-CE4	12.41
990413-9	990413-9-CE5	16.03
991004-7	991004-7-CE2	24.52
991004-7	991004-7-CE5	0.68
991004-7	991004-7-CE7	12.32
991004-7	991004-7-CE8	4.04
991101-14	991101-14-CE2	28.66

EXHIBIT 46

LAND USE DESIGNATIONS WITHIN PROJECT VICINITY



LEGEND

- Rural Lands West
- 5 Mile Radius

Collier FLU

- Agricultural / Rural Designation
- Agricultural / Rural Mixed Use District/RLSA
- Conservation Designation
- Corkscrew Island Neighborhood Commercial Subdist
- Estates Desingation
- RF-Neutral
- RF-Receiving
- RF-Sending
- Rural Industrial District
- Rural Settlement Area District
- Urban Residential Subdistrict

N
W E
S

0 1 2 3 4 5
Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

COLLIER FLU WAS ACQUIRED FROM THE COLLIER COUNTY GIS WEBSITE HTTP://GIS.COLLIERGOV.NET/WEBSITE/DOWNLOADNET/DOWNLOAD.ASPX JULY 2016.

J:\2005\05cen\481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016\Exhibits\Exhibit_46_FLU_Map.mxd - 6/21/2017 @ 11:12:56 AM

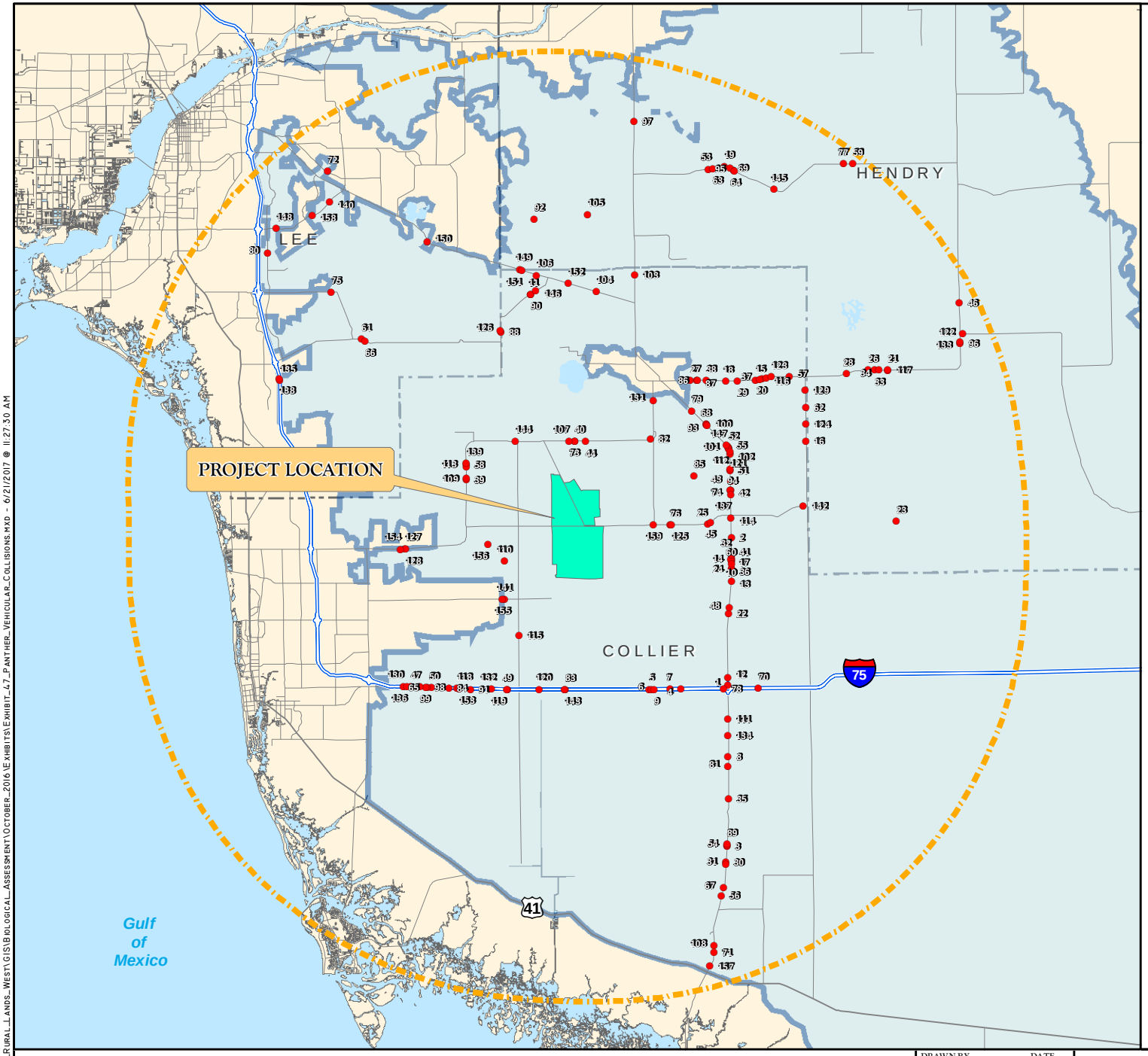
EXHIBIT 46. LAND USE DESIGNATIONS WITHIN PROJECT VICINITY
RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

EXHIBIT 47

PANTHER VEHICULAR COLLISIONS WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA



LEGEND

- Rural Lands West
- 25 Mile Radius
- Panther Focus Area
- Panther Vehicular Collisions

N
W
E
S

0 4 8 12
Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

PANTHER VEHICULAR COLLISIONS WERE ACQUIRED FROM THE FWCC JULY 2016 AND ARE CURRENT TO JUNE 2016.

PANTHER FOCUS AREA WAS ACQUIRED FROM THE USFWS FTP SITE MARCH 2007.

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EXHIBIT 47. PANTHER VEHICULAR COLLISIONS WITHIN 25 MILE RADIUS AND PANTHER FOCUS AREA RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

Exhibit 47A. Panther Vehicular Collisions within 25 Mile Radius and Panther Focus Area

MAP ID	DATE	PANTHER NO.	OUTCOME	GENDER	AGE	UTM EAST	UTM NORTH
1	12/23/1979	UCFP04-(G80-4)	DEATH	F	1.5 to 2.5	465507	2893149
2	2/7/1980	UCFP05-(G80-15)	DEATH	M	1.5 to 2.5	465823	2907202
3	4/19/1981	UCFP06-(G81-19)	DEATH	F	2 to 3	465423	2877804
4	12/14/1983	FP01	DEATH	M	12 to 14	461019	2892796
5	11/12/1984	UCFP12-(G84-26)	DEATH	F	8 to 10	458039	2892767
6	1/8/1985	UCFP13-(G85-BNZ)	DEATH	F	1.5 to 2	458233	2892755
7	4/18/1985	FP04	DEATH	M	12+	460020	2892787
8	10/26/1985	FP07	DEATH	M	10	465540	2886357
9	11/15/1986	UCFP15	DEATH	F	4 to 5	458521	2892736
10	12/14/1987	FP13	DEATH	M	6 to 8	465846	2904968
11	1/25/1989	UCFP18	DEATH	M	3	446776	2930336
12	11/26/1990	FP37	DEATH	M	4 to 5	465498	2893906
13	2/4/1991	UCFP20	DEATH	F	9 mos.	465865	2903058
14	11/9/1992	UCFP21	DEATH	F	7 mos.	465838	2905164
15	12/6/1993	FP50	DEATH	M	2.5	468132	2922159
16	2/28/1994	UCFP23	DEATH	M	8 mos.	472936	2916364
17	3/3/1994	FP31	DEATH	F	12 to 14	465783	2905097
18	1/14/1995	FP52	DEATH	F	3.3	465323	2922095
19	4/24/1996	UCFP29	DEATH	M	3 to 5	465184	2942494
20	7/13/1997	UCFP31	DEATH	U	UNK	468752	2922323
21	6/13/1998	UCFP25	DEATH	F	2	480724	2923118
22	7/17/1998	FP51	DEATH	M	9	465563	2899931
23	7/8/1999	UCFP27	DEATH	F	2	481523	2908764
24	1/15/2000	FP63	DEATH	M	5	465882	2904204
25	2/28/2000	K76	DEATH	M	3 mos.	463602	2908495
26	3/23/2000	UCFP34	DEATH	M	1.5 to 2	478823	2923096
27	6/23/2000	UCFP35	DEATH	M	1.5 to 2	461924	2922139
28	8/13/2000	UCFP36	DEATH	F	1.7	476749	2922759
29	12/29/2000	UCFP37	DEATH	F	5	466429	2922124
30	5/7/2001	UCFP39	DEATH	F	10 mos.	465311	2876343
31	5/7/2001	UCFP40	DEATH	M	10 mos.	465304	2876102
32	5/22/2001	UCFP41	DEATH	M	2 to 3	465838	2905584
33	6/14/2001	UCFP42	DEATH	F	3 to 4	479459	2923106
34	8/17/2001	UCFP43	DEATH	M	2 to 3	479859	2923112
35	4/10/2002	UCFP46	DEATH	M	6 mos.	465549	2882397
36	7/1/2002	FP98	DEATH	M	4 to 5	465866	2904227
37	11/10/2002	UCFP48	DEATH	F	8 to 9 mos	468536	2922250
38	11/25/2002	UCFP49 (K98)	DEATH	F	19 mos	463459	2922165

MAP ID	DATE	PANTHER NO.	OUTCOME	GENDER	AGE	UTM EAST	UTM NORTH
39	11/28/2002	FP99	DEATH	M	33 mos	440632	2912671
40	1/26/2003	UCFP50 (K33)	DEATH	M	3 to 4	450950	2916386
41	02/20/2003	FP106	DEATH	F	3	465838	2905517
42	5/25/2003	UCFP53	DEATH	F	2 to 3	465768	2911711
43	6/3/2003	UCFP54	DEATH	M	8 to 10 mos	465757	2912513
44	6/30/2003	UCFP58	DEATH	F	~1	451966	2916362
45	11/2/2003	UCFP59	DEATH	M	3 to 4 mos.	463862	2908608
46	12/25/2003	UCFP61	DEATH	F	~2 to 3	487522	2929504
47	2/26/2004	UCFP63	DEATH	M	~3.5	435304	2892991
48	4/6/2004	UCFP65	DEATH	M	~2	465618	2900494
49	6/27/2004	UCFP66	DEATH	M	~3	444566	2892721
50	8/17/2004	K94	DEATH	M	3.3	437335	2892925
51	10/25/2004	UCFP69	DEATH	F	2	465720	2913557
52	12/1/2004	UCFP70	DEATH	F	1	465552	2915727
53	12/6/2004	K128	DEATH	M	2.5	463683	2942254
54	2/25/2005	UCFP72	DEATH	M	2	465414	2877883
55	6/19/2005	UCFP75	DEATH	M	2	465567	2915710
56	12/2/2005	K49	DEATH	F	7.8	464904	2873124
57	1/25/2006	UCFP78	DEATH	M	9 mos.	471348	2922532
58	1/26/2006	UCFP79	DEATH	F	2	440615	2914139
59	6/5/2006	UCFP85	DEATH	M	3 to 4 .	477416	2942763
60	7/6/2006	UCFP86	DEATH	U	unknown	465849	2904680
61	8/24/2006	UCFP87	DEATH	M	3	430633	2926086
62	12/12/2006	UCFP89	DEATH	M	3 to 5	472931	2919548
63	1/24/2007	UCFP90	DEATH	F	4 to 6 mos.	464073	2942326
64	3/9/2007	UCFP91	DEATH	M	5 mos.	466030	2942127
65	4/3/2007	UCFP94	DEATH	M	2 to 3	436950	2892941
66	5/14/2007	UCFP97	DEATH	F	4 to 5	431034	2925884
67	6/11/2007	UCFP98	DEATH	M	20 to 24 mos.	465116	2873894
68	6/23/2007	UCFP100	DEATH	M	2 to 3	463466	2917969
69	6/23/2007	K199	DEATH	F	20 mos.	465720	2942363
70	9/12/2007	UCFP102	DEATH	M	2	468382	2892857
71	4/12/2008	UCFP104	DEATH	F	1 to 2	464169	2867731
72	5/4/2008	UCFP106	DEATH	M	2	427411	2942010
73	7/28/2008	UCFP108	DEATH	F	3 to 4	450941	2916386
74	10/24/2008	UCFP111	DEATH	F	6 to 8 mos.	465744	2911732
75	11/26/2008	UCFP113	DEATH	M	4 to 5	427752	2930530
76	11/28/2008	UCFP114	DEATH	F	4	460001	2908422
77	1/11/2009	UCFP115	DEATH	M	4	476526	2942752
78	1/17/2009	K253	DEATH	M	18 mos.	465085	2892821

MAP ID	DATE	PANTHER NO.	OUTCOME	GENDER	AGE	UTM EAST	UTM NORTH
79	1/20/2009	UCFP116	DEATH	F	4 to 5	462104	2919224
80	3/25/2009	UCFP118	DEATH	M	1.5	421750	2934266
81	5/14/2009	UCFP121	DEATH	M	2	465517	2885439
82	5/25/2009	UCFP122	DEATH	M	2	458157	2916617
83	8/5/2009	UCFP124	DEATH	M	1.5	450073	2892715
84	9/6/2009	UCFP125	DEATH	F	2	438968	2892868
85	9/15/2009	UCFP126	DEATH	M	2	462259	2913067
86	10/19/2009	UCFP129	DEATH	M	3 to 4 mos.	462585	2922158
87	10/21/2009	UCFP130	DEATH	F	3 to 4	462611	2922165
88	12/23/2009	UCFP134	DEATH	M	3	443900	2926770
89	12/29/2009	UCFP135	DEATH	F	4	465433	2878029
90	3/12/2010	UCFP139	DEATH	F	3	446749	2930324
91	3/16/2010	FP174	DEATH	M	4 to 5	441018	2892768
92	4/29/2010	UCFP141	DEATH	F	6 mos.	447119	2937469
93	6/24/2010	UCFP145	DEATH	M	16 to 18 mos.	463430	2917905
94	8/3/2010	UCFP146	DEATH	F	3 to 4	465735	2913730
95	11/17/2010	FP176	DEATH	M	4 to 5	466107	2942070
96	12/19/2010	UCFP150	DEATH	M	8 to 9 mos.	487593	2925648
97	1/7/2011	K284	DEATH	M	1.5	456583	2946741
98	1/13/2011	UCFP152	DEATH	F	3	436807	2892929
99	1/21/2011	UCFP153	DEATH	M	8 mos.	436221	2892997
100	3/25/2011	UCFP159	DEATH	F	4 to 5	463534	2917803
101	7/11/2011	UCFP162	DEATH	M	1 to 1.5	465480	2915822
102	9/19/2011	UCFP164	DEATH	F	3 to 4	465708	2915138
103	10/30/2011	UCFP165	DEATH	F	3 to 4	456647	2932165
104	1/2/2012	UCFP166	DEATH	M	4 to 5	453015	2930599
105	4/7/2012	UCFP169	DEATH	M	9 wks	452153	2937920
106	5/26/2012	UCFP172	DEATH	M	4 mo.	447325	2932145
107	6/19/2012	UCFP173	DEATH	F	7 mo.	450396	2916383
108	10/8/2012	UCFP175	DEATH	M	12 to 14 mo.	464224	2868388
109	10/9/2012	UCFP176	DEATH	F	3 mo	440615	2912846
110	11/4/2012	UCFP177	DEATH	F	4 mo.	444239	2904966
111	11/14/2012	UCFP178	DEATH	F	1	465514	2889930
112	11/19/2012	UCFP179	DEATH	M	3	465601	2915635
113	11/26/2012	UCFP181	DEATH	F	2 to 3 mos.	440604	2913945
114	1/3/2013	UCFP185	DEATH	M	10 mos.	465804	2909046
115	2/20/2013	UCFP189	DEATH	F	5 to 6 mo.	445637	2897918
116	4/28/2013	UCFP192	DEATH	F	10	469133	2922379
117	7/8/2013	UCFP195	DEATH	M	2 to 3	480715	2923136
118	7/15/2013	UCFP196	DEATH	M	2 to 3	439756	2892872

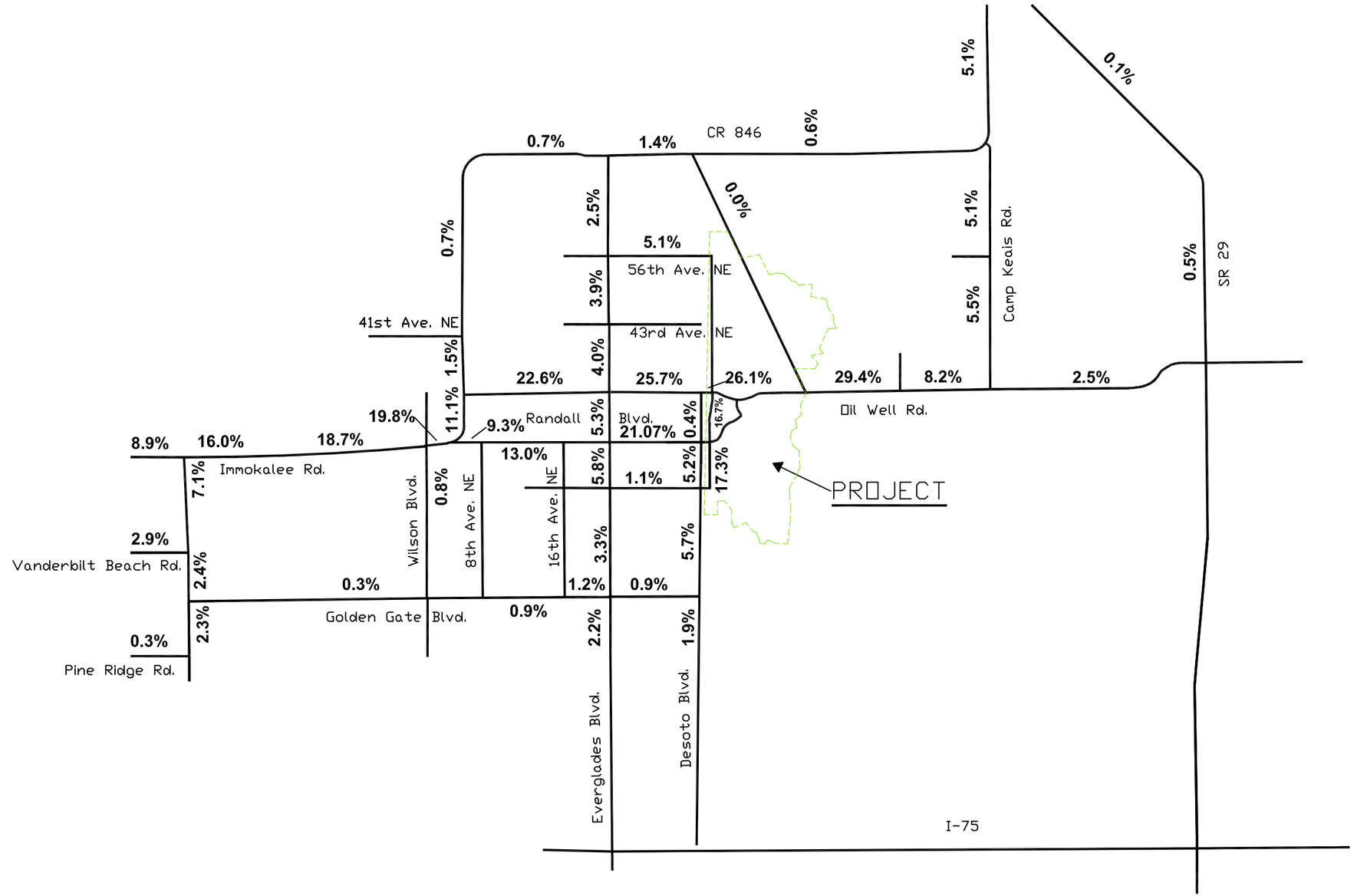
MAP ID	DATE	PANTHER NO.	OUTCOME	GENDER	AGE	UTM EAST	UTM NORTH
119	8/19/2013	UCFP198	DEATH	F	3 yrs	444510	2892765
120	12/2/2013	UCFP201	DEATH	M	1 yr	447599	2892764
121	1/22/2014	UCFP204	DEATH	M	1.5	465702	2915370
122	3/8/2014	UCFP207	DEATH	M	1.5 yrs	487856	2926537
123	4/8/2014	UCFP210	DEATH	M	2-3	469644	2922475
124	4/25/2014	FP163	DEATH	M	7yr 2mo.	472937	2917981
125	5/16/2014	UCFP214	DEATH	M	14 mo.	460119	2908418
126	6/25/2014	UCFP216	DEATH	F	1	443882	2926931
127	8/24/2014	UCFP218	DEATH	F	4 mo.	434792	2906157
128	8/24/2014	UCFP219	DEATH	U	4 mo.	434826	2906117
129	11/13/2014	UCFP223	DEATH	F	3-4 yrs	472874	2921198
130	1/16/2015	UCFP230	DEATH	F	1.5	434627	2893049
131	1/20/2015	UCFP231	DEATH	F	1.5	458394	2920241
132	1/25/2015	UCFP233	DEATH	M	5-6 yrs	443049	2892800
133	2/15/2015	UCFP236	DEATH	M	1	487588	2925793
134	2/25/2015	FP183	DEATH	M	9	465511	2888327
135	3/7/2015	K402	DEATH	M	1.5	422915	2922176
136	4/3/2015	UCFP239	DEATH	M	3-4	434965	2893008
137	4/13/2015	UCFP240	DEATH	F	1	465771	2911308
138	4/30/2015	UCFP241	DEATH	M	U	422857	2922300
139	7/5/2015	UCFP244	DEATH	M	1.5	440610	2914266
140	7/8/2015	UCFP245	DEATH	M	10-11 mo	427645	2939120
141	7/30/2015	UCFP248	DEATH	F	4-5 mo	444240	2901319
142	9/22/2015	UCFP249	DEATH	M	4 mo.	472684	2910202
143	10/23/2015	FP222	DEATH	F	10.5	449994	2892752
144	11/23/2015	UCFP254	DEATH	M	8-10 mos.	445326	2916359
145	12/8/2015	UCFP255	DEATH	F	1	469937	2940274
146	12/15/2015	UCFP256	DEATH	F	2.5	447258	2930661
147	12/21/2015	UCFP258	DEATH	M	1	465350	2915951
148	1/20/2016	UCFP262	DEATH	F	7-9 mo	422550	2936563
149	1/30/2016	UCFP264	DEATH	F	4	445693	2932704
150	2/12/2016	UCFP266	DEATH	F	1.5-2	436931	2935388
151	2/15/2016	UCFP267	DEATH	U	5-6 mo	445938	2932627
152	2/17/2016	UCFP268	DEATH	M	4	450318	2931355
153	4/1/2016	UCFP273	DEATH	U	1	439936	2892818
154	4/6/2016	UCFP275	DEATH	M	3	434362	2906112
155	4/10/2016	UCFP277	DEATH	M	5-6 mo	444053	2901324
156	4/15/2016	UCFP278	DEATH	M	16-18 mo	442711	2906561
157	5/3/2016	UCFP282	DEATH	M	2-3	463795	2866394
158	5/26/2016	K403	DEATH	F	4	426002	2937857

MAP ID	DATE	PANTHER NO.	OUTCOME	GENDER	AGE	UTM EAST	UTM NORTH
159	6/16/2016	UCFP284	DEATH	F	6 mo	458449	2908438

Note: Panther vehicular collisions were acquired from the FWCC per e-mail July 2016.

EXHIBIT 48

TRAFFIC ASSIGNMENT MAP



dpa	RURAL LANDS WEST	2038 DAILY PROJECT TRAFFIC ASSIGNMENT	15504/17A/0916 2

EXHIBIT 49

ESTIMATED ITE DAILY TRIPS FOR WITHOUT PROJECT CONDITION

RURAL LANDS WEST SRA

DAILY TRAFFIC ASSIGNMENT FOR 2027, 2034, AND 2040 WITHOUT SRA, WITH SENDING AREAS POPULATED

5-May-17

AUIR ID #	ROADWAY	FROM	TO	2027 WITHOUT RLW SRA (2)	2027 WITH 1/3 OF SSA UNITS (5)	2027 ESTIMATED SSA TRAFFIC (5) ON LINK	2034 WITHOUT RLW SRA (3)	2034 WITH 2/3 OF SSA UNITS (6)	2034 ESTIMATED SSA TRAFFIC (5) ON LINK	2040 WITHOUT RLW SRA (4)	2040 WITH 100% OF SSA UNITS (7)	2040 ESTIMATED SSA TRAFFIC (5) ON LINK
	18TH AVENUE NE	Everglades Blvd.	Desoto Blvd.	1,239	1,239	0	1,528	1,528	0	1,799	1,799	0
	18TH AVENUE NE	Desoto Blvd.	Big Cypress Pkwy.	1,239	1,239	0	1,528	1,528	0	1,799	1,799	0
	OIL WELL GRADE ROAD	Immokalee Rd.	56th Ave. NE	2,028	2,028	0	2,722	2,722	0	3,381	3,381	0
61.0	CAMP KEAIS ROAD	Ave Maria Entrance	Immokalee Rd.	9,189	9,339	150	11,474	11,780	306	13,438	13,894	456
61.0	CAMP KEAIS ROAD	Oil Well Rd.	Ave Maria Entrance	4,230	6,006	1,775	5,435	9,040	3,605	6,825	12,205	5,380
30.1	COLLIER BOULEVARD	Immokalee Rd.	Vanderbilt Beach Rd.	31,238	31,238	0	36,270	36,270	0	39,496	39,496	0
30.2	COLLIER BOULEVARD	Vanderbilt Beach Rd.	Golden Gate Blvd.	32,551	32,551	0	37,520	37,520	0	40,131	40,131	0
31.1	COLLIER BOULEVARD	Golden Gate Blvd.	Pine Ridge Rd.	50,538	50,538	0	57,356	57,356	0	62,825	62,825	0
31.2	COLLIER BOULEVARD	Pine Ridge Rd.	Green Blvd.	42,657	42,657	0	48,861	48,861	0	52,749	52,749	0
32.1	COLLIER BOULEVARD	Green Blvd.	Golden Gate Pkwy.	38,921	38,921	0	42,924	42,924	0	45,648	45,648	0
32.2	COLLIER BOULEVARD	Golden Gate Pkwy.	South	37,635	37,635	0	42,047	42,047	0	45,243	45,243	0
138.0	DESOTO BOULEVARD	Oil Well Rd.	Randall Blvd.	3,284	3,995	710	4,312	5,754	1,442	5,392	7,544	2,152
138.0	DESOTO BOULEVARD	Randall Blvd.	18th Ave. NE	5,070	5,248	178	6,787	7,147	360	8,372	8,910	538
138.0	DESOTO BOULEVARD	18th Ave. NE	Golden Gate Blvd.	4,310	4,310	0	5,715	5,715	0	6,947	6,947	0
137.0	DESOTO BOULEVARD	Golden Gate Blvd.	South	6,042	6,042	0	6,913	6,913	0	7,646	7,646	0
136.0	EVERGLADES BLVD.	Immokalee Rd.	56th Ave. NE	1,599	1,901	302	1,984	2,597	614	2,351	3,267	916
136.0	EVERGLADES BLVD.	56th Ave. NE	43rd Ave. NE	2,831	3,133	302	3,396	4,009	614	3,894	4,810	916
136.0	EVERGLADES BLVD.	43rd Ave. NE	Oil Well Rd.	11,154	11,509	355	12,562	13,283	721	13,972	15,048	1,076
135.0	EVERGLADES BLVD.	Oil Well Rd.	Randall Blvd.	9,681	10,036	355	10,637	11,358	721	11,685	12,761	1,076
135.0	EVERGLADES BLVD.	Randall Blvd.	18th Ave. NE	8,465	8,820	355	9,489	10,210	721	10,705	11,781	1,076
135.0	EVERGLADES BLVD.	18th Ave. NE	Golden Gate Blvd.	7,170	7,170	0	8,218	8,218	0	9,218	9,218	0
134.0	EVERGLADES BLVD.	Golden Gate Blvd.	South	17,749	17,749	0	20,924	20,924	0	23,482	23,482	0
17.0	GOLDEN GATE BOULEVARD	Collier Blvd.	23rd St. SW	31,104	31,104	0	35,304	35,304	0	38,040	38,040	0
17.0	GOLDEN GATE BOULEVARD	23rd St. SW	Wilson Blvd.	28,916	28,916	0	34,115	34,115	0	37,634	37,634	0
123.0	GOLDEN GATE BOULEVARD	Wilson Blvd.	16th St. SE	29,350	29,350	0	33,232	33,232	0	36,570	36,570	0
123.1	GOLDEN GATE BOULEVARD	16th St. SE	Everglades Blvd.	24,793	24,793	0	28,906	28,906	0	32,694	32,694	0
124.0	GOLDEN GATE BOULEVARD	Everglades Blvd.	Desoto Blvd.	8,416	8,416	0	9,941	9,941	0	11,369	11,369	0
42.2	IMMOKALEE ROAD (CR 846)	Livingston Rd.	I-75	65,378	65,378	0	70,587	70,587	0	73,496	73,496	0
43.1	IMMOKALEE ROAD (CR 846)	I-75	Logan Blvd.	59,118	59,118	0	63,323	63,323	0	66,936	66,936	0
43.2	IMMOKALEE ROAD (CR 846)	Logan Blvd.	Collier Blvd.	44,674	44,674	0	49,132	49,132	0	52,945	52,945	0
44.0	IMMOKALEE ROAD (CR 846)	Collier Blvd.	Heritage Bay Blvd.	55,199	55,909	710	61,853	63,294	1,442	66,843	68,995	2,152
44.0	IMMOKALEE ROAD (CR 846)	Heritage Bay Blvd.	Wilson Blvd.	51,195	51,905	710	58,814	60,256	1,442	65,223	67,375	2,152
45.0	IMMOKALEE ROAD (CR 846)	Wilson Blvd.	Randall Blvd.	52,904	53,969	1,065	60,601	62,764	2,163	67,043	70,271	3,228
45.0	IMMOKALEE ROAD (CR 846)	Randall Blvd.	Oil Well Rd.	36,619	37,684	1,065	43,762	45,924	2,163	50,288	53,516	3,228
46.0	IMMOKALEE ROAD (CR 846)	Oil Well Rd.	41st Ave. NE	17,304	17,482	178	21,531	21,891	360	24,506	25,044	538
46.0	IMMOKALEE ROAD (CR 846)	41st Ave. NE	Everglades Blvd.	4,860	5,566	705	5,844	7,276	1,432	6,688	8,825	2,137
46.0	IMMOKALEE ROAD (CR 846)	Everglades Blvd.	Oil Well Grade Rd.	5,903	6,910	1,007	7,204	9,249	2,046	8,375	11,428	3,053
46.0	IMMOKALEE ROAD (CR 846)	Oil Well Grade Rd.	Camp Keais Rd.	5,550	6,558	1,007	6,381	8,427	2,046	7,076	10,129	3,053
46.0	IMMOKALEE ROAD (CR 846)	Camp Keais Rd.	Carver St.	14,330	15,337	1,007	17,005	19,050	2,045	19,152	22,204	3,052
46.0	IMMOKALEE ROAD (CR 846)	Carver St.	SR 29	17,521	18,327	806	19,769	21,405	1,636	21,756	24,198	2,442
	CR 846 (EAST)	SR 29	Agri Blvd.	8,389	9,730	1,340	11,194	13,915	2,721	13,734	17,795	4,061
	CR 846 (EAST)	Agri Blvd.	East	8,389	8,782	392	11,194	11,990	797	13,734	14,923	1,189

AUIR ID #	ROADWAY	FROM	TO	2027 WITHOUT RLW SRA (2)	2027 WITH 1/3 OF SSA UNITS (5)	2027 ESTIMATED SSA TRAFFIC (5) ON LINK	2034 WITHOUT RLW SRA (3)	2034 WITH 2/3 OF SSA UNITS (6)	2034 ESTIMATED SSA TRAFFIC (5) ON LINK	2040 WITHOUT RLW SRA (4)	2040 WITH 100% OF SSA UNITS (7)	2040 ESTIMATED SSA TRAFFIC (5) ON LINK
47.0	LAKE TRAFFORD ROAD	Lake Trafford	SR 29	14,439	14,439	0	14,747	14,747	0	15,064	15,064	0
59.0	NEW MARKET ROAD (SR 29A)	SR 29 (North)	Indian River St.	11,040	11,040	0	12,660	12,660	0	14,781	14,781	0
59.0	NEW MARKET ROAD (SR 29A)	Indian River St.	Charlotte St.	11,731	11,731	0	13,556	13,556	0	15,750	15,750	0
59.0	NEW MARKET ROAD (SR 29A)	Charlotte St.	SR 29 (South)	7,486	7,486	0	9,393	9,393	0	11,304	11,304	0
58.0	NORTH 1ST STREET	SR 29	New Market Rd.	4,659	4,659	0	5,184	5,184	0	5,630	5,630	0
119.0	OIL WELL ROAD	Immokalee Rd.	Everglades Blvd.	25,107	26,705	1,598	28,509	31,753	3,244	31,250	36,092	4,842
120.0	OIL WELL ROAD	Everglades Blvd.	Desoto Blvd.	16,303	19,144	2,840	18,670	24,437	5,767	20,338	28,945	8,607
121.1	OIL WELL ROAD	Desoto Blvd.	Big Cypress Pkwy.	18,041	21,592	3,550	21,701	28,909	7,209	24,548	35,307	10,759
121.1	OIL WELL ROAD	Big Cypress Pkwy.	TC Entrances	18,041	21,592	3,550	21,701	28,909	7,209	24,548	35,307	10,759
121.1	OIL WELL ROAD	TC Entrances	Eastern N/S Rd.	17,976	21,526	3,550	21,810	29,018	7,209	24,883	35,642	10,759
121.2	OIL WELL ROAD	Eastern N/S Rd.	AMU Entrance Rd.	16,168	19,719	3,550	20,450	27,658	7,209	24,197	34,956	10,759
121.2	OIL WELL ROAD	AMU Entrance Rd.	Camp Keais Rd.	5,057	8,608	3,550	6,695	13,903	7,209	9,113	19,872	10,759
122.0	OIL WELL ROAD	Camp Keais Rd.	SR 29	1,026	2,090	1,065	1,631	3,793	2,161	2,812	6,038	3,226
125.0	PINE RIDGE ROAD	West	Collier Blvd.	27,093	27,093	0	29,244	29,244	0	31,399	31,399	0
132.0	RANDALL BOULEVARD	Immokalee Rd.	8th St. NE	18,559	18,914	355	19,613	20,333	721	19,408	20,484	1,076
132.0	RANDALL BOULEVARD	8th St. NE	Everglades Blvd.	5,277	5,632	355	6,396	7,117	721	7,952	9,028	1,076
133.0	RANDALL BOULEVARD	Everglades Blvd.	Desoto Blvd.	2,912	3,444	533	4,659	5,740	1,081	6,399	8,013	1,614
87.0	SR 29	Hendry County Line	SR 82	10,847	10,847	0	13,127	13,127	0	14,518	14,518	0
86.0	SR 29	SR 82	New Market Rd. (N)	27,640	27,640	0	30,538	30,538	0	33,084	33,084	0
85.0	SR 29 (N. 15th St.)	New Market Rd. (N)	Lake Trafford Rd.	13,490	13,490	0	14,337	14,337	0	14,577	14,577	0
85.0	SR 29 (N. 15th St.)	Lake Trafford Rd.	Immokalee Dr.	16,634	16,634	0	17,059	17,059	0	16,854	16,854	0
85.0	SR 29 (Main St.)	Immokalee Dr.	9th St.	21,505	21,505	0	22,455	22,455	0	22,747	22,747	0
84.0	SR 29 (Main St.)	9th St.	1st. St. (CR 846)	19,437	20,375	938	20,943	22,848	1,905	21,758	24,601	2,843
84.0	SR 29 (Main St.)	1st. St. (CR 846)	New Market Rd. (S)	16,248	17,186	938	18,743	20,648	1,905	20,132	22,975	2,843
83.0	SR 29 (Main St.)	New Market Rd. (S)	CR 846	16,372	17,712	1,340	18,927	21,648	2,721	20,818	24,879	4,061
83.0	SR 29	CR 846	Farm Workers Village	10,730	11,132	402	12,584	13,400	816	14,270	15,488	1,218
83.0	SR 29	Farm Workers Village	Oil Well Rd.	3,988	4,343	355	4,434	5,155	721	5,167	6,243	1,076
82.0	SR 29	Oil Well Rd.	I-75	4,075	4,607	533	4,613	5,694	1,081	5,523	7,137	1,614
88.0	SR 82	SR 29	Corkscrew Rd.	17,647	17,647	0	20,274	20,274	0	22,461	22,461	0
88.0	SR 82	Corkscrew Rd.	Hendry County Line	19,077	19,077	0	23,226	23,226	0	26,923	26,923	0
112.0	VANDERBILT BEACH ROAD	Logan Blvd.	Collier Blvd.	34,856	34,856	0	40,314	40,314	0	45,293	45,293	0
111.2	VANDERBILT BEACH ROAD	Livingston Rd.	Logan Blvd.	40,735	40,735	0	45,741	45,741	0	49,702	49,702	0
113.0	VANDERBILT BEACH ROAD	Collier Blvd.	Wilson Blvd.	23,647	23,647	0	27,932	27,932	0	34,214	34,214	0
113.1	VANDERBILT BEACH ROAD	Wilson Blvd.	8th St. NE	14,515	14,515	0	22,890	22,890	0	30,713	30,713	0
118.0	WILSON BOULEVARD	Immokalee Rd.	18th Ave. NE	7,081	7,259	178	8,272	8,632	360	9,114	9,652	538
118.0	WILSON BOULEVARD	18th Ave. NE	Vanderbilt Beach Rd. Extension	7,483	7,483	0	8,567	8,567	0	9,479	9,479	0
118.0	WILSON BOULEVARD	Vanderbilt Beach Rd. Extension	Golden Gate Blvd.	17,958	17,958	0	17,674	17,674	0	9,183	9,183	0

SOURCE:

(1) Collier County 2016 Count Station data from 2016_AUIR_Constant K Factor quarters 2,3,4,1.xls

(2) Rural Lands West SRA, Part 6, Segment Analysis, Exhibit 8 (Revised), Future 2027 Traffic Conditions Without Project

(3) Rural Lands West SRA, Part 6, Segment Analysis, Exhibit 9 (Revised), Future 2034 Traffic Conditions Without Project

(4) Rural Lands West SRA, Part 6, Segment Analysis, Exhibit 6 (Revised), Future 2040 Traffic Conditions Without Project

(5) Assumes 33% buildout of possible single-family units in the following Sending areas, as identified by Passarellsa & Associates.: SSA #14, #15, #16, #17, Non-SSA #1, and Non-SSA#2. Assignment of SSA traffic performed manually and may not represent all potential impacts.

(6) Assumes 67% buildout of possible single-family units in the following Sending areas, as identified by Passarellsa & Associates.: SSA #14, #15, #16, #17, Non-SSA #1, and Non-SSA#2. Assignment of SSA traffic performed manually and may not represent all potential impacts.

(7) Assumes 100% buildout of possible single-family units in the following Sending areas, as identified by Passarellsa & Associates.: SSA #14, #15, #16, #17, Non-SSA #1, and Non-SSA#2. Assignment of SSA traffic performed manually and may not represent all potential impacts.

EXHIBIT 50

WOOD STORK FORAGING HABITAT ANALYSIS

RURAL LANDS WEST
WOOD STORK FORAGING HABITAT ANALYSIS

June 2017

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INTRODUCTION

The following analysis examines wood stork (*Mycteria americana*) foraging habitat on the Rural Lands West (Project) site. The analysis estimates the potential loss of forage biomass available as forage to wood storks resulting from unavoidable wetland impacts due to proposed development on the Project site. The analysis also estimates the potential increase of biomass available as forage to wood storks that will occur as a result of the proposed wetland mitigation activities for the Project. The analysis follows the methodology as established by the U.S. Fish and Wildlife Service (USFWS), which is described in detail in the USFWS's May 28, 2010 Biological Opinion for South Fort Meade Mine (USFWS 2010).

The Project site totals 10,264.63± acres and is located in Sections 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36; Township 48 South; Range 28 East; Collier County (Figure 1). The Project is comprised of 4,490.36± acres of wetlands (4,475.95± acres of federally jurisdictional wetlands and 14.41± acres of isolated wetlands); 34.25± acres of open waters which include cattle ponds and agricultural ditches; and 5,740.02± acres of uplands including row crop fields and their associated upland-cut agriculture ditches.

The Project will impact 295.70± acres of the jurisdictional wetlands, of these impacts to jurisdictional wetlands, 4.00± were previously permitted and mitigated as wetland impacts under COE Permit No. SAJ-2008-02431 (IP-LBD). The Project will also impact 1.78± acres of isolated wetlands and 13.90± acres of waters. Proposed mitigation includes the establishment of 4,278.21± acres of on-site preserves that include the enhancement of 3,955.96± acres of wetlands (3,943.03± acres of jurisdictional wetlands and 12.93± acres of isolated wetlands), 25.59± acres of wetland restoration and the preservation of 20.12± waters.

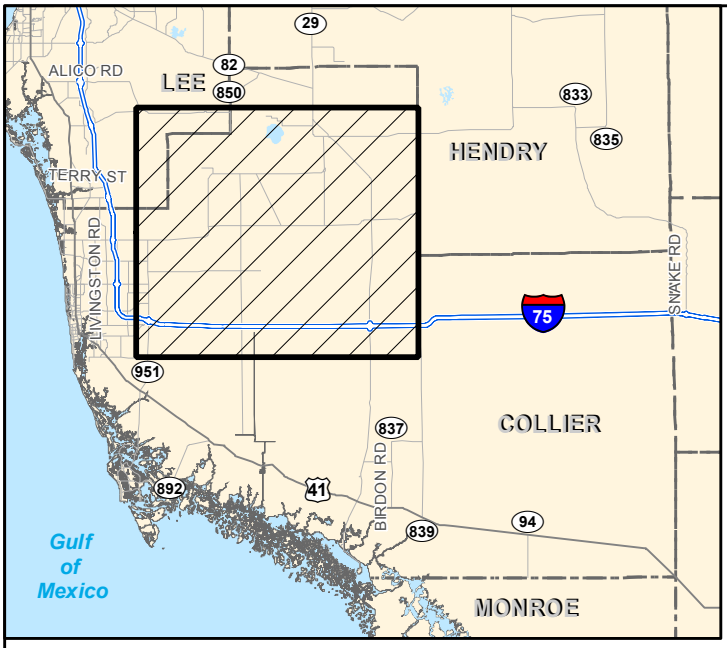
The Project is located within the 30 kilometer (18.6 mile) core foraging area for five wood stork colonies (Appendix A). The following summarizes the USFWS's wood stork foraging habitat analysis and applies it to the Project. The USFWS's May 28, 2010 Biological Opinion for South Fort Meade Mine (USFWS 2010) contains a detailed description of the analysis and supporting scientific literature and citations.

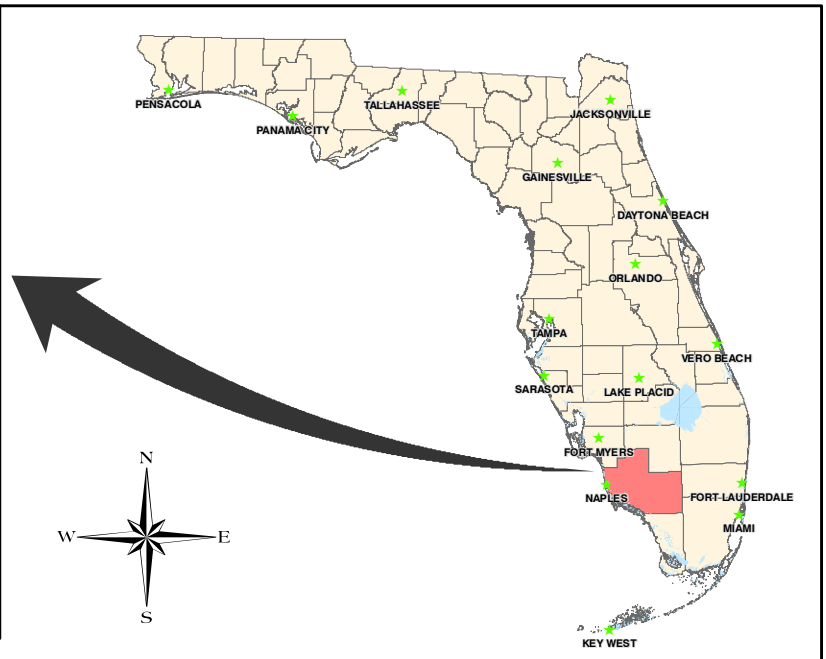
FORAGING SUITABILITY VALUE

Table 1 provides the foraging suitability values that have been developed by the USFWS (2010). The values are assigned to wetland habitats based on density and aerial coverage by exotic vegetation species within a wetland habitat.

Table 1. Wood Stork Foraging Suitability Values

Exotic Vegetation Coverage (Percent)	Foraging Suitability Value
0 – 25	100
25 – 50	64
50 – 75	37





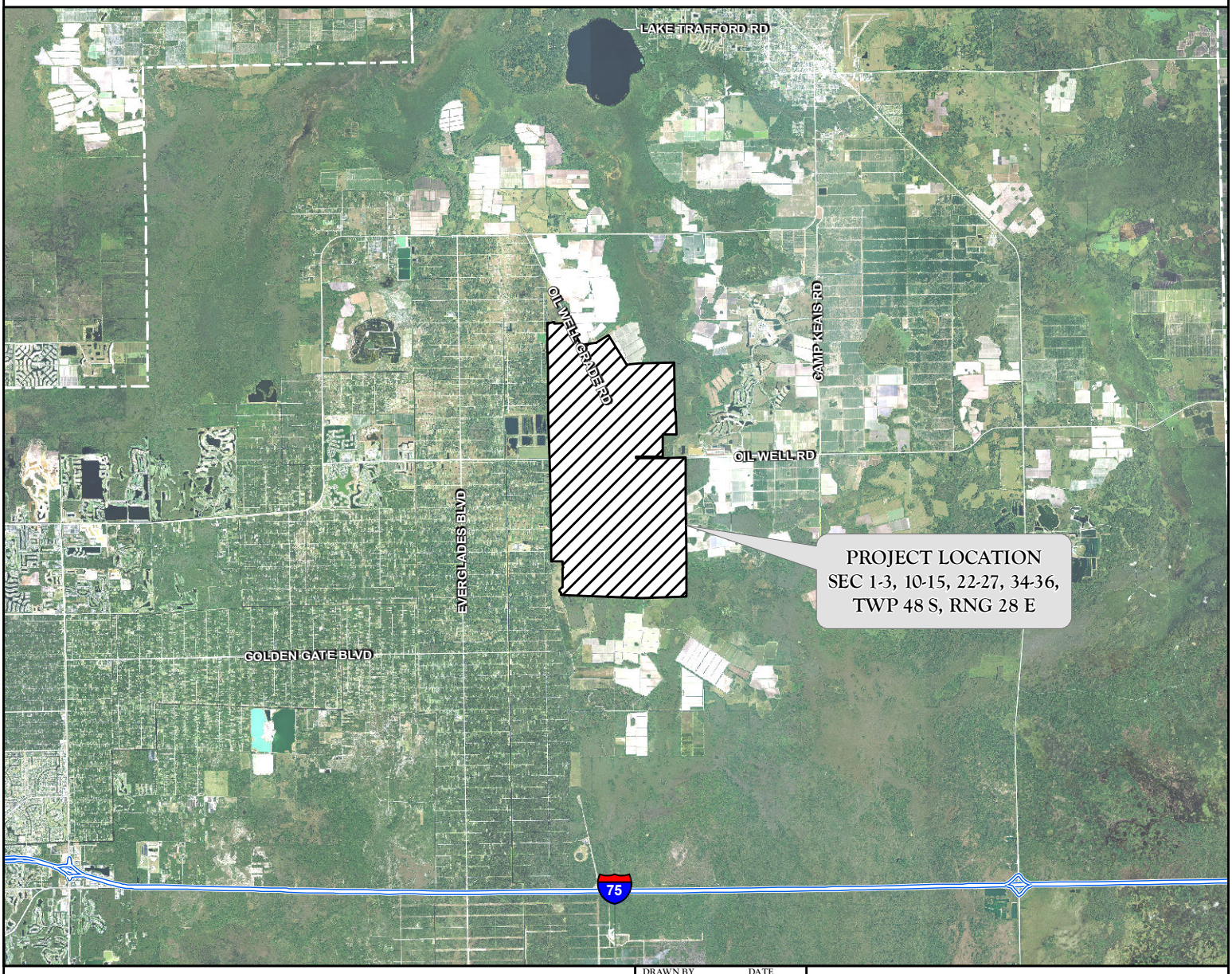


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FIGURE 1. PROJECT LOCATION MAP
RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

Table 1. (Continued)

Exotic Vegetation Coverage (Percent)	Foraging Suitability Value
75 – 90	3
90 – 100	0

WETLAND HYDROPERIOD CLASS

Table 2 summarizes the classes of wetland hydroperiods as defined by the USFWS (2010). The USFWS considers short hydroperiod wetlands as Classes 1 through 3. Water depths of 5 to 40 centimeters (2 to 16 inches) are considered as ideal for wood stork foraging.

Table 2. Wetland Hydroperiod Classes

Class	Length of Inundation (Days)
1	0 – 60
2	60 – 120
3	120 – 180
4	180 – 240
5	240 – 300
6	300 – 330
7	330 – 365

PREY BIOMASS BY HYDROPERIOD

Table 3 summarizes the potential fish biomass available as forage to wood storks within a wetland by wetland hydroperiod class as developed by the USFWS (2010).

Table 3. Fish Biomass Subject to Predation by Wood Storks

Hydroperiod Class	Fish Biomass Available (grams/m^2)	Crayfish Biomass Available (grams/m^2)	Total Prey Biomass Available (grams/m^2)
1	0.26	0.05	0.31
2	0.52	0.10	0.62
3	1.20	0.13	1.32
4	2.18	0.15	2.34
5	2.70	0.23	2.93
6	3.12	0.24	3.36
7	3.38	0.25	3.63

PERCENTAGE OF BIOMASS CONSUMED

In order to determine the actual prey biomass consumed by wood storks within a wetland, the USFWS's foraging assessment approach considered four factors which can cause a reduction in the amount of available prey biomass actually consumed by wood storks: prey size, prey availability by water level (hydroperiod), suitability of habitat for foraging (openness), and competition with other species. Based on their assessments of these four factors, the USFWS has determined that 32.5 percent of the available prey biomass within a wetland would actually be consumed by wood storks (USFWS 2010). Table 4 summarizes the amount of biomass consumed by wood storks by wetland hydroperiod class and is the basis of the USFWS's effects assessments.

Table 4. Actual Prey Biomass Consumed by Wood Storks

Hydroperiod Class	Actual Prey Biomass Consumed by Wood Storks (grams/m^2)
1	0.10
2	0.20
3	0.43
4	0.76
5	0.95
6	1.09
7	1.18

BIOMASS CALCULATION

The four parameters described above are combined to provide an estimate of biomass of wood stork prey within a wetland habitat. The following is an example of the calculation:

> A 50-acre wetland with 60 percent melaleuca (*Melaleuca quinquenervia*) coverage with a Class 5 hydroperiod would provide about 71,124 grams (71.1 kilograms) of prey potentially vulnerable to predation by wood storks. This number is reached as such:
>
> Fifty acres converts to 202,344 square meters; 60 percent melaleuca coverage equates to a 37 percent foraging potential (Table 1); and, based on a 32.5 percent consumption of available prey, a Class 5 wetland has 0.95 grams of prey per square meter that is actually consumed by wood storks (Table 4).
>
> (202,344 x 0.37 x 0.95 = 71,124)

RURAL LANDS WEST ANALYSIS

The USFWS's wood stork foraging analysis applied to the Project is summarized below.

Vegetation mapping for the Project site was originally conducted by Passarella & Associates, Inc. (PAI) using 2004 Collier County rectified aerial photographs. Wetland lines were flagged in the field and survey located. Groundtruthing to map the vegetative communities and land cover on the property was conducted between December 2006 and February 2007. The Florida Land Use, Cover and Forms Classification System (FLUCFCS) (Florida Department of Transportation 1999) was utilized to map the vegetation communities and land cover. Mapping was based on Level III FLUCFCS with Level IV used to denote hydrologic conditions and disturbance. "E" codes were used to show levels of exotic invasion (i.e., Brazilian pepper (*Schinus terebinthifolius*) and melaleuca (*Melaleuca quinquenervia*)).

Groundtruthing to update the FLUCFCS map for Rural Lands West was conducted by PAI in July 2014 using 2014 Collier County aerial photographs. In August 2015, further groundtruthing was conducted using 2015 Collier County aerial photographs. AutoCAD Map 3D 2015 software was then used to determine the acreage of each mapping area. The resulting FLUCFCS map with acreages is included as Appendix B. The wetlands map for the Project is provided as Appendix C.

The foraging suitability values developed by the USFWS are based on density and aerial coverage by exotic vegetation species within a wetland habitat. The USFWS foraging suitability values by exotic coverage is shown in Table 1. Exotic coverage mapping for the Project was based on 25 percent increments using "E" codes (i.e., E1 = 0-24% Exotics, E2 = 25-49% Exotics, E3 = 50-75% Exotics, and E4 = 76-100% Exotics). Since the USFWS suitability scores are based on different percentage increments, "E" code habitat types for the Project were assigned foraging values based on the following table (Table 5). FLUCFCS Codes 4221 and 4241 were used to identify wetlands with monocultures of exotic species (Brazilian pepper and melaleuca).

Table 5. Wood Stork Foraging Suitability Values by "E" Code

"E" Code	"E" Code Exotic Vegetation Coverage (Percent)	USFWS Exotic Vegetation Coverage (Percent)	USFWS Foraging Suitability Value
E1	0-24	0-25	100
E2	25-49	25-50	64
E3	50-75	50-75	37
E4	76-100	75-90	3
4221, 4241	>95	90-100	0

Due to overlapping percent ranges, the field distinction between "E4" codes and FLUCFCS Code 4221 or 4241 may be difficult to define, so the foraging suitability value of three percent was used for FLUCFCS Codes 4221 and 4241 in the Project analysis, instead of zero.

In order to assess the wood stork foraging suitability values for the Project, the wetland habitats were grouped by vegetation type and exotic species coverage per the USFWS (2010). The resulting acreages and habitat descriptions are summarized in Appendix D. The open water areas on the Project consisting of ditches were included in the wetland acreage total since these areas have the potential to provide foraging habitat for wood storks.

A wood stork foraging habitat analysis was conducted for the previous Town of Big Cypress (TOBC) project. Under that analysis, wetland hydroperiods classes were determined using available topographic data for the site and water level data available from electronic groundwater wells monitored by CDM, Inc. (CDM). Monitoring well data from two of CDM's wells on and near the TOBC project site were evaluated and days of inundation were calculated for 2005 and 2006. Rainfall data was obtained from the SFWMD DBHYDRO database using the Corkscrew Swamp Sanctuary, Station No. 16597. This rainfall station is located approximately six miles northwest of the Project. The water level monitoring data in graphic format, rainfall data, and an aerial photograph showing the approximate locations of the monitoring wells are provided as Appendix E.

CDM's Monitoring Well No. 2S was located in northwest portion of the Project, approximately 1,100 feet west of the Shaggy Cypress Swamp (Wetland No. 10 as shown on Appendix C). Based on topographic data within the Shaggy Cypress Swamp the average ground elevation of wetlands nearest to Well No. 2S is 16.0 feet North American Vertical Datum (NAVD). Based on CDM's well data from Well No. 2S, the wetlands in this area had an average hydroperiod of 122 days of inundation per year.

CDM's Monitoring Well No. 202S was located within the southwest portion of the Project site on the south edge of Wetland No. 26, as identified on Appendix C. Topographic data from Wetland No. 26 indicates the average ground elevation to be 15.0 feet NAVD. Based on CDM's well data from Well No. 202S, the wetlands in this area had an average hydroperiod of 120 days of inundation per year.

Based on the above information, the hydroperiod classification for Wetland Nos. 10 and 26 was determined to be Class 3. The dominant habitat types of Wetland Nos. 10 and 26 are cypress and cypress/pine/cabbage palm communities. Since the wetland habitats throughout the majority of the Project are similar to the wetland habitats of Wetland Nos. 10 and 26, a hydroperiod classification of Class 3 was assigned to the remaining wetlands on the Project site with the exception of marshes.

The marsh areas on the Project site consist predominantly of alligator flag (*Thalia geniculata*), pickerelweed (*Pontederia cordata*), arrowhead (*Saggitaria lancifolia*), and maidencane (*Panicum hemitomon*). Due to the depressional nature of these areas and longer hydroperiods, the marshes on-site were determined to be Class 4. Kushlan reports flag marshes in Florida to have a hydroperiod of six to nine months (Myers and Ewel 1990), which is consistent with a Class 4 designation. Information included in the USFWS's biological opinion for the Picayune Strand Restoration Project reports an average hydroperiod of six to ten months for marshes within the Picayune Strand Restoration Project (USFWS 2009).

The biomass calculations for the wetland impacts within the proposed development areas are summarized in Appendix F. This biomass estimate represents the potential loss of fish biomass for wood stork foraging.

The biomass calculations for the mitigation areas associated with the Project are summarized in Appendix G. This includes an estimate of the biomass based on existing conditions and an estimate of biomass based on proposed conditions after successful implementation of the wetland mitigation. The net increase in biomass from existing conditions to post-mitigation conditions represents a substantial lift in potential biomass of forage to wood storks.

Table 6 summarizes the results of this analysis for the Project.

Table 6. Wood Stork Foraging Habitat Analysis Summary

Wetland Hydroperiod	Area	Fish Biomass (Kilogram)		
		Existing Conditions	Post-Development	Gain/(Loss)
Class 3 (120 to 180 days)	Wetland Impacts	225.83	0.00	(225.83)
	Wetland Mitigation	4,888.46	6,906.76	2,018.30
Class 3 Sub-Total				**1,792.47**
Class 4 (180 to 240 days)	Wetland Impacts	11.75	0.00	(11.75)
	Wetland Mitigation	42.05	71.92	29.87
Class 4 Sub-Total				**18.12**
Net Biomass Change				**1,810.59**

SUMMARY

A wood stork foraging habitat analysis was conducted for the Project following the methodology as established by the USFWS, which is described in detail in the USFWS's May 28, 2010 Biological Opinion for South Fort Meade Mine (USFWS 2010). Based on this analysis, unavoidable wetland impacts from development activities will result in the loss of 237.58 kilograms of fish biomass potentially vulnerable to predation by wood storks.

The proposed wetland mitigation activities within the wetland preserves on the Project will result in a net increase of 1,810.59 kilograms of fish biomass potentially vulnerable to predation by wood storks. As such, the proposed mitigation activities will more than offset the loss in fish biomass resulting from the proposed Project.

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Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System. Procedure No. 550-010-001-a. Third Edition.

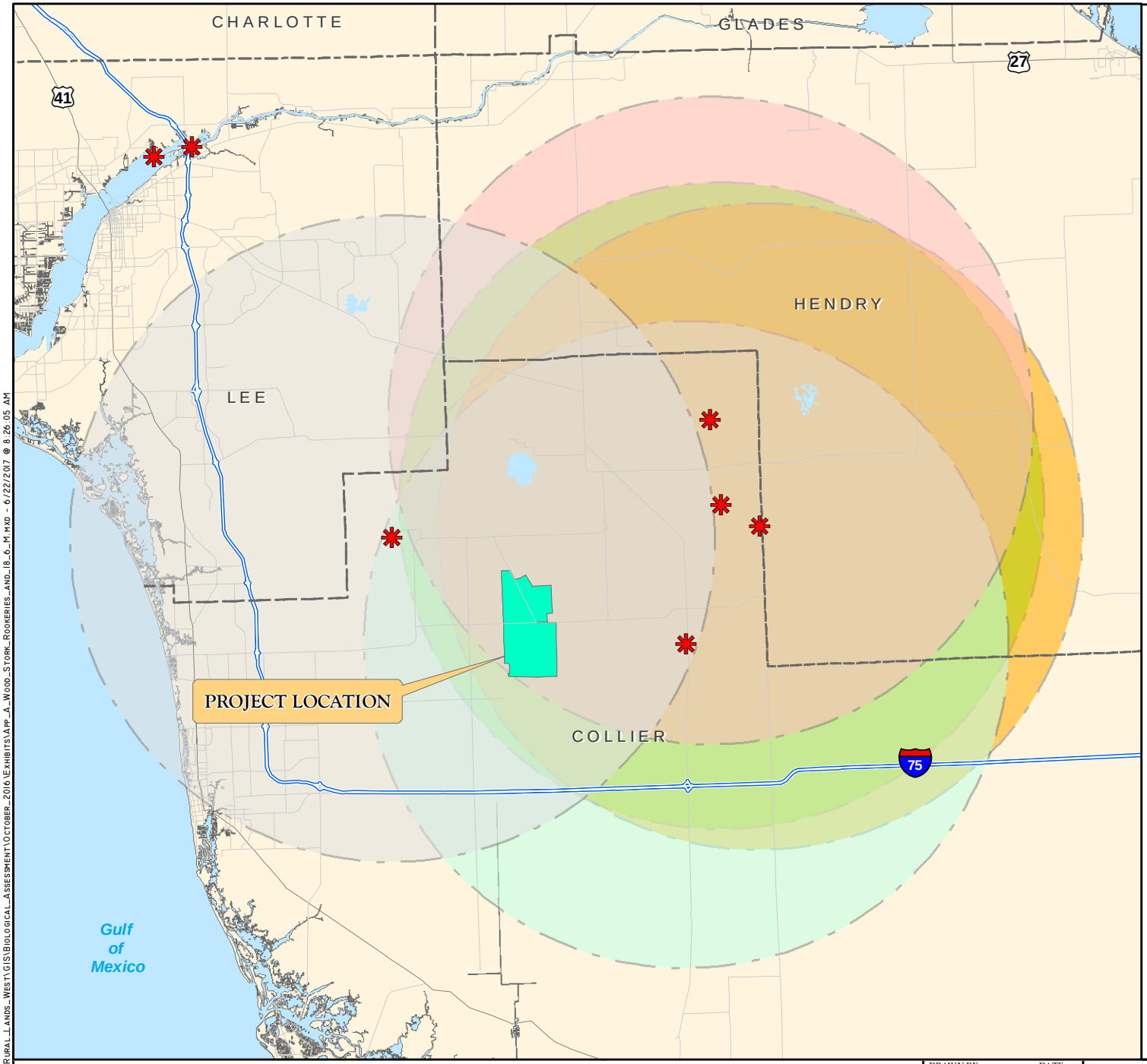
Myers, R.L., and J.J. Ewel, eds. 1990. Ecosystems of Florida. University of Central Florida Press, Orlando, Florida.

U.S. Fish and Wildlife Service. 2009. Biological Opinion for Picayune Strand Restoration Project. Service Federal Activity Code 41420-2008-FA-0018. South Florida Ecological Services Office, Vero Beach, Florida.

U.S. Fish and Wildlife Service. 2010. Biological Opinion for South Fort Meade Mine. Service Federal Activity Code 41420-2007-FA-1006. South Florida Ecological Services Office, Vero Beach, Florida.

APPENDIX A

WOOD STORK ROOKERIES AND 18.6 MILE CORE FORAGING AREAS



LEGEND

- Rural Lands West
- Wood Stork Nesting Colonies

18.6 Mile Core Foraging Areas

- 619018
- 619141
- Barron Collier
- Collier-Hendry
- Sadie Cypress

N
W E
S

0 4 8 12
Miles

NOTES:

COUNTY INFORMATION AND ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

WOOD STORK NESTING COLONIES WERE ACQUIRED FROM THE FWCC JULY 2016 AND ARE CURRENT TO 2014.

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APPENDIX A. WOOD STORK NESTING COLONIES AND 18.6 MILE CORE FORAGING AREAS RURAL LANDS WEST

DRAWN BY	DATE
W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

APPENDIX B

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac.±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac.±
210	CROPLAND AND PASTURELAND	758.92 Ac.±
211	IMPROVED PASTURE	7.40 Ac.±
212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
262	LOW PASTURE, HYDRIC	43.36 Ac.±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac.±
422	BRAZILIAN PEPPER	42.76 Ac.±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac.±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac.±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac.±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac.±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac.±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac.±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac.±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac.±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac.±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac.±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_WOODSTORK_BA\EXHIBITS\CAD\APP B AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: NORTHWEST JUN 21, 2017 - 4:42PM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

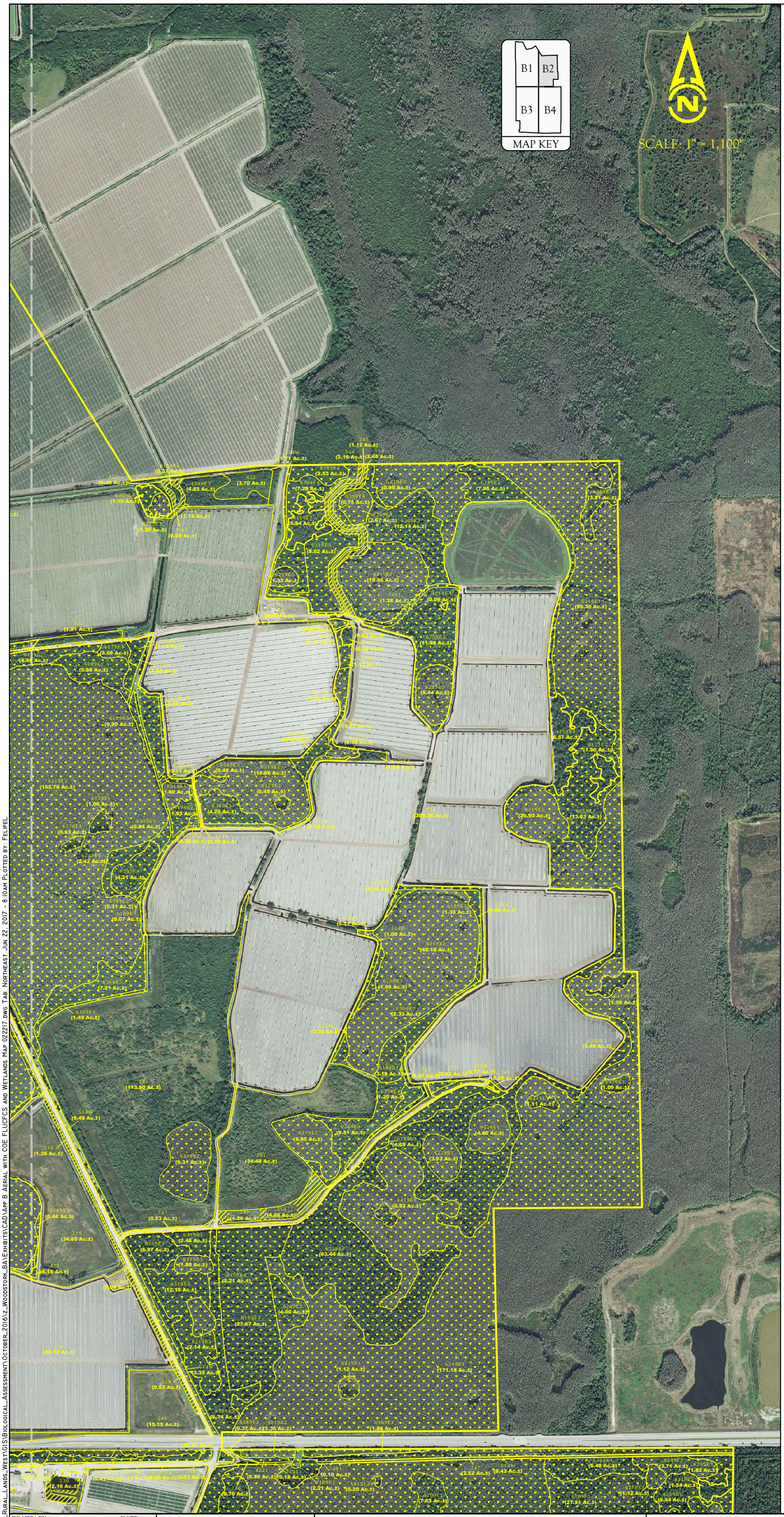
PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX B1



LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac.±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac.±
210	CROPLAND AND PASTURELAND	758.92 Ac.±
211	IMPROVED PASTURE	7.40 Ac.±
212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
262	LOW PASTURE, HYDRIC	43.36 Ac.±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac.±
422	BRAZILIAN PEPPER	42.76 Ac.±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac.±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac.±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac.±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac.±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac.±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac.±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac.±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac.±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac.±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac.±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05cem1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_WOODSTORK_BA\EXHIBITS\CAD\APP B AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: NORTHEAST JUN 22, 2017 - 8:10AM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
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Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX B2

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

FLUCFCS CODES	DESCRIPTIONS	ACREAGE
100	RESIDENTIAL	7.46 Ac.±
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	21.72 Ac.±
210	CROPLAND AND PASTURELAND	758.92 Ac.±
211	IMPROVED PASTURE	7.40 Ac.±
212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
262	LOW PASTURE, HYDRIC	43.36 Ac.±
3219 E1	PALMETTO PRAIRIE, DISTURBED (0-24% EXOTICS)	21.30 Ac.±
4119 E1	PINE FLATWOODS, DISTURBED (0-24% EXOTICS)	176.10 Ac.±
4119 E2	PINE FLATWOODS, DISTURBED (25-49% EXOTICS)	29.43 Ac.±
4119 E3	PINE FLATWOODS, DISTURBED (50-75% EXOTICS)	49.19 Ac.±
4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
4199 E3	OTHER PINE, DISTURBED (50-75% EXOTICS)	11.14 Ac.±
4199 E4	OTHER PINE, DISTURBED (76-100% EXOTICS)	0.37 Ac.±
422	BRAZILIAN PEPPER	42.76 Ac.±
4221	BRAZILIAN PEPPER, HYDRIC	80.94 Ac.±
424	MELALEUCA	0.83 Ac.±
4241	MELALEUCA, HYDRIC	5.88 Ac.±
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
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6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
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6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
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J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_WOODSTORK_BA\EXHIBITS\CAD\APP B AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHWEST JUN 22, 2017 - 8:12AM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
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Passarella & Associates, Inc. Consulting Ecologists

RURAL LANDS WEST

AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No.	05CEM1481
SHEET No.	APPENDIX B3

LEGEND:

- COE WETLANDS (4,475.95 Ac.±)
- COE ISOLATED WETLANDS (14.71 Ac.±)
- COE "WATERS OF THE U.S." (34.25 Ac.±)
- SURVEYED WETLAND LINE

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212	UNIMPROVED PASTURE	37.35 Ac.±
214	ROW CROPS	4174.76 Ac.±
260	RURAL OPEN LAND	33.27 Ac.±
261	FALLOW CROPLAND	184.74 Ac.±
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4119 E4	PINE FLATWOODS, DISTURBED (76-100% EXOTICS)	12.27 Ac.±
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4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	0.30 Ac.±
4279 E4	LIVE OAK, DISTURBED (76-100% EXOTICS)	1.00 Ac.±
4289 E1	CABBAGE PALM, DISTURBED (0-24% EXOTICS)	21.02 Ac.±
4289 E2	CABBAGE PALM, DISTURBED (25-49% EXOTICS)	0.34 Ac.±
4289 E4	CABBAGE PALM, DISTURBED (76-100% EXOTICS)	1.21 Ac.±
4349 E1	MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	6.63 Ac.±
4349 E2	MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	2.57 Ac.±
4349 E3	MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	5.50 Ac.±
514	DITCH	30.20 Ac.±
514W	DITCH, WETLAND	83.77 Ac.±
525	CATTLE POND	1.89 Ac.±
525W	CATTLE POND, WETLAND	1.25 Ac.±
530	RESERVOIR	2.16 Ac.±
6179 E1	MIXED WETLAND HARDWOODS, DISTURBED (0-24% EXOTICS)	21.31 Ac.±
6179 E2	MIXED WETLAND HARDWOODS, DISTURBED (25-49% EXOTICS)	9.27 Ac.±
6179 E3	MIXED WETLAND HARDWOODS, DISTURBED (50-75% EXOTICS)	3.16 Ac.±
6189 E1	WILLOW, DISTURBED (0-24% EXOTICS)	83.10 Ac.±
6189 E2	WILLOW, DISTURBED (25-49% EXOTICS)	34.17 Ac.±
6189 E3	WILLOW, DISTURBED (50-75% EXOTICS)	77.45 Ac.±
6189 E4	WILLOW, DISTURBED (76-100% EXOTICS)	35.35 Ac.±
6219 E1	CYPRESS, DISTURBED (0-24% EXOTICS)	1834.44 Ac.±
6219 E2	CYPRESS, DISTURBED (25-49% EXOTICS)	537.70 Ac.±
6219 E3	CYPRESS, DISTURBED (50-75% EXOTICS)	361.11 Ac.±
6219 E4	CYPRESS, DISTURBED (76-100% EXOTICS)	288.86 Ac.±
6249 E1	CYPRESS/PINE/CABBAGE PALM, DISTURBED (0-24% EXOTICS)	61.64 Ac.±
6249 E2	CYPRESS/PINE/CABBAGE PALM, DISTURBED (25-49% EXOTICS)	46.86 Ac.±
6249 E3	CYPRESS/PINE/CABBAGE PALM, DISTURBED (50-75% EXOTICS)	75.60 Ac.±
6249 E4	CYPRESS/PINE/CABBAGE PALM, DISTURBED (76-100% EXOTICS)	22.00 Ac.±
6259 E1	HYDRIC PINE, DISTURBED (0-24% EXOTICS)	25.64 Ac.±
6259 E2	HYDRIC PINE, DISTURBED (25-49% EXOTICS)	129.68 Ac.±
6259 E3	HYDRIC PINE, DISTURBED (50-75% EXOTICS)	127.36 Ac.±
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	58.77 Ac.±
6289 E1	HYDRIC CABBAGE PALM, DISTURBED (0-24% EXOTICS)	15.96 Ac.±
6289 E2	HYDRIC CABBAGE PALM, DISTURBED (25-49% EXOTICS)	1.98 Ac.±
6289 E3	HYDRIC CABBAGE PALM, DISTURBED (50-75% EXOTICS)	1.23 Ac.±
6299 E1	HYDRIC OAK HAMMOCK, DISTURBED (0-24% EXOTICS)	0.86 Ac.±
6309 E1	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (0-24% EXOTICS)	62.94 Ac.±
6309 E2	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (25-49% EXOTICS)	31.89 Ac.±
6309 E3	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (50-75% EXOTICS)	108.43 Ac.±
6309 E4	WETLAND MIXED HARDWOOD CONIFER, DISTURBED (76-100% EXOTICS)	21.40 Ac.±
6319 E1	WETLAND SHRUB, DISTURBED (0-24% EXOTICS)	3.81 Ac.±
6319 E2	WETLAND SHRUB, DISTURBED (25-49% EXOTICS)	8.63 Ac.±
6319 E3	WETLAND SHRUB, DISTURBED (50-75% EXOTICS)	85.67 Ac.±
6319 E4	WETLAND SHRUB, DISTURBED (76-100% EXOTICS)	29.90 Ac.±
6419 E1	FRESHWATER MARSH, DISTURBED (0-24% EXOTICS)	16.29 Ac.±
6419 E2	FRESHWATER MARSH, DISTURBED (25-49% EXOTICS)	5.73 Ac.±
6419 E3	FRESHWATER MARSH, DISTURBED (50-75% EXOTICS)	12.23 Ac.±
6419 E4	FRESHWATER MARSH, DISTURBED (76-100% EXOTICS)	3.47 Ac.±
6439 E2	WET PRAIRIE, DISTURBED (25-49% EXOTICS)	1.71 Ac.±
6479 E1	POND APPLE MARSH, DISTURBED (0-24% EXOTICS)	1.87 Ac.±
6479 E3	POND APPLE MARSH, DISTURBED (50-75% EXOTICS)	0.12 Ac.±
740	DISTURBED LAND	38.81 Ac.±
7401	DISTURBED LAND, HYDRIC	27.87 Ac.±
743	SPOIL	0.48 Ac.±
747	BERM	16.69 Ac.±
814	ROAD	26.44 Ac.±
8146	UNPAVED ROAD	49.72 Ac.±
	TOTAL	10264.63 Ac.±

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2014.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE,INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KP15JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_WOODSTORK_BA\EXHIBITS\CAD\APP B AERIAL WITH COE FLUCFCS AND WETLANDS MAP 022217.DWG TAB: SOUTHEAST JUN 22, 2017 - 8:15AM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/26/16
REVIEWED BY	DATE
H.P.	7/26/16
REVISED	DATE

13620 Metropolis Avenue
Suite 200
Fort Myers, Florida 33912
Phone (239) 274-0067
Fax (239) 274-0069

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

RURAL LANDS WEST

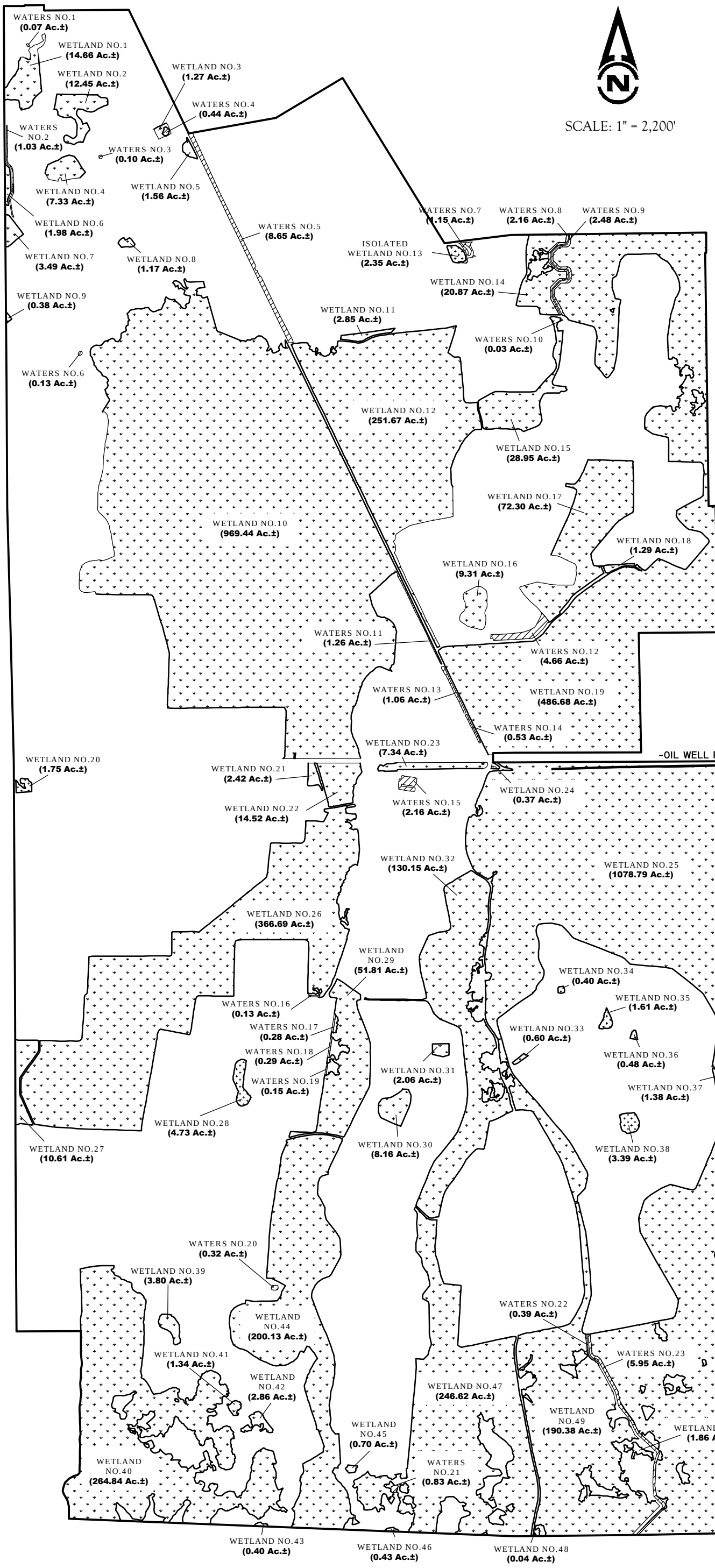
AERIAL WITH COE FLUCFCS AND WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX B4

APPENDIX C

COE WETLANDS MAP



WETLAND NO.	ACREAGE
1	14.66
2	12.45
3	1.27
4	7.33
5	1.56
6	1.98
7	3.49
8	1.17
9	0.38
10	969.44
11	2.85
12	251.67
14	20.87
15	28.95
16	9.31
17	72.30
18	1.29
19	486.68
21	2.42
22	14.52
23	7.34
24	0.37
25	1078.79
26	366.69
27	10.61
29	51.81
30	8.16
31	2.06
32	130.15
33	0.60
37	1.38
39	3.80
40	264.84
41	1.34
42	2.86
43	0.40
44	200.13
45	0.70
46	0.43
47	246.62
48	0.04
49	190.38
50	1.86
TOTAL	4475.95 Ac.±

ISOLATED WETLAND NO.	ACREAGE
13	2.35
20	1.75
28	4.73
34	0.40
35	1.61
36	0.48
38	3.39
TOTAL	14.71 Ac.±

WATERS NO.	ACREAGE
1	0.07 Ac.±
2	1.03 Ac.±
3	0.10 Ac.±
4	0.44 Ac.±
5	8.65 Ac.±
6	0.13 Ac.±
7	1.15 Ac.±
8	2.16 Ac.±
9	2.48 Ac.±
10	0.03 Ac.±
11	1.26 Ac.±
12	4.66 Ac.±
13	1.06 Ac.±
14	0.53 Ac.±
15	2.16 Ac.±
16	0.13 Ac.±
17	0.28 Ac.±
18	0.29 Ac.±
19	0.15 Ac.±
20	0.32 Ac.±
21	0.83 Ac.±
22	0.39 Ac.±
23	5.95 Ac.±
TOTAL	34.25 Ac.±

NOTES:

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

WETLAND LINES PER ABB, INC. DRAWING No. JDL-N-WORKSHEET TO KPI5JUN07.DWG DATED JUNE 15, 2007.

WETLAND LINES SHOWN PER COE APPROVED JURISDICTIONAL DETERMINATION SAJ-2008-2430, ISSUED SEPTEMBER 9, 2008.

J:\2005\05CEM1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\Z_WOODSTORK_BA\EXHIBITS\CAD\APP C WETLANDS MAP 10-25-16.DWG TAB: 11X17-M JUN 22, 2017 - 8:22AM PLOTTED BY: FELIPEL

DRAWN BY	DATE
H.H.	7/14/16
REVIEWED BY	DATE
H.P.	7/14/16
REVISED	DATE

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RURAL LANDS WEST

COE WETLANDS MAP

DRAWING No. 05CEM1481

SHEET No. APPENDIX C

APPENDIX D

WOOD STORK HABITAT CODES

Appendix D. Wood Stork Habitat Codes – Wetland Impact and Mitigation Areas

USFWS Habitat Code	Impact Area		On-Site Preserve	
	FLUCFCS Code	Acreage	FLUCFCS Code	Acreage
FW	262	35.39	262	6.07
DBP	4221	51.67	4221	28.91
DM	4241	1.21	4241	4.67
WDC	514W	32.22	514W	51.53
DC	514	11.20	514	18.77
WSP	525W	0.70	525W	0.55
SP	525, 530	2.70	525	1.35
WF25	6179 E1, 6309 E1	1.59	6179 E1, 6309 E1	72.75
WF50	6179 E2	3.13	6179 E2, 6309 E2	38.03
WF75	6179 E3, 6309 E3	9.85	6179 E3, 6309 E3	100.63
WF90	6309 E4	0.08	6309 E4	20.08
WS25	6189 E1	0.92	6189 E1, 6319 E1	82.47
WS50	6189 E2, 6319 E2	0.65	6189 E2, 6319 E2	42.15
WS75	6189 E3, 6319 E3	21.27	6189 E3, 6319 E3	141.85
WS90	6189 E4, 6319 E4	18.36	6189 E4, 6319 E4	46.89
C25	6219 E1	4.46	6219 E1	1728.86
C50	6219 E2	6.58	6219 E2	481.33
C75	6219 E3	6.37	6219 E3	352.82
C90	6219 E4	22.87	6219 E4	265.66
PC25	6249 E1	0.60	6249 E1	26.95
PC50	-	-	6249 E2	36.45
PC75	6249 E3	0.12	6249 E3	59.14
PC90	6249 E4	6.88	6249 E4	15.12
HP25	-	-	6259 E1	25.64
HP50	6259 E2	0.77	6259 E2	128.91
HP75	6259 E3	18.89	6259 E3	108.47
HP90	6259 E4	34.13	6259 E4	24.64
HCP25	6289 E1	0.26	6289 E1	15.70
HCP50	6289 E2	1.89	6289 E2	0.02
HCP75	-	-	6289 E3	1.23
HOH25	-	-	6299 E1	0.86
MAR25	6419 E1	2.66	6419 E1	7.69

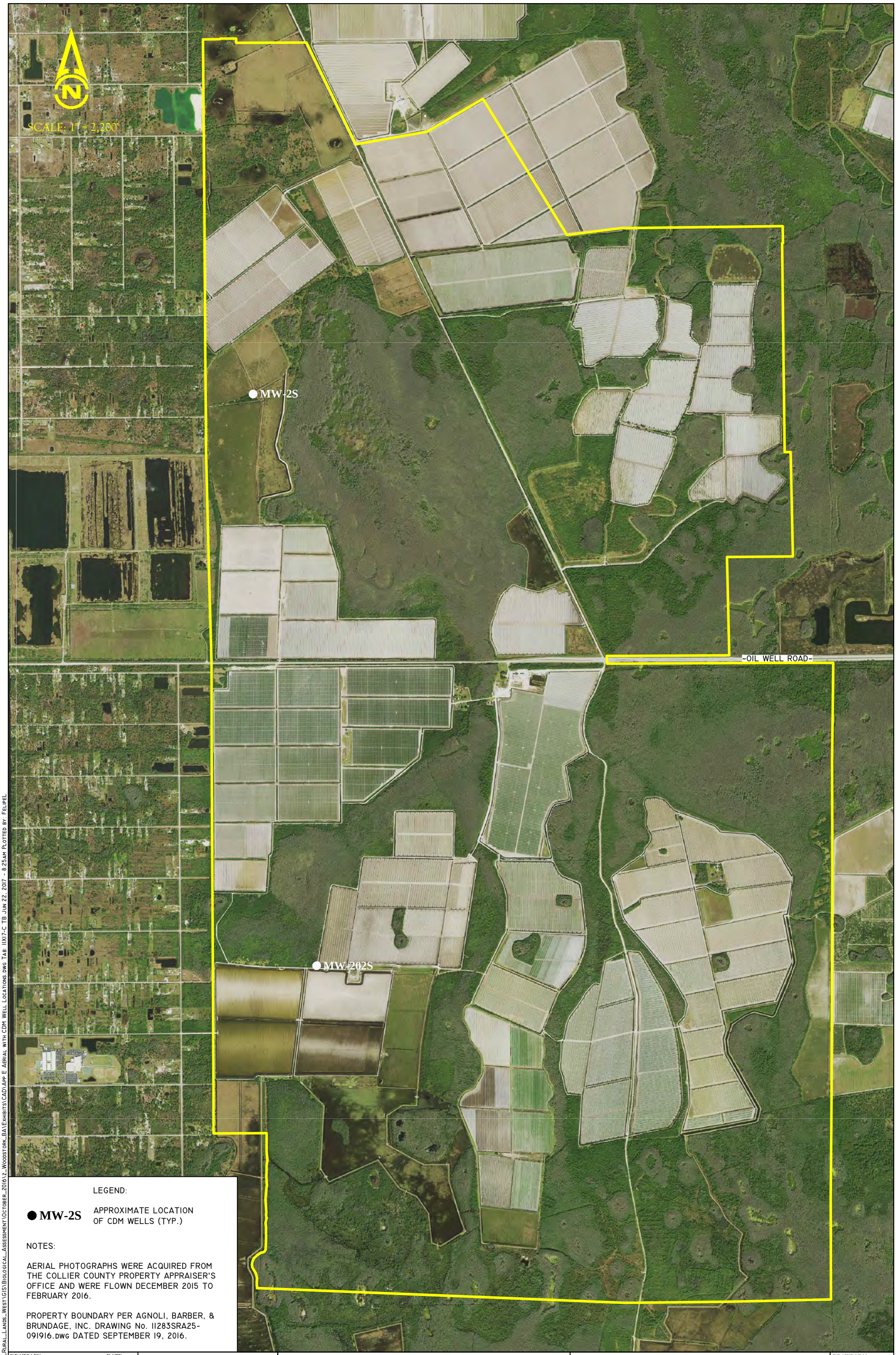
Appendix D. (Continued)

USFWS Habitat Code	Impact Area		On-Site Preserve	
	FLUCFCS Code	Acreage	FLUCFCS Code	Acreage
MAR50	6419 E2	0.73	6419 E2	5.00
MAR75	6419 E3	1.87	6419 E3	7.21
MAR90	-	-	6419 E4	3.47
WP50	6439 E2	1.71	-	-
PAM25	-	-	6479 E1	1.87
PAM75	-	-	6479 E3	0.12
HD	7401	5.65	7401	22.22
Totals		**307.38**		**3,976.08**

FW = Farmed Wetland
DBP = Dense Brazilian Pepper
DM = Dense Melaleuca
WDC = Wetland Ditch/Canal
DC = Ditch/Canal
WSP = Wetland Seasonal Pond
SP = Seasonal Pond
WF25 = Wetland Forested Mix (0-25% Exotic Coverage)
WF50 = Wetland Forested Mix (25-50% Exotic Coverage)
WF75 = Wetland Forested Mix (50-75% Exotic Coverage)
WF90 = Wetland Forested Mix (75-100% Exotic Coverage)
WS25 = Wetland Shrub (0-25% Exotic Coverage)
WS50 = Wetland Shrub (25-50% Exotic Coverage)
WS75 = Wetland Shrub (50-75% Exotic Coverage)
WS90 = Wetland Shrub (75-100% Exotic Coverage)
C25 = Cypress, Disturbed (0-25% Exotic Coverage)
C50 = Cypress, Disturbed (25-50% Exotic Coverage)
C75 = Cypress, Disturbed (50-75% Exotic Coverage)
C90 = Cypress, Disturbed (75-100% Exotic Coverage)
PC25 = Pine/Cypress (0-25% Exotic Coverage)
PC50 = Pine/Cypress (50-75% Exotic Coverage)
PC75 = Pine/Cypress (50-75% Exotic Coverage)
PC90 = Pine/Cypress (75-100% Exotic Coverage)
HP25 = Hydric Pine, Disturbed (0-25% Exotic Coverage)
HP50 = Hydric Pine, Disturbed (25-50% Exotic Coverage)
HP75 = Hydric Pine, Disturbed (50-75% Exotic Coverage)
HP90 = Hydric Pine, Disturbed (75-100% Exotic Coverage)
HCP25 = Hydric Cabbage Palm, Disturbed (0-25% Exotic Coverage)
HCP50 = Hydric Cabbage Palm, Disturbed (25-50% Exotic Coverage)
HCP75 = Hydric Cabbage Palm, Disturbed (50-75% Exotic Coverage)
HOH25 = Hydric Oak Hammock, Disturbed (0-25% Exotic Coverage)
MAR 25 = Freshwater Marsh, Disturbed (0-25% Exotic Coverage)
MAR50 = Freshwater Marsh, Disturbed (25-50% Exotic Coverage)
MAR75 = Freshwater Marsh, Disturbed (50-75% Exotic Coverage)
MAR90 = Freshwater Marsh, Disturbed (75-100% Exotic Coverage)
WP50 = Wet Prairie (25-50% Exotic Coverage)
PAM25 = Pond Apple Marsh, Disturbed (0-25% Exotic Coverage)
PAM75 = Pond Apple Marsh, Disturbed (75-100% Exotic Coverage)
HD = Hydric Disturbed Land

APPENDIX E

AERIAL WITH CDM WELL LOCATIONS AND MONITORING WELL AND RAINFALL DATA



LEGEND:

● **MW-2S** APPROXIMATE LOCATION OF CDM WELLS (TYP.)

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED FROM THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE AND WERE FLOWN DECEMBER 2015 TO FEBRUARY 2016.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

DRAWN BY	DATE
H.H., W.C.	10/25/16
REVIEWED BY	DATE
H.P.	10/25/16
REVISED	DATE

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Consulting Ecologists
PASSARELLA & ASSOCIATES INC

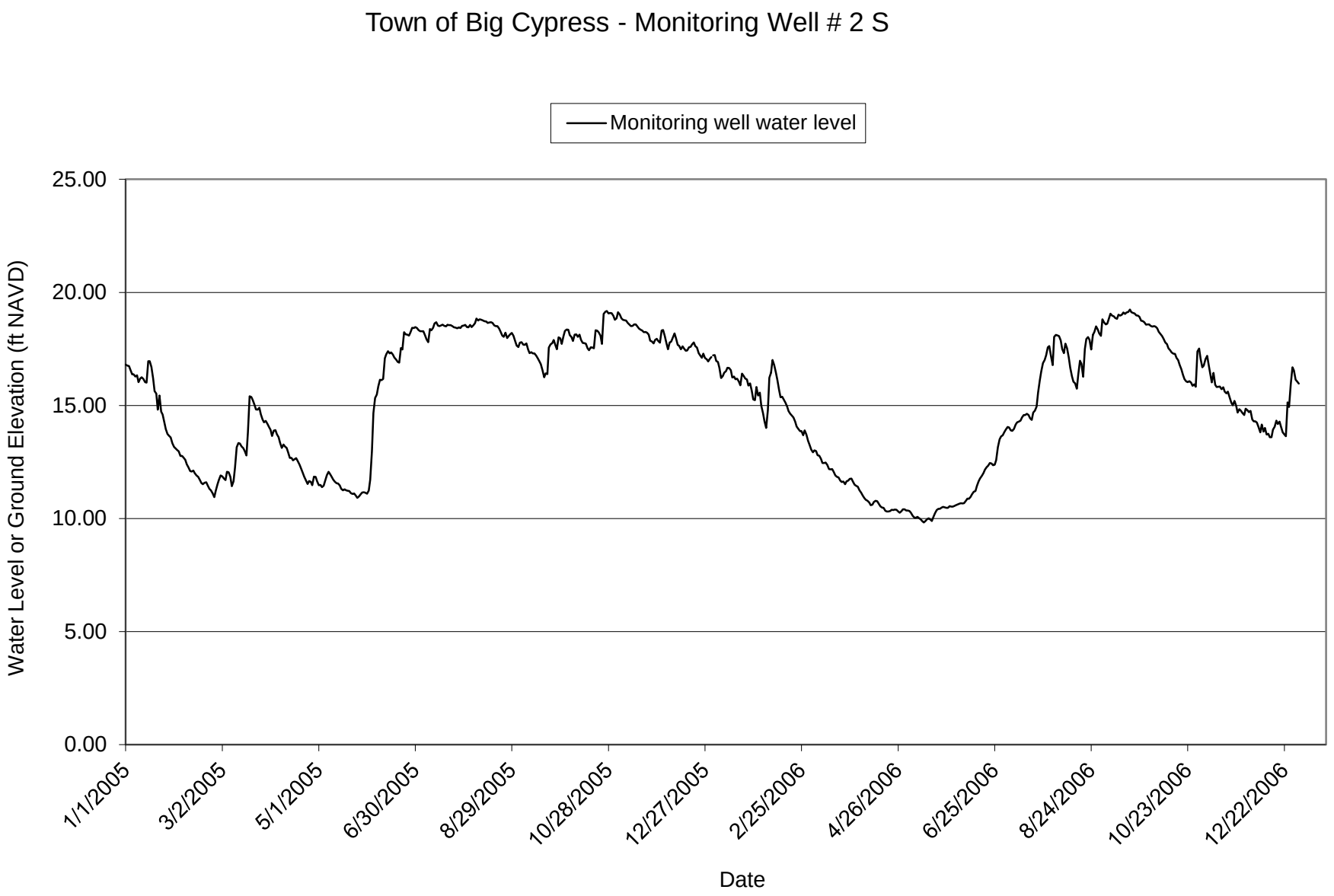
RURAL LANDS WEST

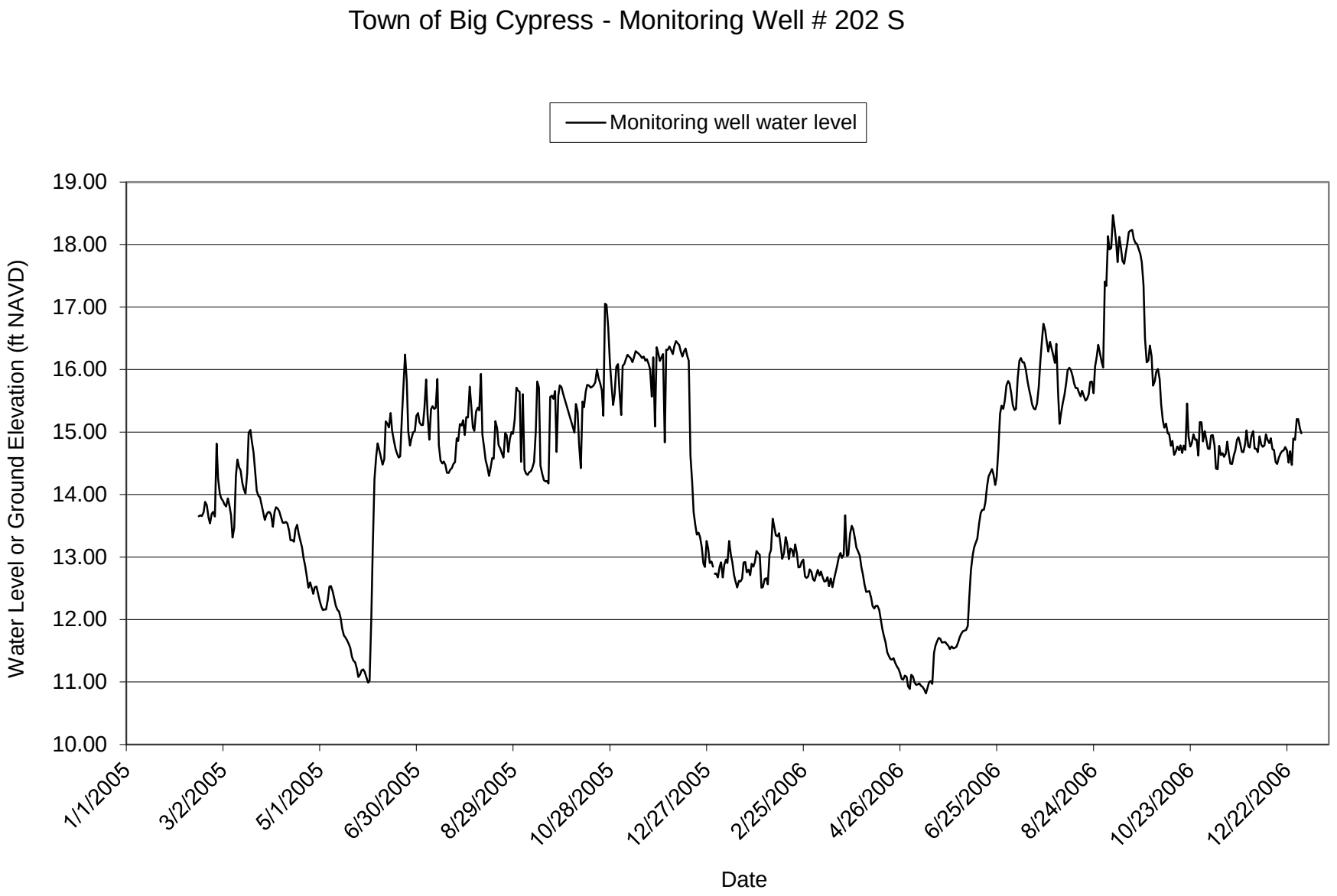
AERIAL WITH CDM WELL LOCATIONS

DRAWING No. 05CEM1481

SHEET No. APPENDIX E

J:\2005\05CEM1481\00_Rural_Lands_West\GIS\Biological_Assessment\October_2016\z_Woodstork_BA\Exhibits\CAD\App E Aerial with CDM Well Locations.dwg Tab: IIX17-C TB Jun 22, 2017 - 8:25am Plotted by: Felipel


Town of Big Cypress - Monitoring Well # 2 S
Monitoring well water level
Water Level or Ground Elevation (ft NAVD)
25.00
20.00
15.00
10.00
5.00
0.00
1/1/2005
3/2/2005
5/1/2005
6/30/2005
8/29/2005
10/28/2005
12/27/2005
2/25/2006
4/26/2006
6/25/2006
8/24/2006
10/23/2006
12/22/2006
Date


Town of Big Cypress - Monitoring Well # 202 S
Monitoring well water level
Water Level or Ground Elevation (ft NAVD)
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18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
1/1/2005
3/2/2005
5/1/2005
6/30/2005
8/29/2005
10/28/2005
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4/26/2006
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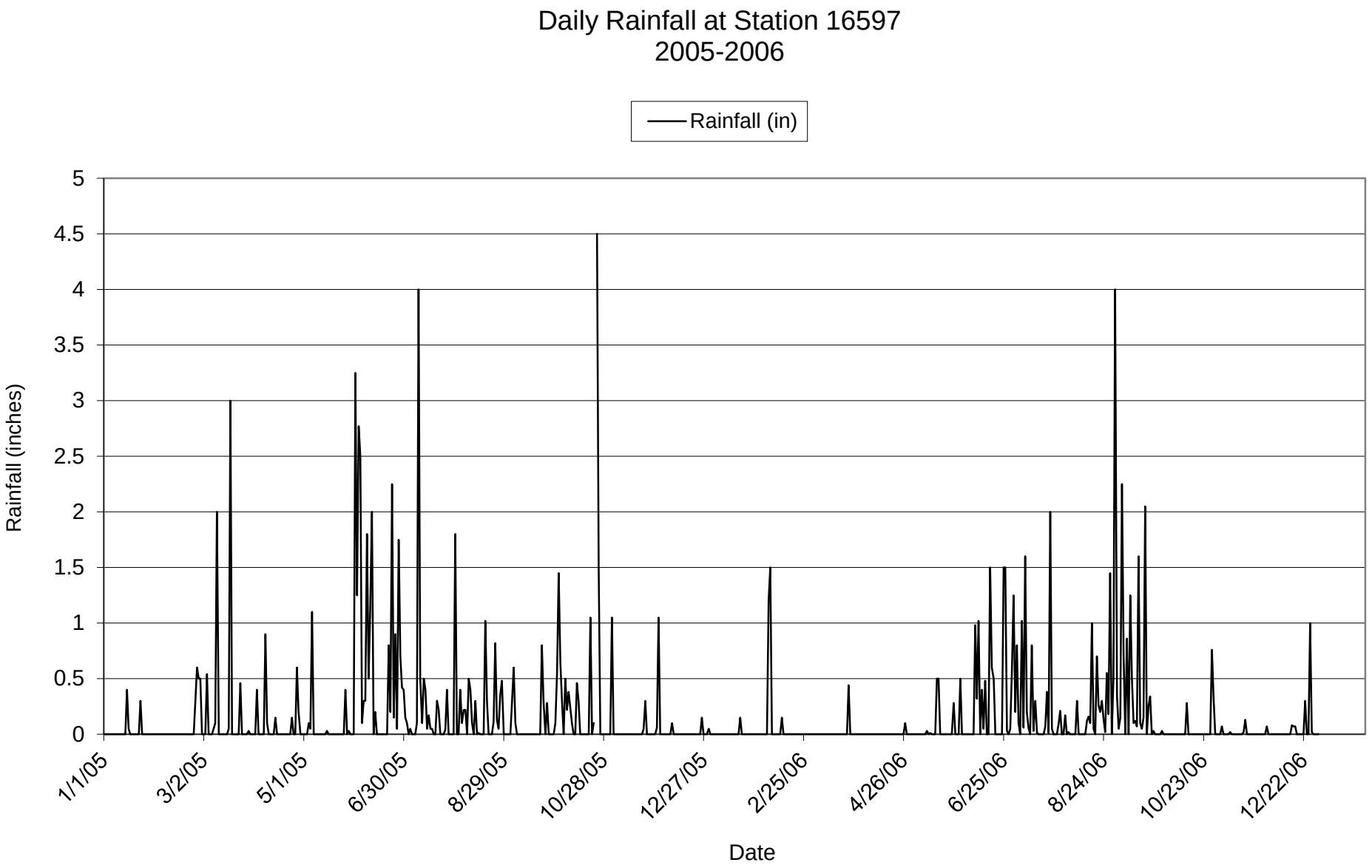
8/24/2006
10/23/2006
12/22/2006
Date


Daily Rainfall at Station 16597
2005-2006
Rainfall (in)
Rainfall (inches)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1/1/05
3/2/05
5/1/05
6/30/05
8/29/05
10/28/05
12/27/05
2/25/06
4/26/06
6/25/06
8/24/06
10/23/06
12/22/06
Date

APPENDIX F

WOOD STORK SUITABLE FORAGING PREY BASE LOSS

Appendix F. Wood Stork Suitable Foraging Prey Base Loss – Impact Area

USFWS Habitat Code	Wetland Impact (Acres)	Wetland Impacts (m^2)	Foraging Suitability Value	Biomass/ Hydroperiod (grams/m^2)	Wood Stork Consumption Percentage	Prey Biomass (Kilograms)
DBP	51.67	209,100.74	0.03	1.32	0.325	2.69
DM	1.21	4,896.69	0.03	1.32	0.325	0.06
WF90	0.08	323.75	0.03	1.32	0.325	0.00
WS90	18.36	74,300.17	0.03	1.32	0.325	0.96
C90	22.87	92,551.46	0.03	1.32	0.325	1.19
PC90	6.88	27,842.33	0.03	1.32	0.325	0.36
HP90	34.13	138,118.99	0.03	1.32	0.325	1.78
WF75	9.85	39,861.47	0.37	1.32	0.325	6.33
WS75	21.27	86,076.50	0.37	1.32	0.325	13.66
C75	6.37	25,778.43	0.37	1.32	0.325	4.09
PC75	0.12	485.62	0.37	1.32	0.325	0.08
HP75	18.89	76,445.00	0.37	1.32	0.325	12.13
MAR75	1.87	7,567.61	0.37	2.34	0.325	2.13
WF50	3.13	12,666.64	0.64	1.32	0.325	3.48
WS50	0.65	2,630.45	0.64	1.32	0.325	0.72
C50	6.58	26,628.27	0.64	1.32	0.325	7.31
HCP50	1.89	7,648.55	0.64	1.32	0.325	2.10
HP50	0.77	3,116.07	0.64	1.32	0.325	0.86
WP50	1.71	6,920.11	0.64	1.32	0.325	1.90
MAR50	0.73	2,954.20	0.64	2.34	0.325	1.44
FW	35.39	143,218.02	1.00	1.32	0.325	61.44
WDC	32.22	130,389.51	1.00	1.32	0.325	55.94
DC	11.2	45,324.72	1.00	1.32	0.325	19.44
WSP	0.7	2,832.80	1.00	1.32	0.325	1.22
SP	2.7	10,926.50	1.00	1.32	0.325	4.69
WF25	1.59	6,434.49	1.00	1.32	0.325	2.76
WS25	0.92	3,723.10	1.00	1.32	0.325	1.60
C25	4.46	18,048.95	1.00	1.32	0.325	7.74
PC25	0.6	2,428.11	1.00	1.32	0.325	1.04
HCP25	0.26	1,052.18	1.00	1.32	0.325	0.45

Appendix F. (Continued)

USFWS Habitat Code	Wetland Impact (Acres)	Wetland Impacts (m^2)	Foraging Suitability Value	Biomass/ Hydroperiod (grams/m^2)	Wood Stork Consumption Percentage	Prey Biomass (Kilograms)
HD	5.65	22,864.70	1.00	1.32	0.325	9.81
MAR25	2.66	10,764.62	1.00	2.34	0.325	8.19
Totals	**307.38**	**1,243,920.75**	-	-	-	**237.58**

FW = Farmed Wetland
DBP = Dense Brazilian Pepper
DM = Dense Melaleuca
WDC = Wetland Ditch/Canal
DC = Ditch/Canal
WSP = Wetland Seasonal Pond
SP = Seasonal Pond
WF25 = Wetland Forested Mix (0-25% Exotic Coverage)
WF50 = Wetland Forested Mix (25-50% Exotic Coverage)
WF75 = Wetland Forested Mix (50-75% Exotic Coverage)
WF90 = Wetland Forested Mix (75-100% Exotic Coverage)
WS25 = Wetland Shrub (0-25% Exotic Coverage)
WS50 = Wetland Shrub (25-50% Exotic Coverage)
WS75 = Wetland Shrub (50-75% Exotic Coverage)
WS90 = Wetland Shrub (75-100% Exotic Coverage)
WP50 =Wet Prairie (25-50% Exotic Coverage)
C25 = Cypress, Disturbed (0-25% Exotic Coverage)
C50 = Cypress, Disturbed (25-50% Exotic Coverage)
C75 = Cypress, Disturbed (50-75% Exotic Coverage)
C90 = Cypress, Disturbed (75-100% Exotic Coverage)
PC25 = Pine/Cypress (0-25% Exotic Coverage)
PC75 = Pine/Cypress (50-75% Exotic Coverage)
PC90 = Pine/Cypress (75-100% Exotic Coverage)
HP50 = Hydric Pine, Disturbed (25-50% Exotic Coverage)
HP75 = Hydric Pine, Disturbed (50-75% Exotic Coverage)
HP90 = Hydric Pine, Disturbed (75-100% Exotic Coverage)
HCP25 = Hydric Cabbage Palm, Disturbed (0-25% Exotic Coverage)
HCP50 = Hydric Cabbage Palm, Disturbed (25-50% Exotic Coverage)
MAR25 = Marsh (0-25% Exotic Coverage)
MAR50 = Marsh (25-50% Exotic Coverage)
MAR75 = Marsh (50-75% Exotic Coverage)
HD = Hydric Disturbed Land

APPENDIX G

WOOD STORK SUITABLE FORAGING PREY BASE PRIOR TO AND AFTER ENHANCEMENT

Appendix G-1. Wood Stork Suitable Foraging Prey Base Prior to Enhancement – Mitigation Area

USFWS Habitat Code	Wetland Enhancement (Acres)	Wetland Enhancement (m^2)	Foraging Suitability Value	Biomass/ Hydroperiod (grams/m^2)	Wood Stork Consumption Percentage	Prey Biomass (Kilograms)*
DBP	28.91	116,994.43	0.03	1.32	0.325	1.51
DM	4.67	18,898.79	0.03	1.32	0.325	0.24
WF90	20.08	81,260.75	0.03	1.32	0.325	1.05
WS90	46.89	189,756.80	0.03	1.32	0.325	2.44
C90	265.66	1,075,086.17	0.03	1.32	0.325	13.84
PC90	15.12	61,188.37	0.03	1.32	0.325	0.79
HP90	24.64	99,714.38	0.03	1.32	0.325	1.28
MAR 90	3.47	14,042.57	0.03	2.34	0.325	0.32
WF75	100.63	407,234.52	0.37	1.32	0.325	64.64
WS75	141.85	574,045.67	0.37	1.32	0.325	91.12
C75	352.82	1,427,809.62	0.37	1.32	0.325	226.64
PC75	59.14	239,330.71	0.37	1.32	0.325	37.99
HP75	108.47	438,961.82	0.37	1.32	0.325	69.68
HCP75	1.23	4,977.63	0.37	1.32	0.325	0.79
PAM75	0.12	485.62	0.37	1.32	0.325	0.08
MAR75	7.21	29,177.79	0.37	2.34	0.325	8.21
WF50	38.03	153,901.71	0.64	1.32	0.325	42.26
WS50	42.15	170,574.73	0.64	1.32	0.325	46.83
C50	481.33	1,947,870.31	0.64	1.32	0.325	534.81
PC50	36.45	147,507.68	0.64	1.32	0.325	40.50
HP50	128.91	521,679.43	0.64	1.32	0.325	143.23
HCP50	0.02	80.94	0.64	1.32	0.325	0.02
MAR 50	5.00	20,234.25	0.64	2.34	0.325	9.85
FW	6.07	24,564.38	1.00	1.32	0.325	10.54
WDC	51.53	208,534.18	1.00	1.32	0.325	89.46
DC	18.77	75,959.37	1.00	1.32	0.325	32.59
WSP	0.55	2,225.77	1.00	1.32	0.325	0.95
SP	1.35	5,463.25	1.00	1.32	0.325	2.34
WF25	72.75	294,408.34	1.00	1.32	0.325	126.30
WS25	82.47	333,743.72	1.00	1.32	0.325	143.18
C25	1,728.86	6,996,437.09	1.00	1.32	0.325	3,001.47

Appendix G-1. (Continued)

USFWS Habitat Code	Wetland Enhancement (Acres)	Wetland Enhancement (m^2)	Foraging Suitability Value	Biomass/ Hydroperiod (grams/m^2)	Wood Stork Consumption Percentage	Prey Biomass (Kilograms)*
PC25	26.95	109,062.61	1.00	1.32	0.325	46.79
HP25	25.64	103,761.23	1.00	1.32	0.325	44.51
HCP25	15.70	63,535.55	1.00	1.32	0.325	27.26
HOH25	0.86	3,480.29	1.00	1.32	0.325	1.49
HD	22.22	89,921.01	1.00	1.32	0.325	38.58
MAR 25	7.69	31,120.28	1.00	2.34	0.325	23.67
Totals	**3,976.08**	**16,090,599.35**	-	-	-	**4,930.94**

*Note: Due to rounding, prey biomass totals may sum to 0.03± kg less than the true value.

FW = Farmed Wetland
DBP =Dense Brazilian Pepper
DM = Dense Melaleuca
WDC =Wetland Ditch/Canal
DC = Ditch/Canal
WSP = Wetland Seasonal Pond
SP = Seasonal Pond
WF25 = Wetland Forested Mix (0-25% Exotic Coverage)
WF50 = Wetland Forested Mix (25-50% Exotic Coverage)
WF75 = Wetland Forested Mix (50-75% Exotic Coverage)
WF90 = Wetland Forested Mix (75-100% Exotic Coverage)
WS25 = Wetland Shrub (0-25% Exotic Coverage)
WS50 = Wetland Shrub (25-50% Exotic Coverage)
WS75 = Wetland Shrub (50-75% Exotic Coverage)
WS90 = Wetland Shrub (75-100% Exotic Coverage)
C25 = Cypress, Disturbed (0-25% Exotic Coverage)
C50 = Cypress, Disturbed (25-50% Exotic Coverage)
C75 = Cypress, Disturbed (50-75% Exotic Coverage)
C90 = Cypress, Disturbed (75-100% Exotic Coverage)
PC25 = Pine/Cypress (0-25% Exotic Coverage)
PC50 = Pine/Cypress (25-50% Exotic Coverage)
PC75 = Pine/Cypress (50-75% Exotic Coverage)
PC90 = Pine/Cypress (75-100% Exotic Coverage)
HP25 = Hydric Pine, Disturbed (0-25% Exotic Coverage)
HP50 = Hydric Pine, Disturbed (25-50% Exotic Coverage)
HP75 = Hydric Pine, Disturbed (50-75% Exotic Coverage)
HP90 = Hydric Pine, Disturbed (75-100% Exotic Coverage)
HCP25 = Hydric Cabbage Palm, Disturbed (0-25% Exotic Coverage)
HCP50 = Hydric Cabbage Palm, Distubed (25-50% Exotic Coverage)
HCP75 = Hydric Cabbage Palm, Distubed (50-75% Exotic Coverage)
HOH25 = Hydric Oak Hammock, Disturbed (0-25% Exotic Coverage)
MAR25 = Freshwater Marsh, Disturbed (0-25% Exotic Coverage)
MAR50 =Freshwater Marsh, Disturbed (25-50% Exotic Coverage)
MAR75 = Freshwater Marsh, Disturbed (50-75% Exotic Coverage)
MAR90 = Freshwater Marsh, Disturbed (75-100% Exotic Coverage)
PAM75 = Pond Apple Marsh, Disturbed (75-100% Exotic Coverage)
HD = Hydric Disturbed Land

Appendix G-2. Wood Stork Suitable Foraging Prey Base After Enhancement – Mitigation Area

USFWS Habitat Code	Wetland Enhancement (Acres)	Wetland Enhancement (m^2)	Foraging Suitability Value	Biomass/ Hydroperiod (grams/m^2)	Wood Stork Consumption Percentage	Prey Biomass (Kilograms)*
WF	231.49	936,805.31	1.00	1.32	0.325	401.89
WS	313.36	1,268,120.92	1.00	1.32	0.325	544.02
C	2828.67	11,447,203.19	1.00	1.32	0.325	4,910.85
PC	137.66	557,089.37	1.00	1.32	0.325	238.99
HP	137.66	557,089.37	1.00	1.32	0.325	238.99
HCP	16.95	68,594.11	1.00	1.32	0.325	29.43
HOH	0.86	3,480.29	1.00	1.32	0.325	1.49
MAR	309.66**	1,253,147.57	1.00	1.32	0.325	537.60
MAR	23.37	94,574.88	1.00	2.34	0.325	71.92
PAM	1.99	8,053.23	1.00	1.32	0.325	3.45
Totals	**4,001.67**	**16,194,158.24**	-	-	-	**6,978.63**

*Note: Due to rounding, prey biomass totals may sum to 0.03± kg less than the true value.

**Comprised of 25.59 acres of wetland restoration and 284.07 acres of enhanced freshwater marshes which were previously other exotic infested wetlands (e.g. DBP) or hydric human altered habitats (e.g. HD, WSP, SP, FW, DC).

HP = Hydric Pine
HCP = Hydric Cabbage Palm
HOH = Hydric Oak Hammock
C = Cypress
PC = Pine/Cypress
WF = Wetland Forest
WS = Wetland Shrub
WP = Wet Prairie
MAR = Marsh
PAM = Pond Apple Marsh

EXHIBIT 51

USFWS WOOD STORK COMPENSATION CALCULATOR

Rural Lands West

Hydroperiod	Existing Footprint		Preserve Areas				Net Change Per Hydroperiod Class	
			Pre Enhancement		Post Enhancement			
	Acres	Kgrams	Acres	Kgrams	Acres	Kgrams	Acres	Kgrams
Class 1: 0 to 60 Days							0	0
Class 2: 60 to 120 Days							0	0
Class 3: 120 to 180 Days	302.12	225.83	3952.71	4888.46	3978.3	6906.76	-276.53	1792.474579
Class 4: 180 to 240 Days	5.26	11.75	23.37	42.05	23.37	71.92	-5.26	18.12457046
Class 5: 240 to 300 Days							0	0
Class 6: 300 to 330 Days							0	0
Class 7: 330 to 365 Days							0	0
TOTAL	**307.38**	**237.58**	**3976.08**	**4930.50**	**4001.67**	**6978.69**	**-281.79**	**1810.60**

% Exotics	F.S.V	Hydroperiods	Crayfish & Fish g/m^2
0-25	1	Class 1 (0-60 days)	0.31
25-50	0.64	Class 2 (60-120 days)	0.62
50-75	0.37	Class 3 (120-180 days)	1.32
75-90	0.03	Class 4 (180-240 days)	2.34
>90	0.03	Class 5 (240-300 days)	2.93
		Class 6 (300-330 days)	3.36
		Class 7 (330-365 days)	3.63

IMPACT AREA

Hydroperiods	Acres	% exotics	F.S.V	m^2	m^2 suitable	crayfish & fish g/m^2	available biomass	32.5% consum.	Biomass (kg)
Class 3 (120-180 days)	95.69	0-25	1	387,245.28	387,245.28	1.32	511,163.77	166,128.22	166.13
Class 3 (120-180 days)	14.73	25-50	0.64	59,610.44	38,150.68	1.32	50,358.90	16,366.64	16.37
Class 3 (120-180 days)	56.50	50-75	0.37	228,648.32	84,599.88	1.32	111,671.84	36,293.35	36.29
Class 3 (120-180 days)	135.20	75-90	0.03	547,137.23	16,414.12	1.32	21,666.63	7,041.66	7.04
Class 4 (180-240 days)	1.87	50-75	0.37	7,567.65	2,800.03	2.34	6,552.07	2,129.42	2.13
Class 4 (180-240 days)	0.73	25-50	0.64	2,954.22	1,890.70	2.34	4,424.24	1,437.88	1.44
Class 4 (180-240 days)	2.66	0-25	1	10,764.68	10,764.68	2.34	25,189.36	8,186.54	8.19
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
TOTAL	**307.38**								**237.58**

PRESERVE AREA (PRE)

Hydroperiods	Acres	% exotics	F.S.V	m^2	m^2 suitable	crayfish & fish g/m^2	available biomass	32.5% consum.	Biomass (kg)
Class 3 (120-180 days)	2055.59	0-25	1	8,318,711.67	8,318,711.67	1.32	10,980,699.40	3,568,727.31	3568.73
Class 3 (120-180 days)	726.89	25-50	0.64	2,941,631.51	1,882,644.17	1.32	2,485,090.30	807,654.35	807.65
Class 3 (120-180 days)	764.26	50-75	0.37	3,092,863.16	1,144,359.37	1.32	1,510,554.37	490,930.17	490.93
Class 3 (120-180 days)	405.97	75-90	0.03	1,642,909.03	49,287.27	1.32	65,059.20	21,144.24	21.14
Class 4 (180-240 days)	7.69	0-25	1	31,120.45	31,120.45	2.34	72,821.86	23,667.10	23.67
Class 4 (180-240 days)	5	25-50	0.64	20,234.37	12,949.99	2.34	30,302.99	9,848.47	9.85
Class 4 (180-240 days)	7.21	50-75	0.37	29,177.95	10,795.84	2.34	25,262.27	8,210.24	8.21
Class 4 (180-240 days)	3.47	75-90	0.03	14,042.65	421.28	2.34	985.79	320.38	0.32
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
TOTAL	**3976.08**								**4930.50**

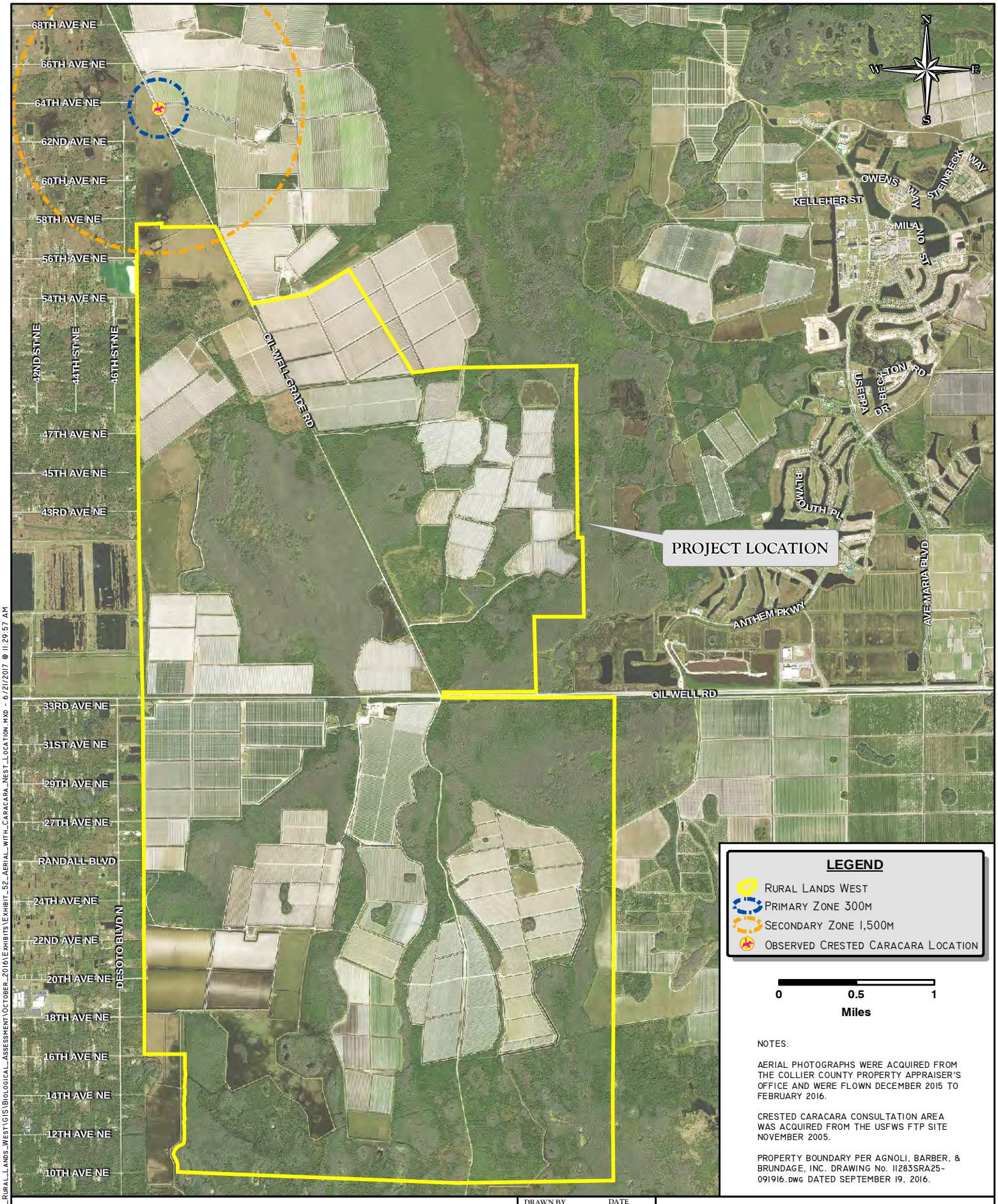
PRESERVE AREA (POST)

Hydroperiods	Acres	% exotics	F.S.V	m^2	m^2 suitable	crayfish & fish g/m^2	available biomass	32.5% consum.	Biomass (kg)
Class 3 (120-180 days)	3978.3	0-25	1	16,099,674.86	16,099,674.86	1.32	21,251,570.81	6,906,760.51	6906.76
Class 4 (180-240 days)	23.37	0-25	1	94,575.42	94,575.42	2.34	221,306.49	71,924.61	71.92
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
			FALSE	0.00	0.00	FALSE	0.00	0.00	0.00
TOTAL	**4001.67**								**6978.69**

Total Biomass within Existing Footprint	**237.6**		
Total Biomass within Preserve Area Pre-Enhancement	**4930.5**	**Net Change**	**1810.6**
Total Biomass within Preserve Area Post-Enhancement	**6978.7**		

EXHIBIT 52

AERIAL WITH CARACARA NEST LOCATION



LEGEND

- Rural Lands West
- Primary Zone 300m
- Secondary Zone 1,500m
- Observed Crested Caracara Location

0 0.5 1

Miles

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED FROM THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE AND WERE FLOWN DECEMBER 2015 TO FEBRUARY 2016.

CRESTED CARACARA CONSULTATION AREA WAS ACQUIRED FROM THE USFWS FTP SITE NOVEMBER 2005.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. 11283SRA25-091916.DWG DATED SEPTEMBER 19, 2016.

J:\2005\05CEN1481\00_RURAL_LANDS_WEST\GIS\BIOLOGICAL_ASSESSMENT\OCTOBER_2016\EXHIBITS\EXHIBIT_52_AERIAL_WITH_CARACARA_NEST_LOCATION.MXD - 6/21/2017 @ 11:29:57 AM

EXHIBIT 52. AERIAL WITH CARACARA NEST LOCATION
RURAL LANDS WEST

DRAWN BY	DATE
H.H.,W.C.	10/25/16
REVIEWED BY	DATE
S.R.	10/25/16
REVISED	DATE

Passarella & Associates, Inc. Consulting Ecologists

Vero Beach, FW4 <verobeach@fws.gov>

[EXTERNAL] SAJ-2018-01385 Finley (UNCLASSIFIED)

1 message

Campbell, Erin M CIV USARMY CESAJ (USA) <Erin.M.Campbell@usace.army.mil> Fri, Sep 20, 2019 at 1:28 PM
To: "verobeach@fws.gov" <verobeach@fws.gov>
Cc: Tyler King <tking@dexbender.com>

CLASSIFICATION: UNCLASSIFIED

Please see the attached formal consultation request for 667 acres.

Thank you,

Erin Campbell

Project Manager
U.S. Army Corps of Engineers
1520 Royal Palm Square Blvd. Suite 310
Fort Myers, FL 33919
239-334-1975

My telework days are Tuesday and Friday.

All applications must be made via the ENG 4345 form and submitted to SF.New.Applications@usace.army.mil.

Download the ENG 4345 application form here: http://www.saj.usace.army.mil/Portals/44/docs/regulatory/sourcebook/permitting/forms/Applications/Eng_Form_4345_DEC_2014.pdf

CLASSIFICATION: UNCLASSIFIED

20190919 FWS Formal Consult with attachments.pdf
13309K

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

September 19, 2019

REPLY TO ATTENTION OF

Regulatory Division
West Permits Branch
Fort Myers Permits Section
SAJ-2018-01385(SP-EMC)

Roxanna Hinzman, Field Supervisor
South Florida Ecological Services Office
US Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960

Dear Ms. Hinzman:

Mr. Thomas Finley of Winchester Land, LLC. has applied for a Department of the Army permit to impact 667 acres of former mining land, including impacts to 75.55 acres of federally jurisdictional waters, for the construction of a residential and commercial community with 1,500 single family and 300 multifamily units, 45,00 sq.ft. of commercial units and 18,000 sq.ft. of government/institutional units. The project site is located in Section 16, Township 48 South, Range 28 East, at 4697 Oil Well Road, Naples, Charlotte County, Florida. The application has been assigned the file number SAJ-2018-01385.

The U.S. Army Corps of Engineers (Corps) has completed its evaluation of the impacts the work may have on species and/or any designated critical habitat protected by the Endangered Species Act (ESA). Based on the enclosed supporting documents (Applicant's Biological Assessment (BA), and project plans), the Corps has determined that the proposed work **may affect, and is likely to adversely affect** the following species identified in Table 1, below. Additionally, the Corps has determined that the proposed work **may affect, but is not likely to adversely affect** the following species identified in Table 1, below.

Table 1. Affected species and CH, which occur in Florida:

Common Name	Latin Name	Effect Determination	Status	Date of Listing	Federal Register Notice of Species Listing	Date of CH Designation	Federal Register Notice of Designated Critical Habitat
Bat, Florida Bonneted	*Eumops floridanus*	NLAA	E	10/2/2013	78 FR 61003 61043	N/A	
Panther, Florida	*Puma concolor coryi*	MA	E	3/11/1967	32 FR 4001	N/A	
Jay, Florida Scrub	*Aphelocoma coerulescens*	NLAA	T	6/3/1987	52 FR 20715 20719	N/A	
Stork, Wood	*Mycteria americana*	NLAA	E	6/30/2014	79 FR 37077 37103	N/A	
Kite, Everglade Snail	*Rostrhamus sociabilis plumbeus*	NLAA	E	3/11/1967	32 FR 4001	9/22/1977	42 FR 47840 47845

Snake, Eastern Indigo	*Drymarchon corais couperi*	MA	T	1/31/1978	43 FR 4026 4029	N/A	
Acronyms							
T	Threatened		MA = May Affect, Likely to Adversely Affect		NLAA = Not Likely to Adversely Affect		
E	Endangered						
C	Candidate Species or Proposed for Listing						

To facilitate consultation, and in accordance with 50 CFR §402.14(c), the following information is provided via the supporting documents referenced above:

1) A description of the action being considered (see attached Public Notice and Project Plans).
2) A description of the specific area that may be affected by the action (see attached Public Notice, Biological Assessment, and Traffic Impact Study).
3) A description of any listed species or critical habitat that may be affected by the action (see Table, above).
4) A description of the manner in which the action may affect any listed species or critical habitat, and an analysis of any cumulative effects (see attached Biological Assessment).

To meet our responsibilities under Section 7(a)2 of the ESA, the Corps requests that you initiate consultation upon receipt of this request, provide a response within 30 days of receipt of this request stating what additional information is needed in order to meet the requirements of 50 CFR §402.14(c), or notify this office upon initiation of formal consultation.

If you have any questions regarding this correspondence, please contact Erin Campbell at the letterhead address, by telephone at 239-334-1975, ext. 0013 or by email at Erin.M.Campbell@usace.army.mil.

Sincerely,

Muriel M. Blaisdell, Chief
Fort Myers Permits Section

Enclosure:

Public Notice with Project Plans
Traffic Impact Study
Federally Listed Species Assessment

Cc (by electronic mail):

Tyler King, DexBender, tking@dexbender.com
Vero Beach ESO, verobeach@fws.gov

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

REPLY TO ATTENTION OF

September 20, 2019

Regulatory Division
West Permits Branch
Fort Myers Permits Section

PUBLIC NOTICE

Permit Application Number SAJ-2018-01385 (SP-EMC)

TO WHOM IT MAY CONCERN: The Jacksonville District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) as described below:

APPLICANT: Winchester Land, LLC
c/o Mr. Thomas Finley
100 North Tampa Street, Suite 3700
Tampa, FL 33602

WATERWAY AND LOCATION: The project would affect waters of the United States associated with the Faka Union Canal drainage basin. The project site is located in Section 16, Township 48 South, Range 28 East, at 4697 Oil Well Road, Naples, Charlotte County, Florida.

Directions to the site are as follows: Take I-75 south to exit 111 (Immokalee Road/CR 846) and go east on Immokalee Road for 3.4 miles, then turn right (east) on Oil Well Road/CR 858. The project is one mile east of Everglades Blvd. and north of Oil Well Road.

APPROXIMATE CENTRAL COORDINATES:

Latitude 26.30077°
Longitude -81.52111°

PROJECT PURPOSE:

Basic: The basic project purpose is residential development.

Overall: The overall project purpose is to construct a single-family residential project with access roads, driveways, utilities, stormwater management systems, and an on-site wetland preserve within the Rural Lands Study Area, Collier County, Florida

EXISTING CONDITIONS: The project area consists of approximately 667 acres. The majority of the site consists of improved pastures, borrow areas, non-jurisdictional waters, and disturbed land. The onsite vegetation consists primarily of various upland

grasses. The existing area surrounding the project area consists of a combination of roadways and developed residential properties to the north, west, and south with agricultural fields to the east.

BACKGROUND: The Corps issued an Approved Jurisdictional Determination (SAJ-2018-01385 (JD-RWR) on March 28, 2019 for this parcel.

PROPOSED WORK: The applicant seeks authorization to discharge dredged and or fill material into 75.55 acres of jurisdictional waters consisting of drainage ditched and borrow pits for the construction of a single family residential commercial development with associated attendant features within the 667 acre parcel.

AVOIDANCE AND MINIMIZATION INFORMATION – The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

Of the 75.55 acres of jurisdictional waters, only 11.79 acres (15%) of waters will be filled. The remaining 63.76 acres of impacts are for reshaping the existing waters.

COMPENSATORY MITIGATION – The applicant has provided the following explanation why compensatory mitigation should not be required:

The proposed impacts are primarily to open water areas created by previous mining activities with no emergent vegetation. No jurisdictional wetlands are proposed to be impacted and therefore no compensatory wetland mitigation is proposed.

CULTURAL RESOURCES:

The Corps is not aware of any known historic properties within the permit area. By copy of this public notice, the Corps is providing information for review. Our final determination relative to historic resource impacts is subject to review by and coordination with the State Historic Preservation Officer and those federally recognized tribes with concerns in Florida and the Permit Area.

ENDANGERED SPECIES:

The Corps has determined the proposed project may affect the Florida panther (*Puma concolor coryi*) and the eastern indigo snake (*Drymarchon couperi*). The Corps will request initiation of formal consultation with the Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act by separate letter.

The Corps has determined the proposed project may affect, but is not likely to adversely affect the Florida bonneted bat (*Eumops floridanus*), Florida scrub jay (*Aphelocoma coerulescens*), Everglades snail kite (*Rostrhamus sociabilis plumbeus*) and wood stork (*Mycteria americana*). The Corps will request initiation of informal consultation with the

Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act by separate letter.

ESSENTIAL FISH HABITAT (EFH): The project would only impact freshwater aquatic features; therefore, the Corps has determined that no substantial adverse impacts to EFH will result from the proposed action.

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The jurisdictional line has been verified by Corps personnel.

AUTHORIZATION FROM OTHER AGENCIES: Water Quality Certification may be required from the Florida Department of Environmental Protection and/or one of the state Water Management Districts.

COMMENTS regarding the potential authorization of the work proposed should be submitted in writing to the attention of the District Engineer through the Fort Myers Permits Section, 1520 Royal Palm Square Blvd., Suite 310, Fort Myers, Florida 33919 within 21 days from the date of this notice.

The decision whether to issue or deny this permit application will be based on the information received from this public notice and the evaluation of the probable impact to the associated wetlands. This is based on an analysis of the applicant's avoidance and minimization efforts for the project, as well as the compensatory mitigation proposed.

QUESTIONS concerning this application should be directed to the project manager, Erin Campbell, in writing at the Fort Myers Permits Section, 1520 Royal Palm Square Blvd., Suite 310, Fort Myers, Florida 33919 or by electronic mail at erin.m.campbell@usace.army.mil; or by telephone at (239) 334-1975 ext. 0013.

IMPACT ON NATURAL RESOURCES: Coordination with U.S. Fish and Wildlife Service, Environmental Protection Agency (EPA), the National Marine Fisheries Services, and other Federal, State, and local agencies, environmental groups, and concerned citizens generally yields pertinent environmental information that is instrumental in determining the impact the proposed action will have on the natural resources of the area.

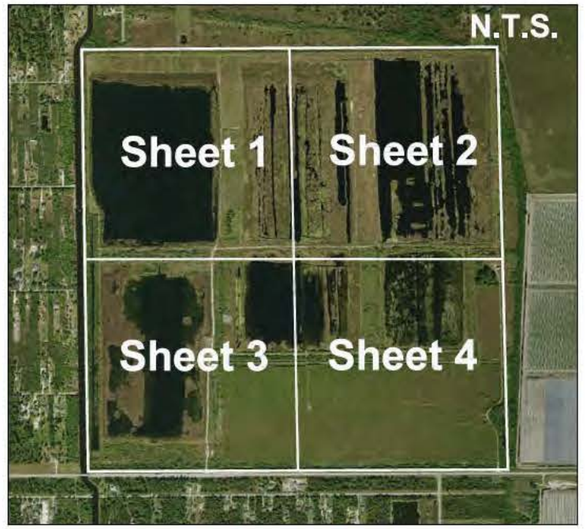
EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion,

recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

The US Army Corps of Engineers (Corps) is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

COASTAL ZONE MANAGEMENT CONSISTENCY: In Florida, the State approval constitutes compliance with the approved Coastal Zone Management Plan. In Puerto Rico, a Coastal Zone Management Consistency Concurrence is required from the Puerto Rico Planning Board. In the Virgin Islands, the Department of Planning and Natural Resources permit constitutes compliance with the Coastal Zone Management Plan.

REQUEST FOR PUBLIC HEARING: Any person may request a public hearing. The request must be submitted in writing to the District Engineer within the designated comment period of the notice and must state the specific reasons for requesting the public hearing.



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SCALE FEET

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

FLUCCS	Description	Acreage
211	Improved Pastures	112.99 ac.
437	Australian Pines	0.84 ac.
510D	Ditches	11.84 ac.
619	Exotic Wetland Hardwoods	1.15 ac.
740	Disturbed Land	125.57 ac.
742	Borrow Areas	226.81 ac.
742V	Vegetated Borrow Areas	164.49 ac.
743	Berms	11.10 ac.
	Total	654.79 ac.

Notes:
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3. *FLUCCS legend includes overall site acreages.*
4. *Interior berms are not depicted.*

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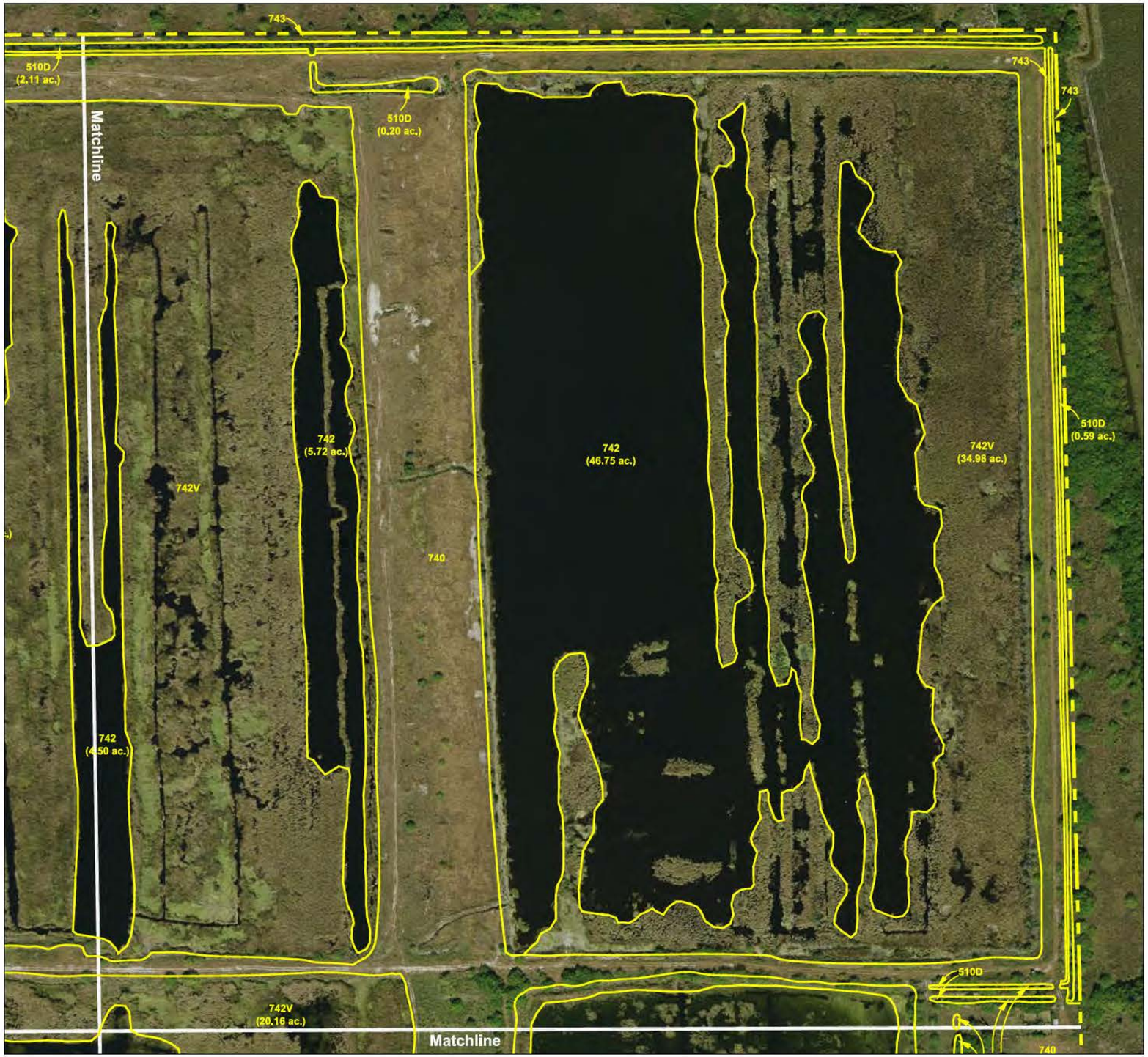
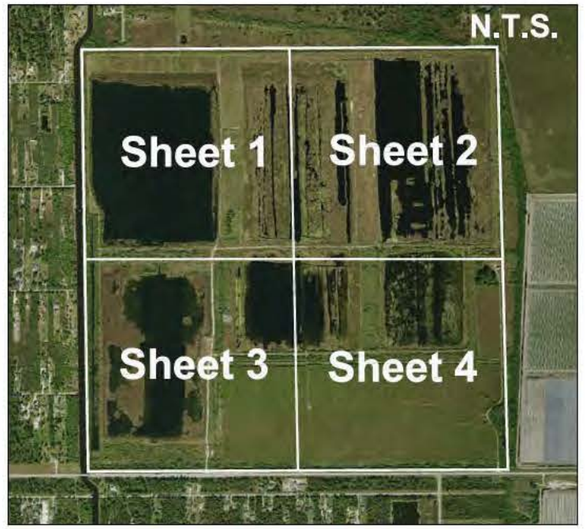
April 05, 2019 11:07:29 a.m.
Drawing: NEAL16PLAN–COE.DWG

Vegetation Map – Sheet 1

Hyde Park

DEXBENDER
ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680





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Drawing: NEAL16PLAN-COE.DWG

Vegetation Map - Sheet 2

Hyde Park

DEXBENDER ENVIRONMENTAL CONSULTING
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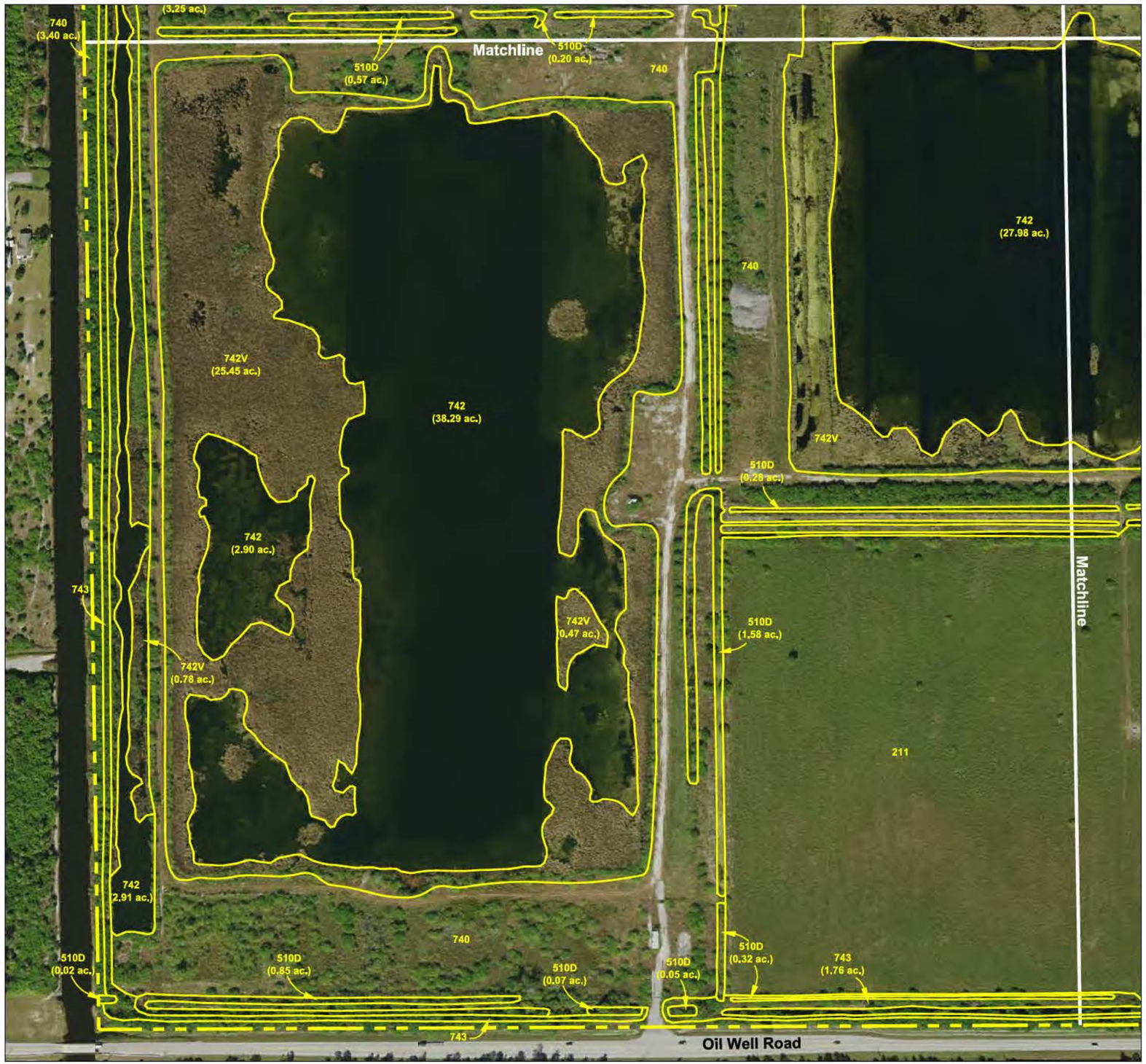

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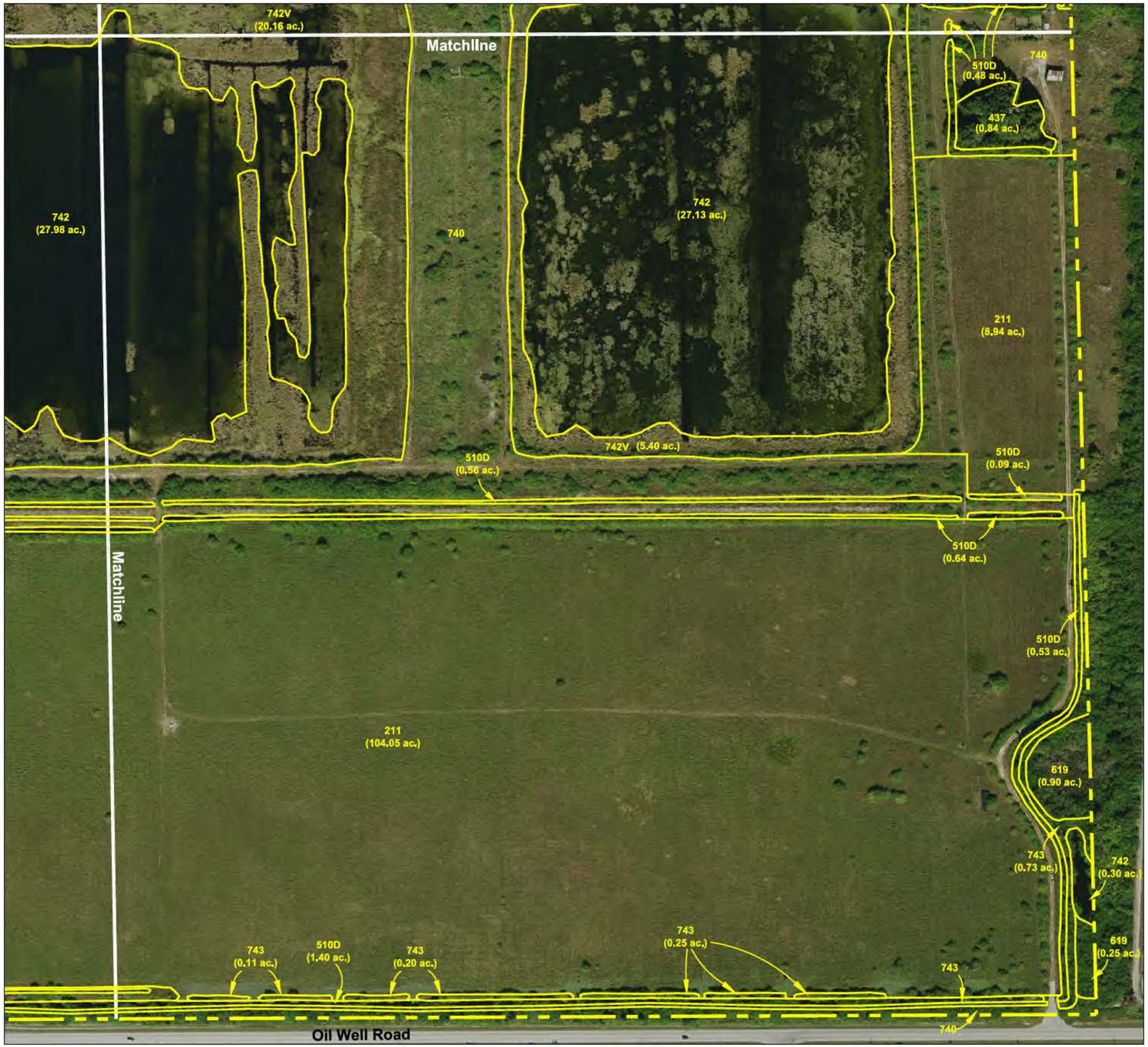
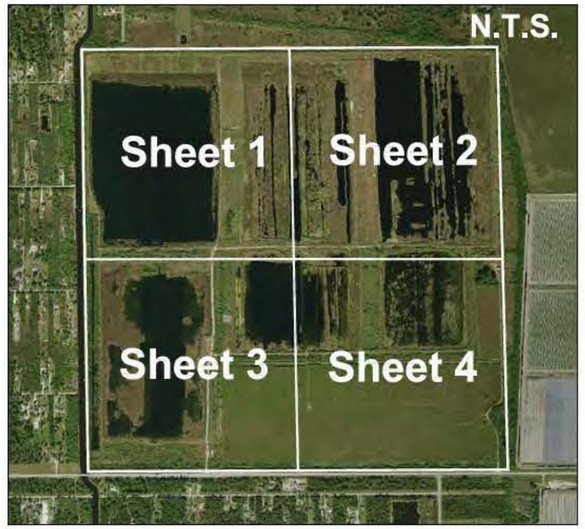
Vegetation Map - Sheet 3

Hyde Park

DEXBENDER
ENVIRONMENTAL CONSULTING
FORT MYERS 239–334–3680





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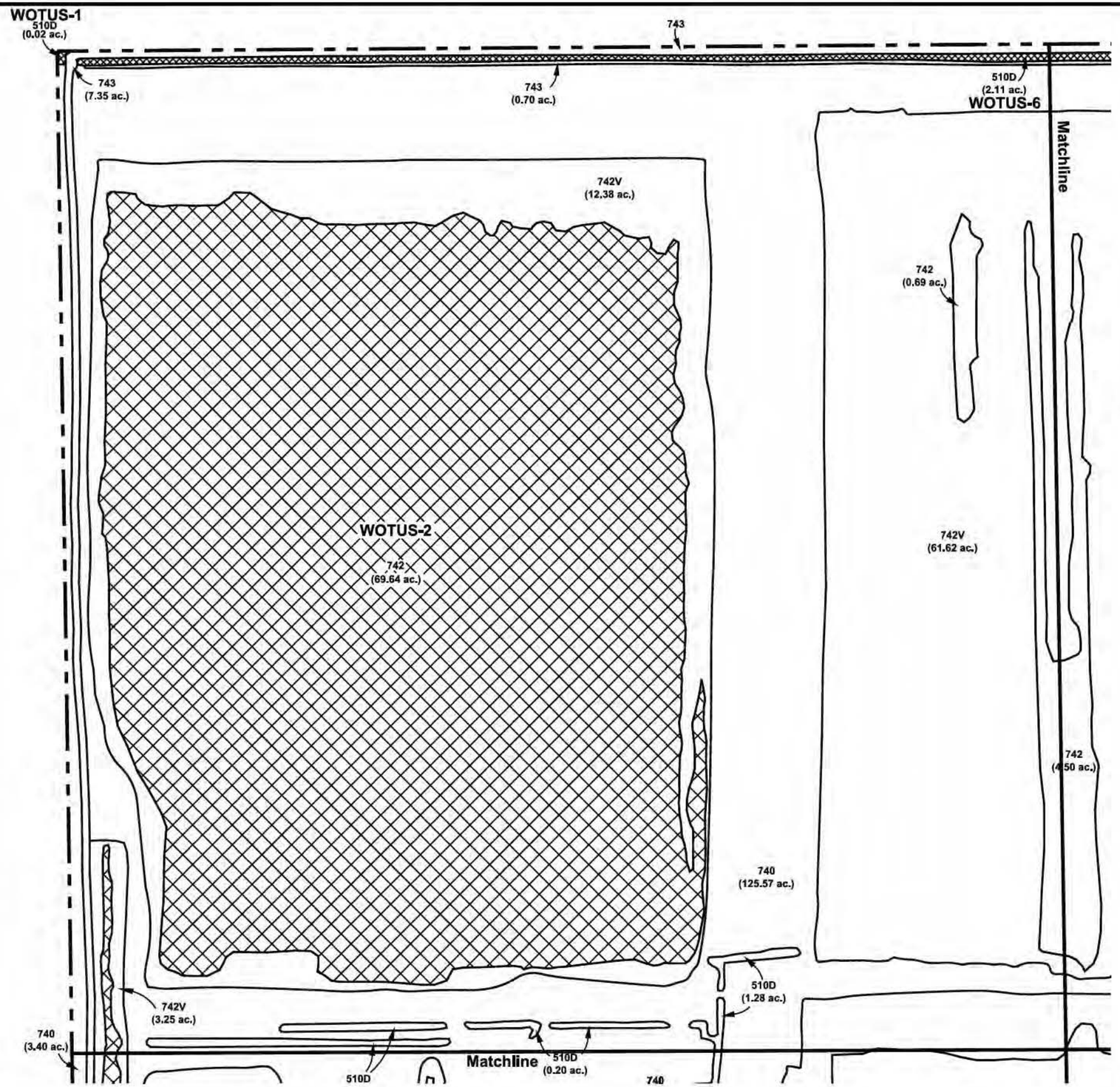
Drawing: NEAL16PLAN-COE.DWG

Vegetation Map - Sheet 4

Hyde Park

DEXBENDER
ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680



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COE Jurisdictional Waters of the United States (WOTUS) (75.55 ac.)

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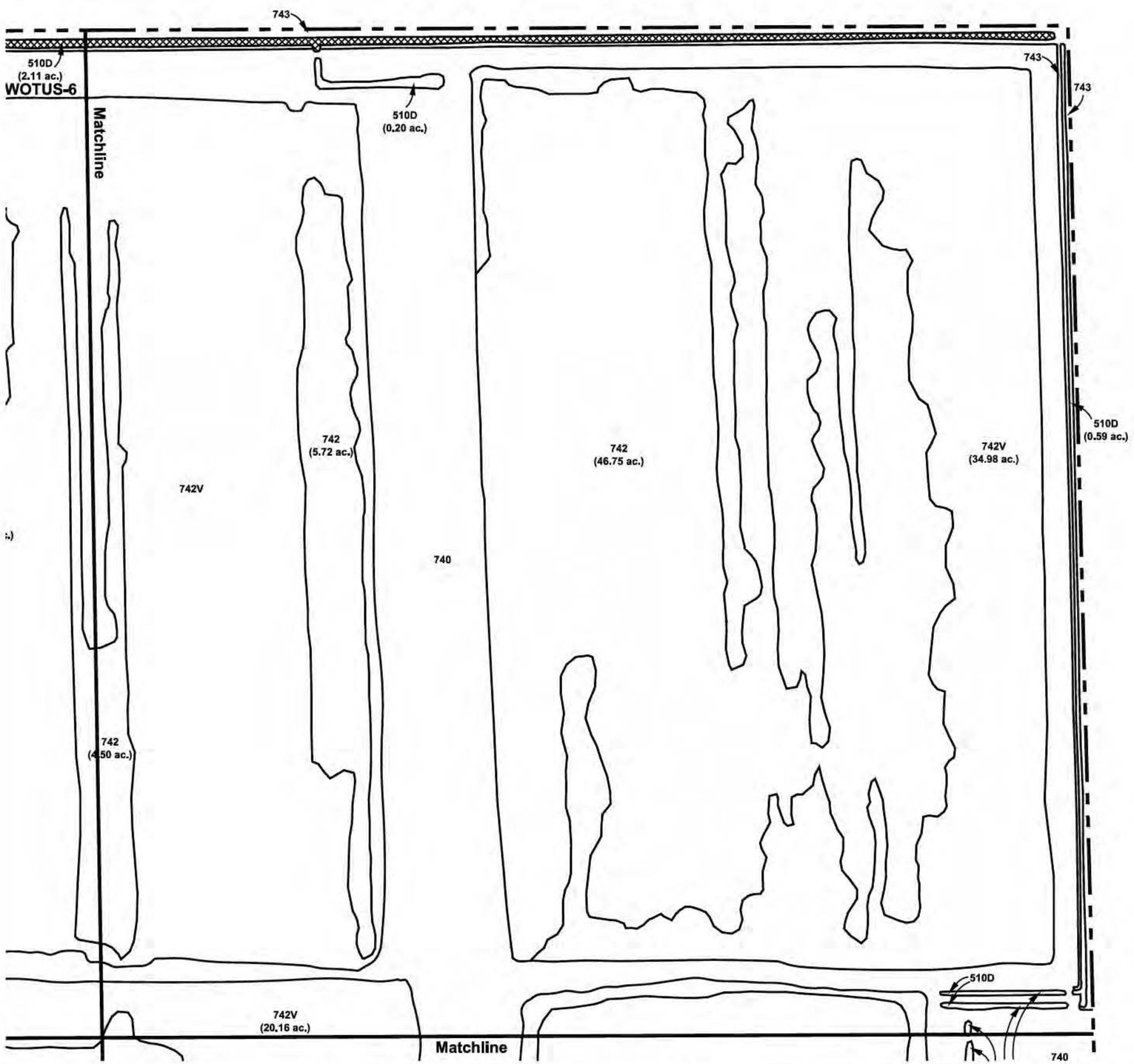
April 05, 2019 11:07:29 a.m.
Drawing: NEAL16PLAN-COE.DWG

COE Waters of the United States Map - Sheet 1	*Hyde Park*	DEXBENDER ENVIRONMENTAL CONSULTING *FORT MYERS 239-334-3680*



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SECTION: 16
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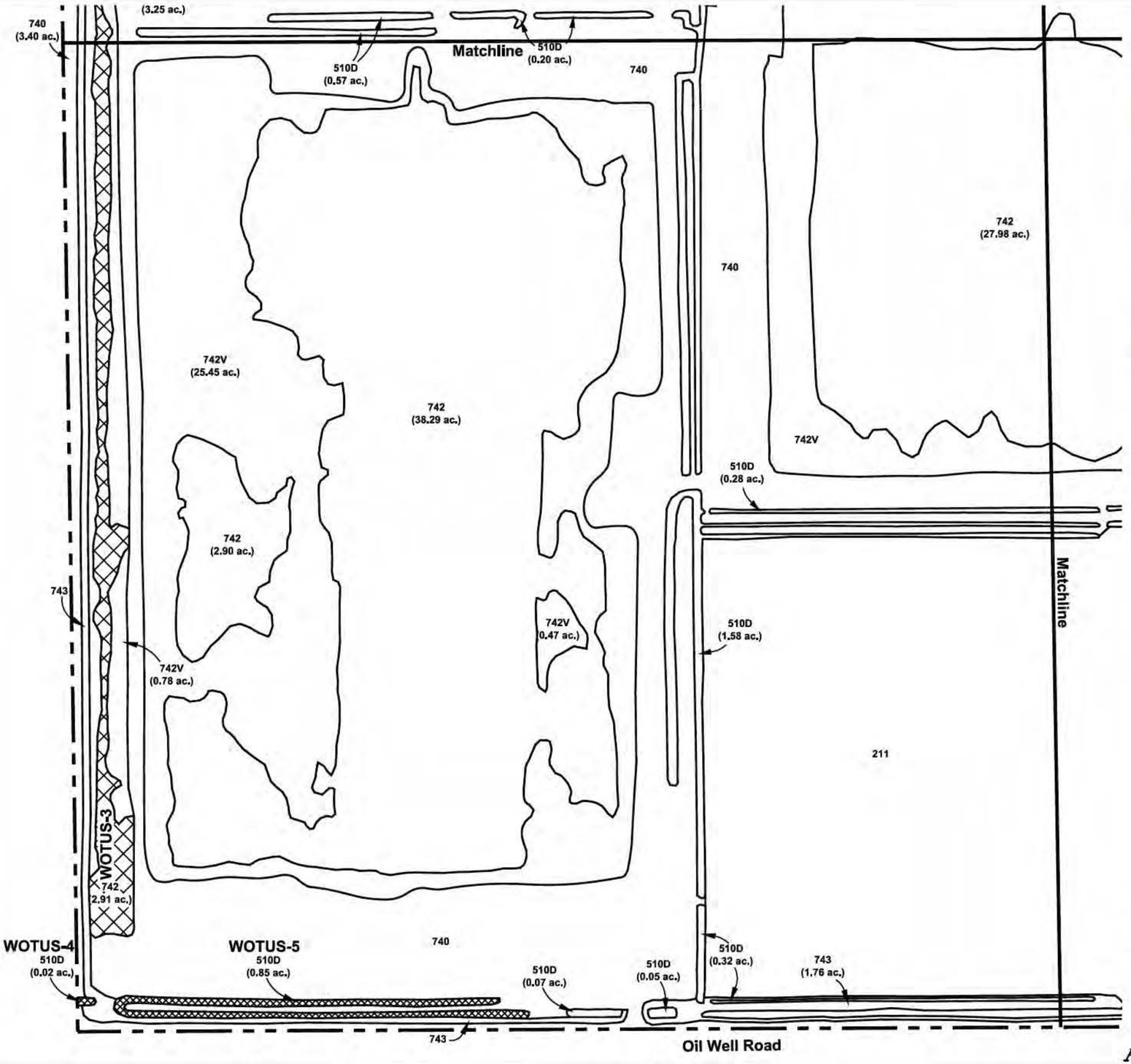
April 05, 2019 11:07:29 a.m.
Drawing: NEAL16PLAN-COE.DWG

COE Waters of the United States Map - Sheet 2

Hyde Park

DEXBENDER
ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680



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SCALE FEET

SECTION: 16
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Drawing: NEAL16PLAN–COE.DWG

COE Waters of the United States Map - Sheet 3

Hyde Park

DEXBENDER
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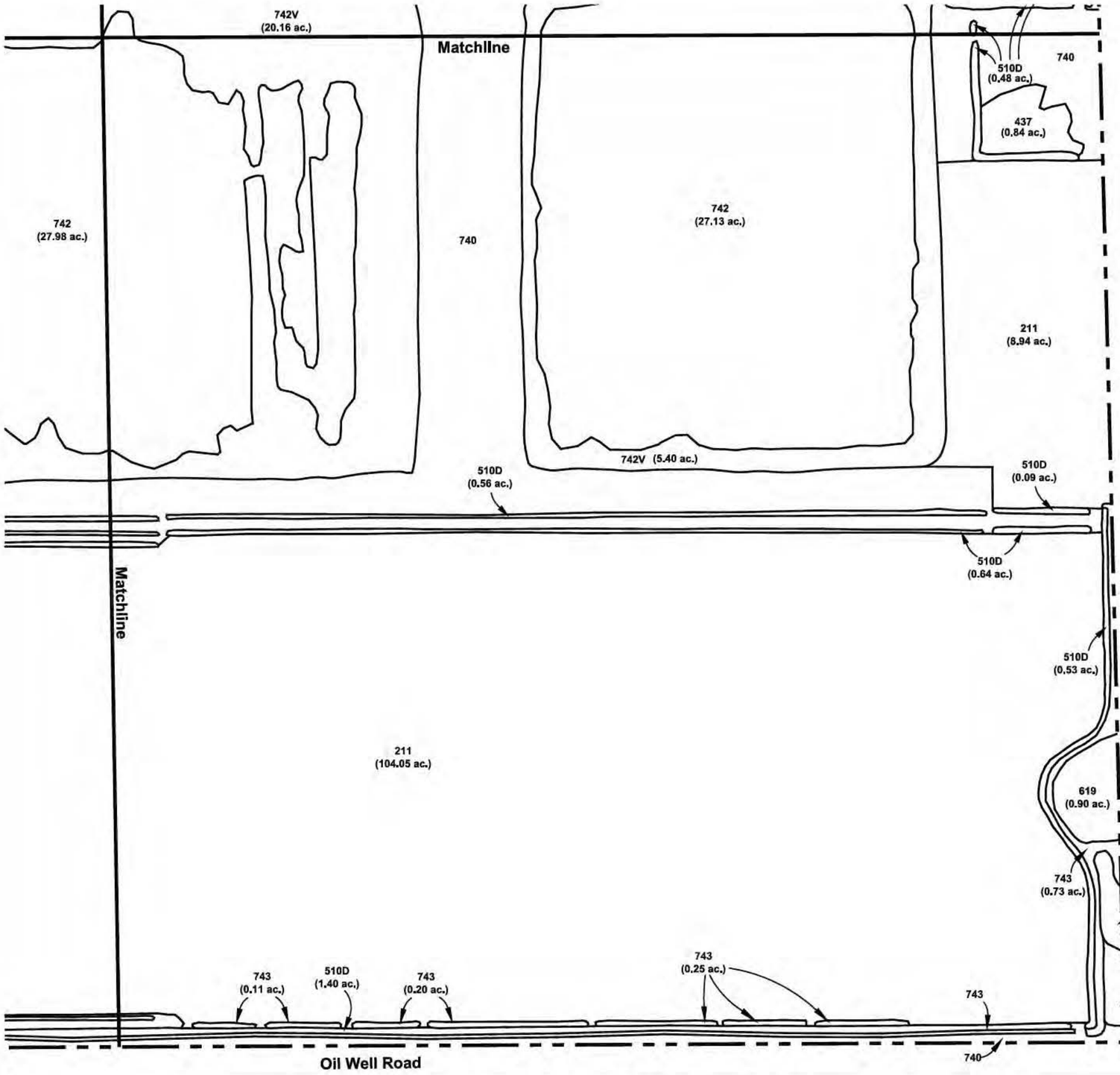

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SCALE FEET

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

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April 05, 2019 11:07:29 a.m.
Drawing: NEAL16PLAN-COE.DWG

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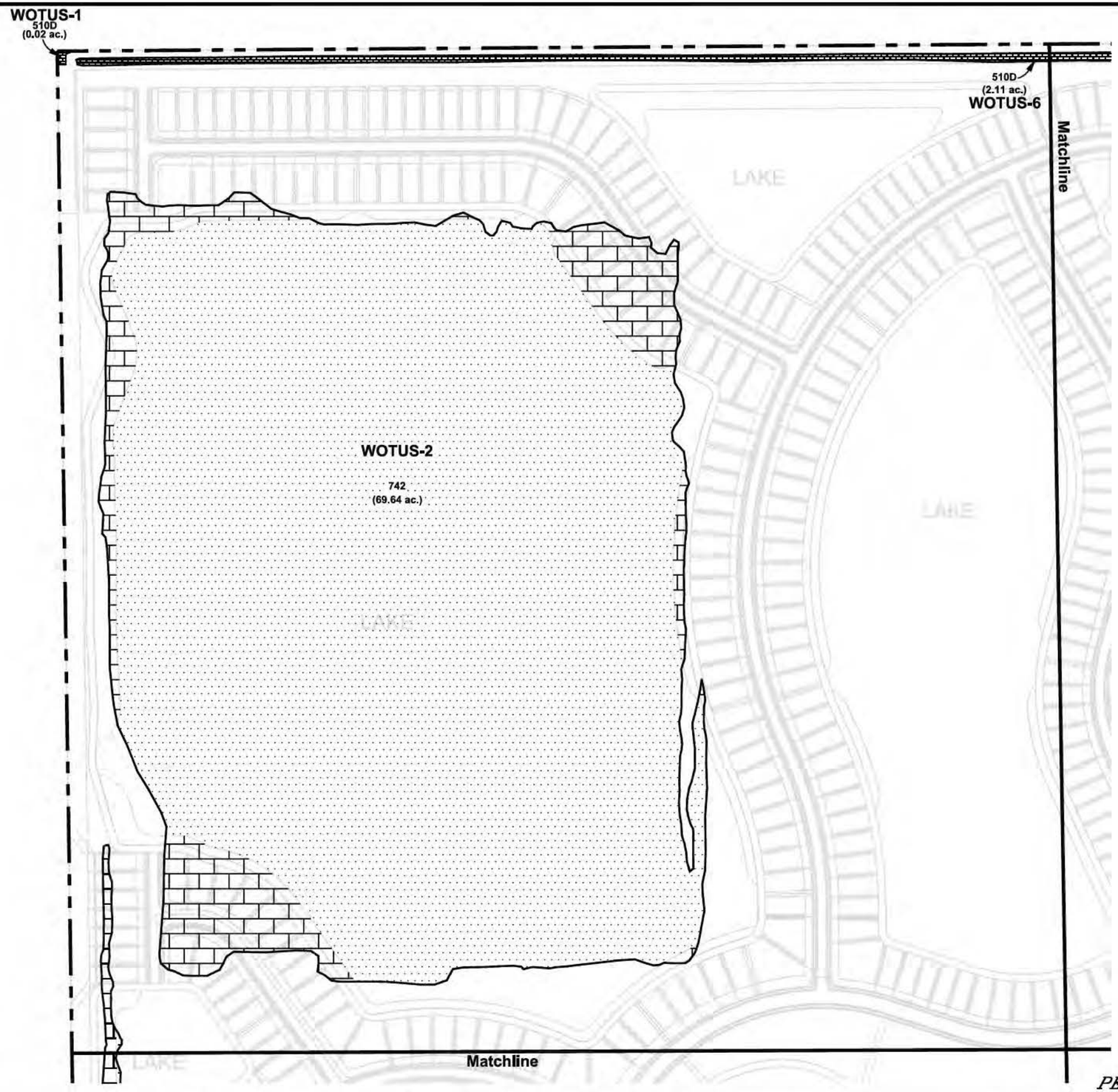
COE Waters of the United States Map - Sheet 4

Hyde Park

DEXBENDER
ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680



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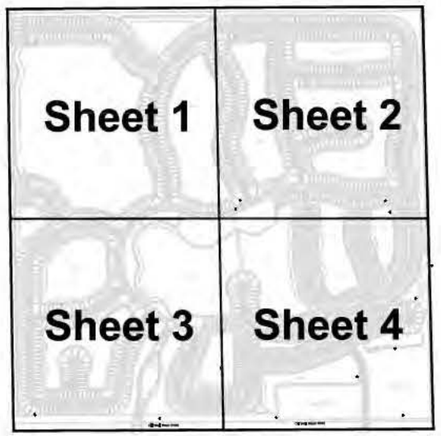

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SCALE FEET

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

FLUCCS	Description	Acreage
510D	Ditches	3.00 ac.
742	Borrow Areas	72.55 ac.
	Total	75.55 ac.

COE Waters of the United States Fill (8.82 ac.)

COE Waters of the United States Excavation (65.86 ac.)

Impacts Associated with Oil Well Road Widening
COE Permit SAJ-2006-07018 (IP-HWB) (WOTUS-4/5, 0.87 ac.)

Notes:
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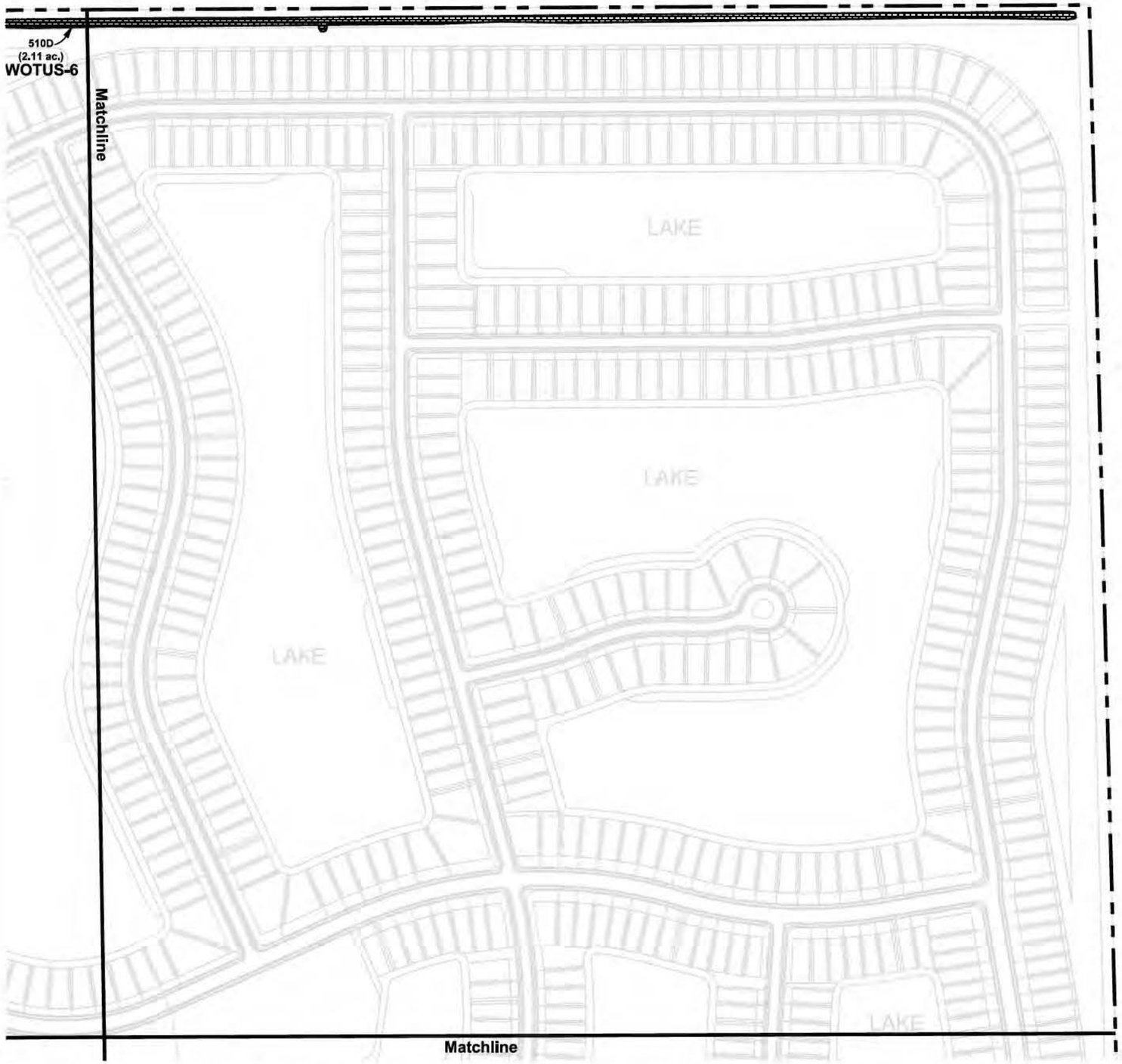
April 17, 2019 1:18:18 p.m.
Drawing: NEAL16IMPACTCOE-0419.DWG

COE Waters of the United States
Impact Map - Sheet 1

Hyde Park

DEXBENDER
ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680



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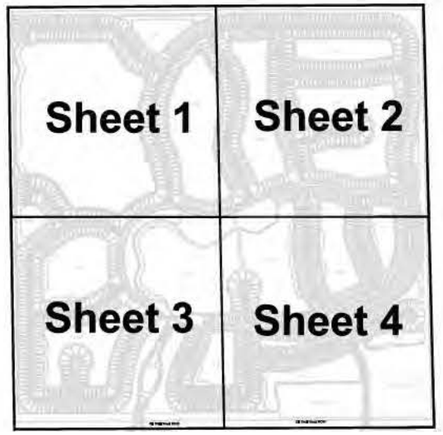

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PERMIT USE ONLY - NOT FOR CONSTRUCTION Drawing: NEAL16IMPACTCOE-0419.DWG
April 17, 2019 1:18:18 p.m.

COE Waters of the United States
Impact Map - Sheet 2

Hyde Park

DEXBENDER
ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680

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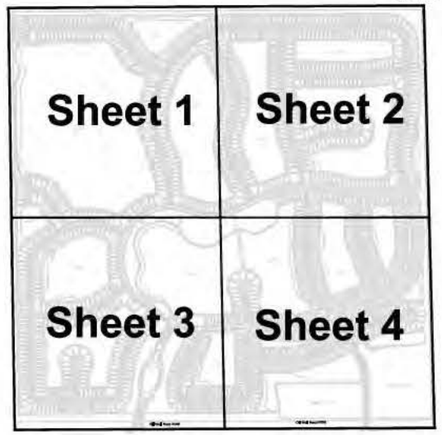

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PERMIT USE ONLY - NOT FOR CONSTRUCTION April 17, 2019 1:18:18 p.m. Drawing: NEAL16IMPACTCOE-0419.DWG

COE Waters of the United States Impact Map - Sheet 3

Hyde Park

DEXBENDER ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680

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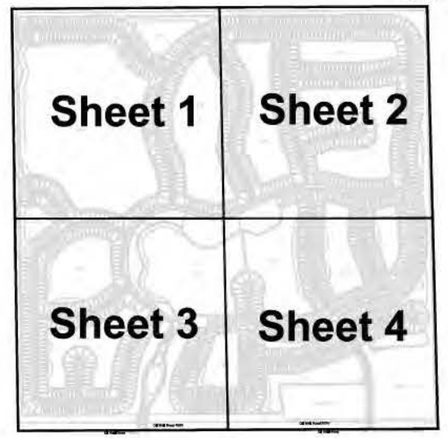

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Drawing: NEAL16IMPACTCOE-0419.DWG

COE Waters of the United States Impact Map - Sheet 4

Hyde Park

DEXBENDER ENVIRONMENTAL CONSULTING
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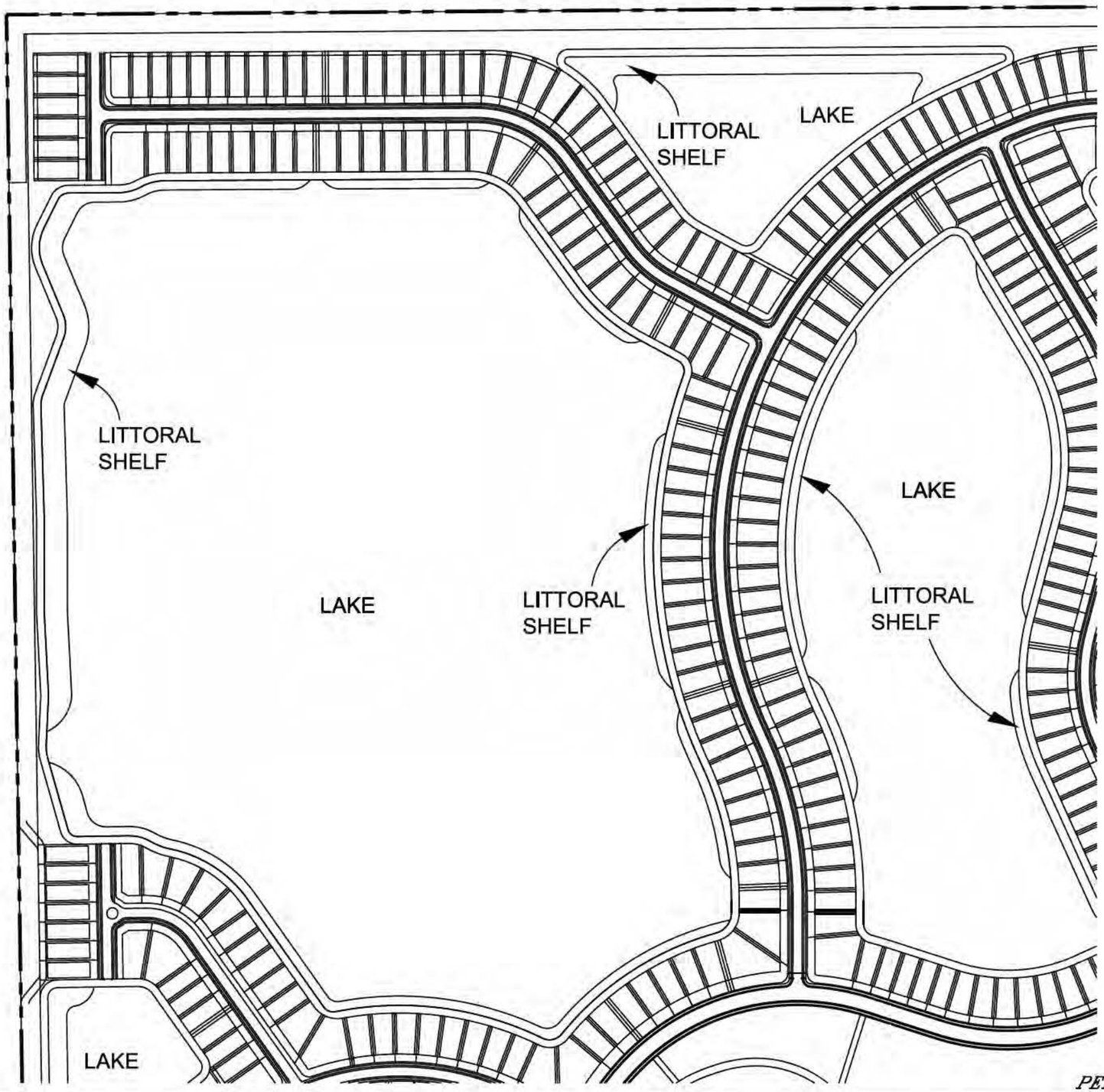

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SCALE FEET

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

N.T.S.

Sheet 1	**Sheet 2**
Sheet 3	**Sheet 4**

Notes: Property boundary and site plan provided by Hole Montes, Inc.

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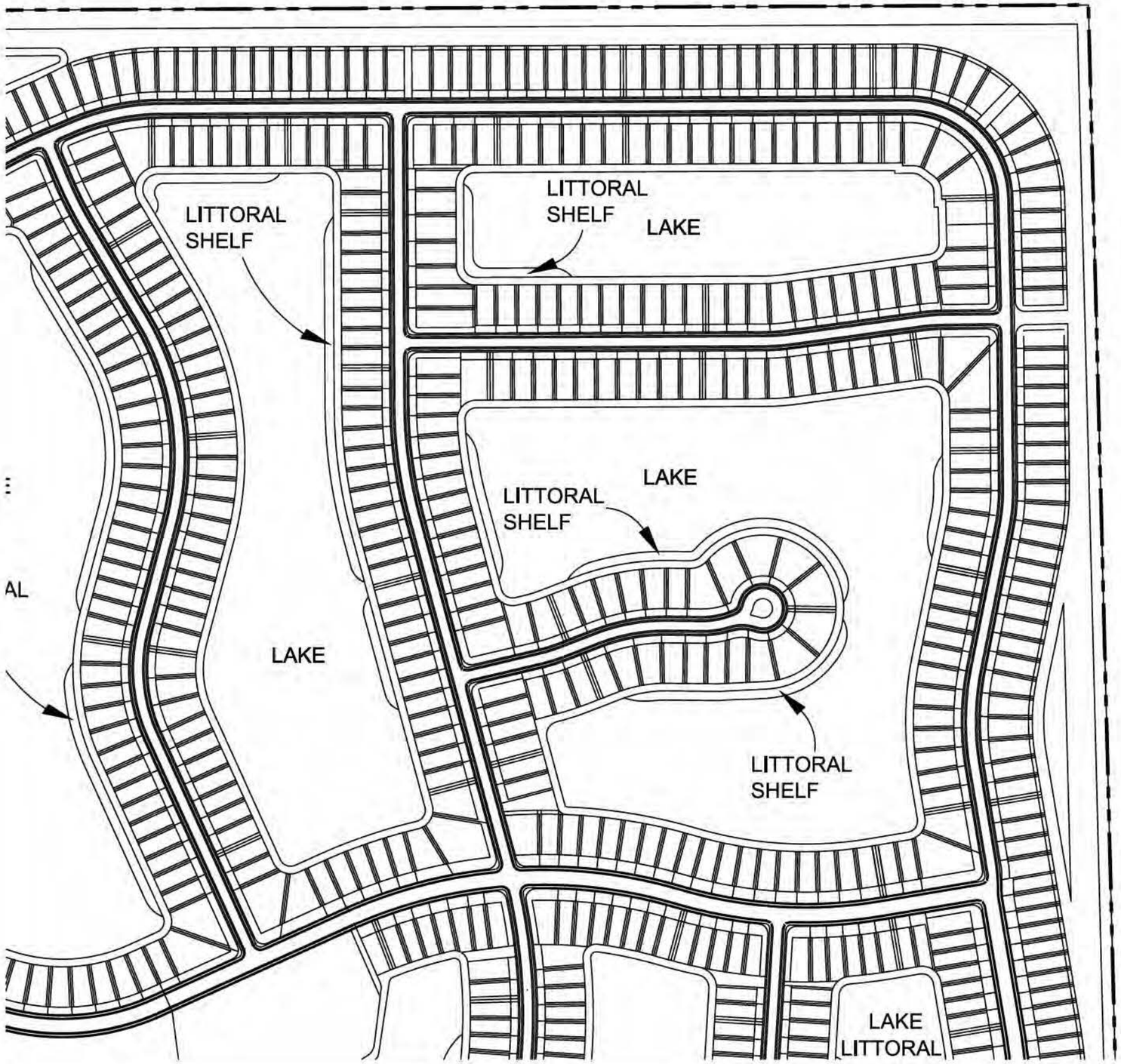
April 17, 2019 11:32:47 a.m.
Drawing: NEAL16PROPCONCOE-0419.DWG

Proposed Conditions Map - Sheet 1

Hyde Park

DEXBENDER
ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680



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SCALE FEET

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

N.T.S.

Sheet 1	Sheet 2
Sheet 3	Sheet 4

Notes: Property boundary and site plan provided by Hole Montes, Inc.

PERMIT USE ONLY – NOT FOR CONSTRUCTION

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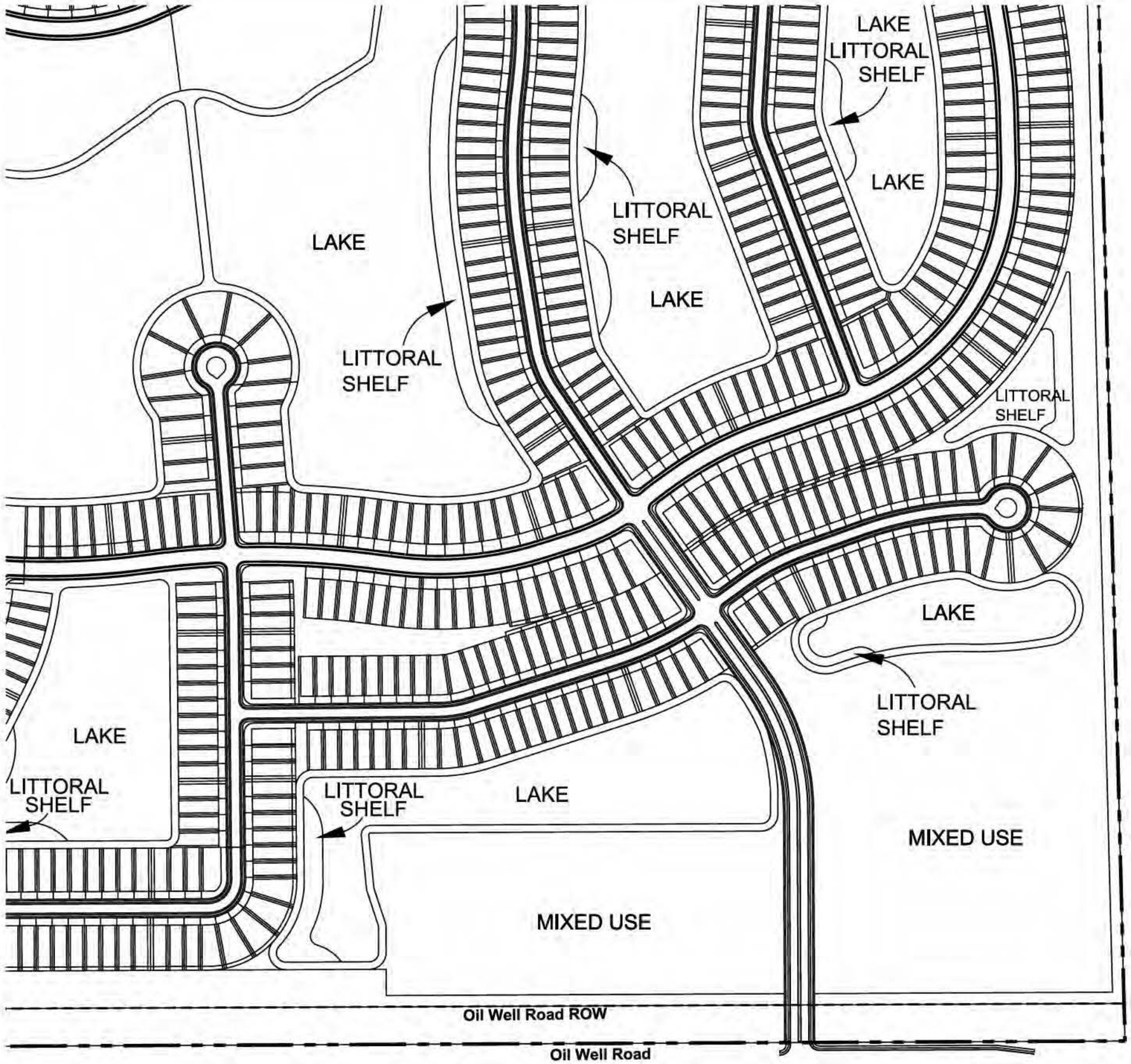
Proposed Conditions Map - Sheet 2	Hyde Park	DexBender Environmental Consulting Fort Myers 239-334-3680



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SCALE FEET

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

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Sheet 1	Sheet 2
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Notes: Property boundary and site plan provided by Hole Montes, Inc.

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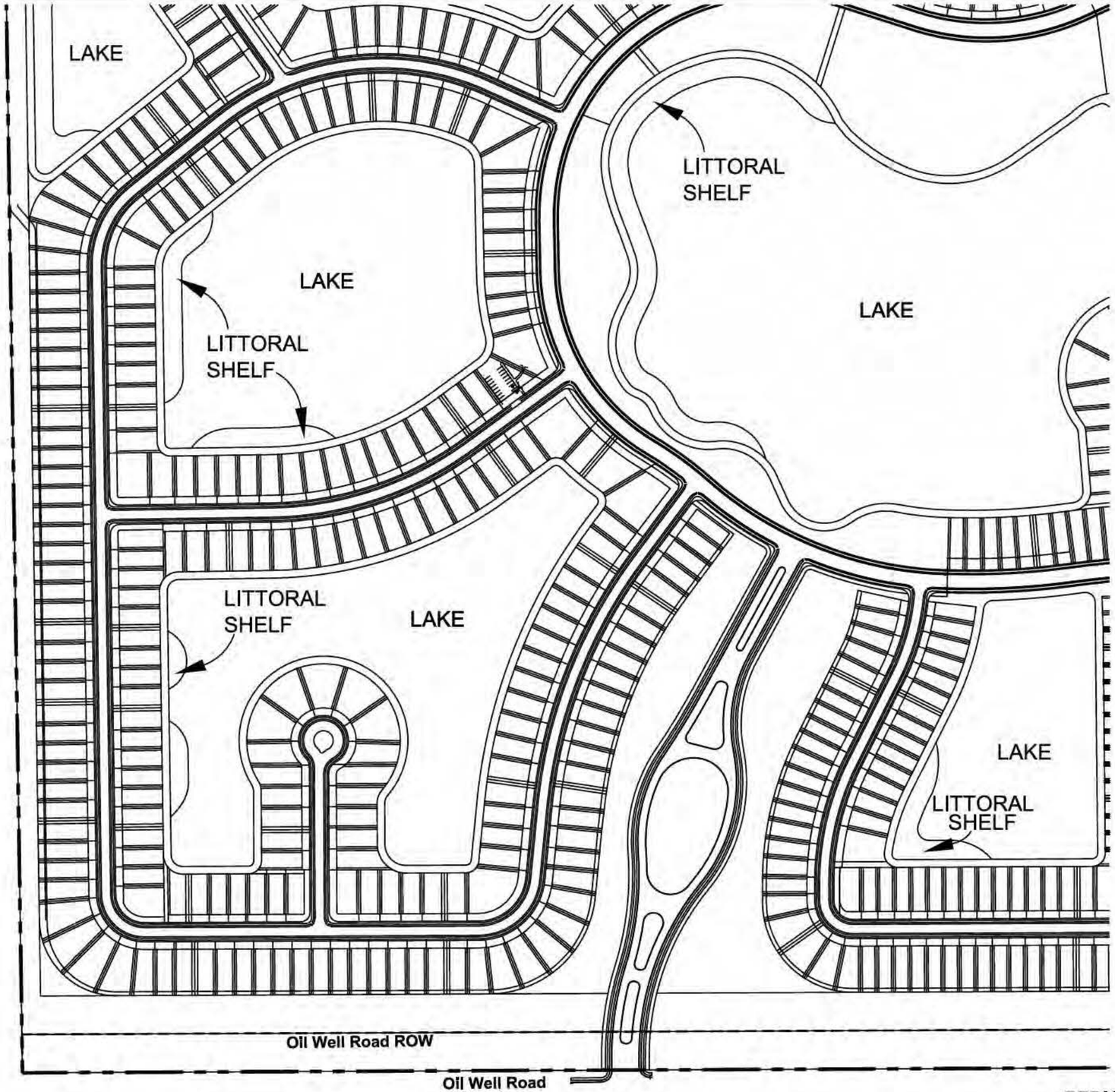
Proposed Conditions Map - Sheet 4	Hyde Park	DexBender Environmental Consulting Fort Myers 239-334-3680



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SCALE FEET

N.T.S.

Sheet 1	Sheet 2
Sheet 3	Sheet 4

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

Notes: Property boundary and site plan provided by Hole Montes, Inc.

PERMIT USE ONLY – NOT FOR CONSTRUCTION

April 17, 2019 11:32:47 a.m.
Drawing: NEAL16PROPCONCOE-0419.DWG

Proposed Conditions Map - Sheet 3 | **Hyde Park**

DEXBENDER ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680

JMB TRANSPORTATION ENGINEERING, INC.

TRAFFIC/TRANSPORTATION ENGINEERING & PLANNING SERVICES

TRAFFIC IMPACT STATEMENT

For

Collier Lakes Village SRA

(Oil Well Road, Collier County, Florida)

June 12, 2018
Revised November 1, 2018

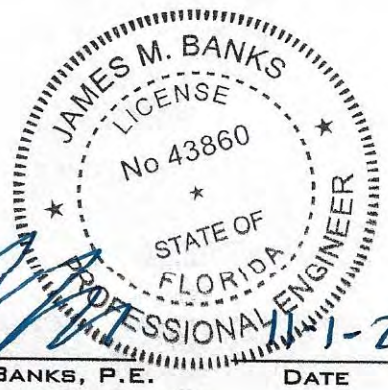
County TIS Review Fees
TIS Methodology Review Fee = $500.00
TIS (Major Study) Review Fee = $1.500.00

Prepared by:

JMB TRANSPORTATION ENGINEERING, INC.
4711 7TH AVENUE SW
NAPLES, FLORIDA 34119

CERTIFICATE OF AUTHORIZATION NO. 27830

(PROJECT NO. 170414)



11-1-2018

JAMES M. BANKS, P.E. — DATE
FLORIDA REG. NO. 43860

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Conclusions

Based upon the findings of this report, it has been determined that Collier Lakes Village SRA will not adversely impact the surrounding road network or cause any roadways to operate below their adopted levels of services. This conclusion is based upon the findings that Collier County's existing plus committed (E + C) road network has adequate capacity to accommodate the site-generated traffic associated with the development of 1,800 dwelling units, 45,000 square feet of neighborhood commercial retail/office and 18,000 square feet of governmental/civic/institutional land uses. Therefore, the project will not be required to fund any off-site roadway improvements/mitigation, other than the payment of more than $13,475,000.00 in road impact fees, which will be used to fund a portion of the costs of area-wide improvements as set forth by Collier County's CIE and Long-Range Transportation Plan (LRTP).

Although Collier Lakes will not adversely impact any roadways, or cause any roadways to operate below their adopted levels of services, and the E + C network will continue to operate at acceptable levels of service at project build-out, the Developer will be required to pay for its portion of "consumed" capacity via payment of road impact fees. As set forth by Collier County's Impact Fee Ordinance, the fees are a pro rata assessment towards the funding of area-wide transportation improvements in order to support new growth. The amount of road impact fees paid per type of land use are determined via a "consumption-based impact fee approach", in which new development is charged based upon the proportion of vehicle-miles of travel (VMT) that each unit of new development is expected to consume of a lane mile of roadway network. The cost of consumed lane mile is based upon current roadway construction costs within Collier County. Therefore, the payment of road impact fees is the project's pro rata share of funding transportation improvements that are deemed necessary to support the demands generated by new growth.

In exchange for receiving road impact fee credits, the Developer will dedicate 100' of right-of-way along the project's southern boundary, which will be needed to widen Oil Well Road. Also, in exchange for receiving road impact fee credits, the Developer will provide stormwater runoff storage capacity for the portion of Oil Well Road in front of the project. By doing so, there will be cost savings to Collier County by reducing the size and/or number of pond sites.

The estimated payment of road impact fees is subject to change pending the project's final build-out schedule, and a portion of the impact fees will be paid in the form of equivalent value contributions (e.g., r/w dedication, stormwater cost savings to the County, etc.).

Planned and/or Committed Area-Wide Transportation Improvements

Based upon the area's existing and forecasted traffic demands, it was determined that the E + C road network will continue to operate at acceptable levels of service for project build-out conditions. However, the "anticipated" traffic demands for that area are subject to change pending the status of other large-scale projects that may become entitled for development (e.g., rural lands west). It is for this reason, Collier County Government has

accelerated the planning and funding of several major roadway improvement projects. Transportation improvements that are planned or have been funded are described below in Table A.

Table A
Planned and/or Committed Area-Wide Transportation Improvements

Transportation Improvement	Status	Notes
Oil Well Road (Everglades-to-Desoto) (widen to 4-lanes or 6 lanes)	Planned	Collier Lakes to set aside 100' r/w and possibly stormwater storage
8th Street Bridge (N/S/ Collector Randall-to-Golden Gate Blvd)	Funded	Reduces traffic demand on Randall Blvd & Immokalee Rd
16th Street Bridge (N/S collector between Randall and Golden Gate)	Funded	Reduces traffic demand on Randall Blvd & Immokalee Rd
Vanderbilt Beach Road Ext (C.R. 951 to 8th street) (New 3-lane road within 6 lane footprint)	Funded	Reduces traffic demand on Randall Blvd, Immokalee Rd & Golden Gate Blvd
Randall Boulevard (Everglades-to-Desoto) (widen to 4-lanes or 6 lanes)	Planned	
Randall Boulevard & Immokalee Road (at-grade & flyover improvements)	Conceptual (PD&E Study)	
Oil Well Road to Randall Connector (S-Curve Connector or Other Options)	Conceptual (PD&E Study)	
Everglades Boulevard (Oil Well-to-Golden Gate) (widen to 4-lanes or 6 lanes)	Planned	
Desoto Boulevard (Oil Well-to-Golden Gate) (widen to 4-lanes or 6 lanes)	Planned	
Desoto Boulevard & Oil Well Road Intersection (at-grade improvements & traffic signal)	Anticipated	Collier Lakes will pay pro rata share towards improvements

Site Access Improvements

Collier Lakes proposes to have two (2) full access points on Oil Well Road. The western access will be a "T" configuration intersection. A left ingress and right ingress turn lane will be required to be constructed and two (2) outbound lanes (i.e., separate left and right exiting) will be warranted. The eastern access will be aligned with the intersection of Desoto Boulevard & Oil Well Road. During the early phases of project development, the northbound and southbound approaches will be controlled via a STOP sign. Left and right ingress turn lanes and two (2) outbound lanes for separate thru/left and right turns will be required. The Developer will pay a pro rata share towards the cost of installing a traffic signal, if warrants are satisfied.

The final design of the site access improvements will be established at the time of acquiring development approval.

Methodology

On May 21, 2018, a methodology meeting was conducted with Mr. Michael Sawyer, Mr. Stephen Baluch and others of Collier County's Traffic Operations and Transportation Planning Department. The results of that meeting are provided in the attached Traffic Impact Statement Methodology Report, dated May 25, 2018 (refer to pages M1 thru M12). A follow-up methodology review was performed by staff and those comments/responses are also included as pages MA1 thru MA5.

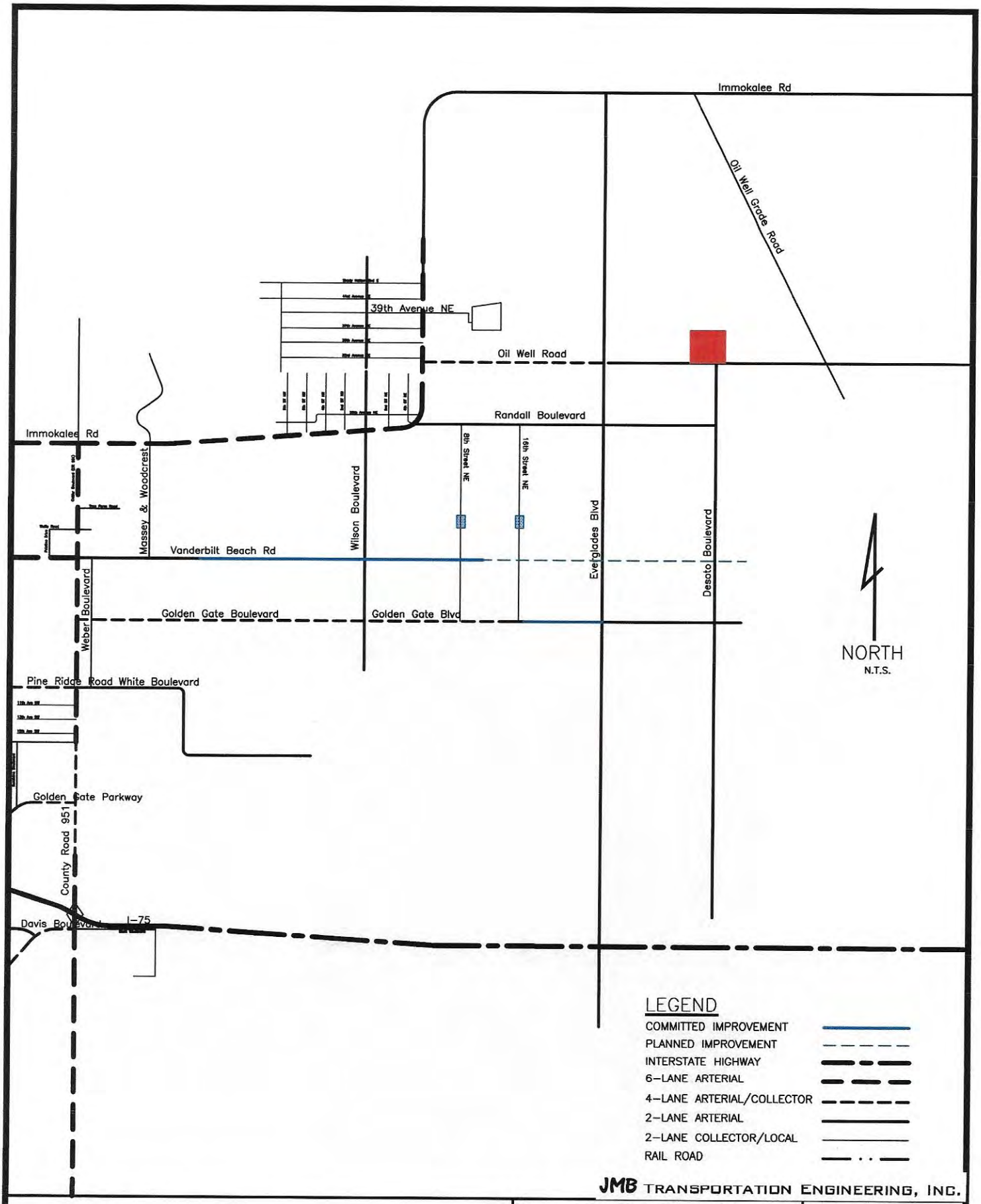
Scope of Project

Collier Lakes Village SRA is a proposed multi-use project that will consist of 1,500 single-family and 300 multi-family dwelling units, 45,0000 square feet of neighborhood commercial/retail and 18,000 square feet of governmental/institutional land uses. The Developer has the option of converting single-family units to multi-family units at a ratio of 1:1, but no more than 1,800 total units can be constructed. The maximum number of single-family that can be converted to multi-family will be 200 dwelling units. The site is located on the north side of the intersection of Desoto Boulevard & Oil Well Road, within Collier County, Florida. Access to the site will provided via two (2) full access points on Oil Well Road. The western access will be a "T" configuration intersection and the eastern access will be aligned with the intersection of Desoto Boulevard & Oil Well Road. For additional site details, refer to the MCP prepared by Hole Montes & Associates.

Table B
Proposed Land Uses

Proposed Land Uses	Units/Size
Single-Family**	1,500 d.u.'s
Multi-Family**	300 d.u.'s
Commercial/ Retail	45,000 s.f.
Governmental/Institutional	18,000 s.f.

** The Developer has the option of converting single-family units to multi-family units at a ratio of 1:1, but no more than 1,800 total units can be constructed. The maximum number of single-family that can be converted to multi-family will be 200 dwelling units.



JMB TRANSPORTATION ENGINEERING, INC.

Collier Lakes

June 5, 2018

Project Location & Roadway Classification

FIGURE 1

LEGEND

COLOR	LAND USE	ACRES
	LANDSCAPE / PERIMETER BUFFER	25.25
	LAKE MAINTENANCE EASEMENT / OPEN SPACE	48.76
	LAKES / WATER MANAGEMENT	221.77
	NEIGHBORHOOD EDGE	202.29
	NEIGHBORHOOD GENERAL	42.80
	VILLAGE AMENITY & WELLNESS CENTER	10.15
	PRESERVE + 25' UPLAND BUFFER	2.21
	ROW RESERVATION	12.21
	50' ROW 60' ROW 80' ROW MAIN ENTRY ROAD ROW	61.86
	POTENTIAL FUTURE RESIDENT ONLY ACCESS	0.32
	* VILLAGE CENTER - MIXED USE	27.17
	PROJECT BOUNDARY TOTAL =	654.79

*MULTI-FAMILY COMPONENT OF MIXED USED VILLAGE CENTER TO INCORPORATE A MINIMUM OF 2 ACRES OF LAKE INTO SITE PLAN AT TIME OF DEVELOPMENT.

MINIMUM OPEN SPACE : 64%

Open Space Calculations*

Land Use	Acreage	Open Space (percentage)	Open Space (acres)
Lake	221.77	100	221.77
Village Amenity and Wellness Center	10.15	40	4.06
Lake Maintenance Easement/Open Space	48.76	100	48.76
Landscape Buffers	25.25	100	25.25
Neighborhood General and Neighborhood Edge	245.09	38	93.13
Preserve	2.21	100	2.21
Internal ROW	62.18	15	9.33
Village Center	27.17	30	8.15
Total	642.58		412.66

*Excludes future right-of-way reservation (12.21 acres).

4.2

LETTER	REVISIONS	DATE
A		
A		
A		
A		

COLLIER LAKES

DESIGNED BY	B.E.J.	DATE	5/2018
DRAWN BY	M.S.K.	DATE	5/2018
CHECKED BY	HMA	DATE	5/2018
VERTICAL SCALE		HORIZONTAL SCALE	As Noted

HOLE MONTES
ENGINEERS•PLANNERS•SURVEYORS

950 Encore Way
Naples, FL 34110
Phone: (239) 254-2000
Florida Certificate of Authorization No.1772

SRA MASTER PLAN

THESE DRAWINGS ARE NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED BELOW.

DATE _____

REFERENCE NO.	DRAWING NO.
2017.001	2017.001_Mst
PROJECT NO.	SHEET NO.
2017.001	1 OF 5

Project Generated Traffic

Traffic that can be expected to be generated by Collier Lakes was estimated based upon the guidelines established by the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition. That is, historical traffic data collected at similar land uses was relied upon in estimating the project's traffic. It was determined that land use codes "Single-Family Detached" (LUC 210), "Multi-Family" (LUC 220), "Office Park" (LUC 750), and "Shopping Center" (LUC 820) were most representative. Trips estimated for LUC 820 were adjusted to account for a 30% pass-by rate, and a 15% internal capture rate was applied to both LUC 820 and LUC 750.

As determined, the project could generate 16,701 daily trips and 1,309 vph and 1,685 vph new trips during the AM and PM peak hours, respectively. Table 1A and Table 1B depict the computations performed in determining the project's total trips, new trips, and net external new trips. Table C provides a summary of the trip generation computation results that are shown in Table 1A and Table 1B.

Table C
New Site-Generated Trips
(Summation of Table 1)

Daily Weekday Trips Generated (ADT)	AM Peak Hour Trips Generated (vph)	PM Peak Hour Trips Generated (vph)
16,701	1,309	1,685

TABLE 1A

TRIP GENERATION COMPUTATIONS

Collier Lakes

Residential Trips

Land Use Code	Land Use Description	Maximum Build Schedule
210	**Single-Family Detached Housing**	1,500 Units
220	**Multi-Family (Low Rise)**	300 Units

Code	Trip Period	Trip Generation Equation	Total Trips	Trips Enter/Exit
LUC 210	Daily Traffic (ADT) =	Ln(T) = 0.92Ln(X)+2.71 =	12,559 ADT	
	AM Peak Hour (vph) =	T = 0.71(X)+ 4.80 =	1,070 vph	268 / 802 vph
		25% Enter/ 75% Exit =		
	PM Peak Hour (vph) =	Ln(T) = 0.96Ln(X)+0.20 =	1367 vph	861 / 506 vph
		63% Enter/ 37% Exit =		
LUC 220	Daily Traffic (ADT) =	T = 7.56(X) - 40.86 =	2,227 ADT	
	AM Peak Hour (vph) =	Ln(T) = 0.95Ln(X)-0.51 =	135 vph	31 / 104 vph
		23% Enter/ 77% Exit =		
	PM Peak Hour (vph) =	Ln(T) = 0.89Ln(X)-0.02 =	157 vph	99 / 58 vph
		63% Enter/ 37% Exit =		

Total Residential Trips

New Daily Traffic (ADT) =	14,786 ADT		
New AM Peak Hour (vph) =	1,205 vph	299 /	906 vph
New PM Peak Hour (vph) =	1,524 vph	960 /	564 vph

Total Commercial Internal Capture Trips (15%)

Internal Daily Traffic (ADT) =	*(Refer to Table 1B)*	410 ADT	
Internal AM Peak Hour (vph) =	*(Refer to Table 1B)*	22 vph	15 / 7 vph
Internal PM Peak Hour (vph) =	*(Refer to Table 1B)*	34 vph	15 / 19 vph

Total Residential External Trips

New External Daily Traffic (ADT) =	**14,375 ADT**	
New External AM Peak Hour (vph) =	**1,183 vph**	284 / 899 vph
New External PM Peak Hour (vph) =	**1,490 vph**	945 / 545 vph

TABLE 1B

TRIP GENERATION COMPUTATIONS

Collier Lakes

Commercial Trips

Land Use Code	Land Use Description	Maximum Build Schedule
750	**Office Park**	18,000 s.f.
820	**Shopping Center**	45,000 s.f.

Code	Trip Period	Trip Generation Equation	Total Trips	Trips Enter/Exit	
LUC 750	Daily Traffic (ADT) =	Ln(T) = 0.89Ln(X)+3.1 =	291 ADT		
	AM Peak Hour (vph) =	T= 1.44(X) =	26 ADT	23 / 3	vph
		89% Enter/ 11% Exit =			
	PM Peak Hour (vph) =	T= 1.07(X) =	19 ADT	1 / 18	vph
		7% Enter/ 93% Exit =			
**********					
LUC 820	Daily Traffic (ADT) =	Ln(T) = 0.68Ln(X)+5.57 =	3,493 ADT		
	AM Peak Hour (vph) =	T = 0.5(X)+151.78=	174 vph	108 / 66	vph
		62% Enter/ 38% Exit =			
	PM Peak Hour (vph) =	Ln(T) = 0.74Ln(X)+2.89 =	301 vph	144 / 156	vph
		48% Enter/ 52% Exit =			
			30% Pass-by Rate		
	New Daily Traffic (ADT) =	(ADT) x (% of New Trips)	2,445		
	New AM Peak Hour (vph) =	(AM) x (% of New Trips)	122	76 / 46	vph
		62% Enter/ 38% Exit =			
	New PM Peak Hour (vph) =	(PM) x (% of New Trips)	211	101 / 110	vph
		48% Enter/ 52% Exit =			

Total Commercial Internal Capture Trips (15%)

Internal Daily Traffic (ADT) =	410 ADT		
Internal AM Peak Hour (vph) =	22 vph	15 /	7 vph
Internal PM Peak Hour (vph) =	34 vph	15 /	19 vph

Total Commercial External Trips

New External Daily Traffic (ADT) =	**2,325 ADT**		
New External AM Peak Hour (vph) =	**126 vph**	84 /	42 vph
New External PM Peak Hour (vph) =	**195 vph**	87 /	108 vph

****

****

Total External Trips

New External Daily Traffic (ADT) =	**16,701 ADT**		
New External AM Peak Hour (vph) =	**1,309 vph**	368 /	941 vph
New External PM Peak Hour (vph) =	**1,685 vph**	1,032 /	653 vph

Existing + Committed Road Network
Figure 1 and Table 2A provide a detail of the surrounding E + C road network. Table 2A also shows the roads' respective minimum level of service performance standards and capacity.

Oil Well Road varies from a two-lane to a four-lane major east/west arterial that extends between its western terminus at its intersection with Immokalee Road to S.R. 29 and continues east through rural/agricultural lands to its eastern terminus at the Collier County Line. Between Immokalee Road and Everglades Boulevard, Oil Well Road is classified as a four-lane divided arterial having a maximum LOS D capacity of 2,000 vphpd. Between Everglades Boulevard and Oil Grade Road, Oil Well Road is a two-lane arterial having a maximum LOS D service capacity of 1,100 vphpd Within proximity of the site, the posted speed limit of Oil Well Road is 45 MPH. Collier County's LRTP has identified Oil Well Road to be widened to four or six lanes. Collier Lakes will set aside 100' of right-of-way along its southern boundary to accommodate the widening of Oil Well Road.

8th Street and 16th Street Bridges Collier County has funded the construction of two (2) bridges (i.e., 8th NE and 16th NE streets) that will be completed by 2020/2021, which will provide an alternate means of north/south access for the Randall Boulevard area. More specifically, the bridges will create a north/south interconnect between Randall Boulevard and Golden Gate Boulevard and between Randall Boulevard and the extension of Vanderbilt Beach Road that will substantially reduce traffic demands on Randall Boulevard and Immokalee Road.

Vanderbilt Beach Road Collier County has committed to the funding of Vanderbilt Beach Road Extension, which consists of a three-lane arterial that will be expandable to six-lanes. The road will be extended from its existing eastern terminus (east of C.R. 951) to intersect 8th Street NE and will eventually be extended to Desoto Boulevard. Vanderbilt Beach Road will substantially reduce traffic demands on Immokalee Road, Randall Boulevard and Golden Gate Boulevard. Construction is expected to begin in the year 2021.

Everglades Boulevard is a major two-lane north/south arterial that extends between its southern terminus (south of I-75) to its northern terminus at its intersection with Immokalee Road. Collier County has planned for the future four-laning or six-laning of the Everglades Boulevard.

Desoto Boulevard is a major two-lane north/south arterial that extends between its southern terminus (immediately north of I-75) to its northern terminus at its intersection with Oil Well Road. Collier County has planned for the future four-laning or six-laning of the Desoto Boulevard.

Immokalee Road varies from a two-lane to a four-lane and six-lane major east/west and north/south arterial. The road extends between its western terminus at the Gulf of Mexico to the northern Golden Gate Estates Area and then north/south to the Immokalee

Community and interconnects with S.R. 29. South of Oil Well Road, Immokalee Road is classified as a six-lane divided arterial; and north of Oil Well Road it is classified as a four-lane divided and two-lane arterial. Immokalee Road has a posted speed limit of Immokalee Road is 45 MPH.

Randall Boulevard
Although not significantly impacted by the project, the report acknowledges that Randall Boulevard is expected to fail by the year 2020. However, Collier County has funded the construction of two (2) bridges (i.e., 8th Street NE and 16th Street NE) that will be completed by 2020/2021. These two (2) bridges will provide an alternate means of north/south access to the Randall Boulevard area. More specifically, the bridges will create a north/south interconnect between Randall Boulevard and Golden Gate Boulevard and between Randall Boulevard and the extension of Vanderbilt Beach Road that will substantially reduce traffic demands on Randall Boulevard. Collier County's LRTP has identified future four-laning or six-laning of Randall Boulevard.

Randall Boulevard & Immokalee Road
Collier County is evaluating possible at-grade and flyover improvements to the intersection of Randall Boulevard & Immokalee Road. At this time, no final improvements have been established.

Randall Boulevard & Oil Well Road Interconnect
Collier County is evaluating possible at-grade improvements that would more directly interconnect Oil Well Road to Randall Boulevard. The direct interconnect is expected to provide substantial better traffic flow in the area. At this time, no final improvements have been established.

Project Traffic Distribution

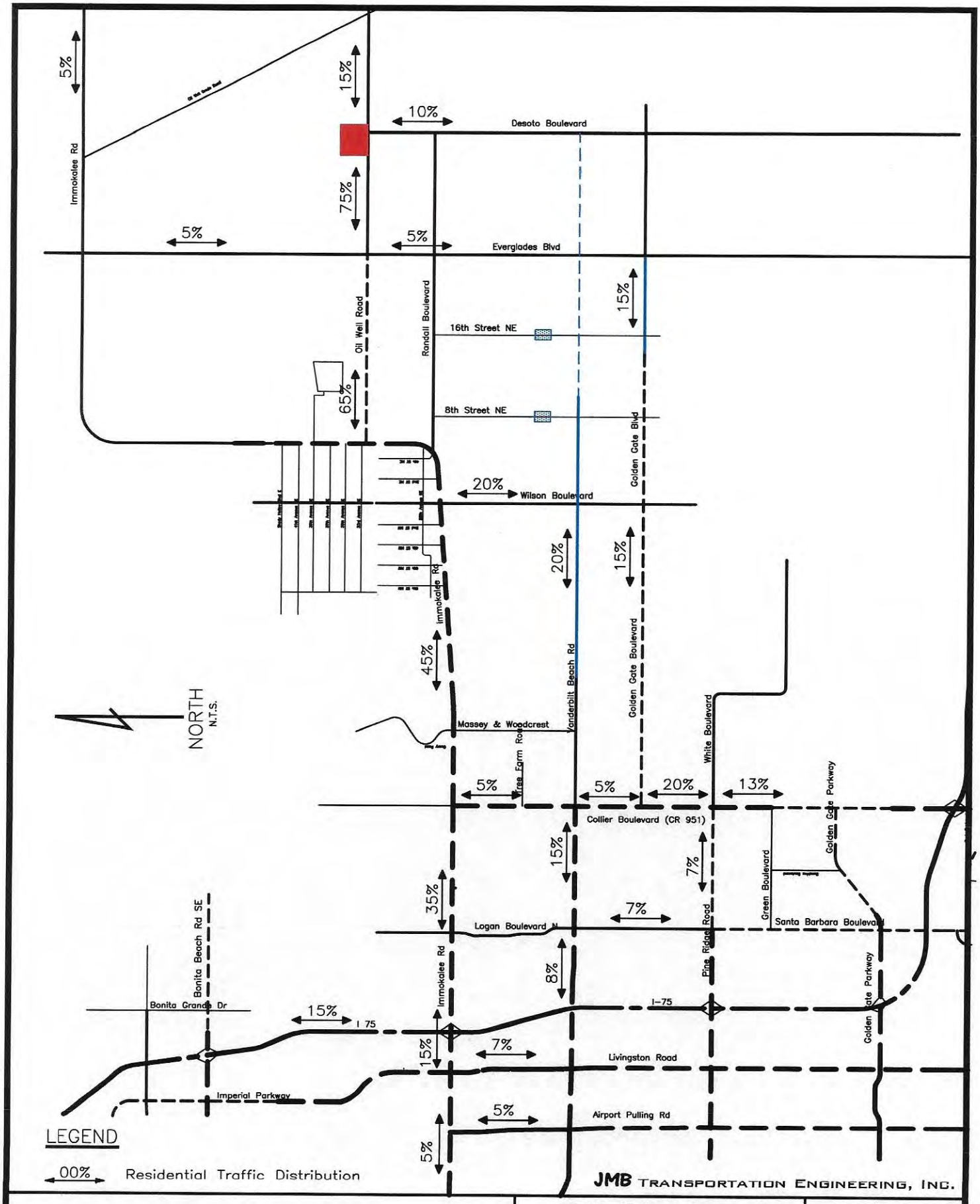
The project's residential trips were distributed to the surrounding road network based upon logical means of ingress/egress, current and future traffic patterns in the area, and the location of surrounding businesses, employment opportunities, recreational areas, schools, etc. Figure 2A depicts the distribution of trips on the percentage of residential traffic generated. Table 2A details the project's PM peak hour residential trips assignments to the surrounding road network.

The project's commercial traffic was distributed to the surrounding road network based upon the location of competing markets and nearby residential densities. *Note, because the size of the commercial is relatively small and is intended to serve the needs of the neighborhood, the trips are expected to be of nearby origin/destination.* Figure 2B depicts the distribution of trips based upon the percentage of the commercial traffic generated. Table 2A details the project's PM peak hour commercial trips assignments to the surrounding road network.

Table 2A summarizes the combined residential + commercial PM peak hour trips assignments to the surrounding road network.

Area of Significant Impact

The area of significant impact was determined based upon Collier County's 2%, 2% and 3% criteria (i.e., if the project's traffic is 2% or more of a roadway's adopted level of service capacity, then the project has a significant impact upon that link). Table 2A describes the project traffic distributions and the level of impact on the surrounding roadways. Roads that were identified as being within the projects area impact are identified in Table 2A.



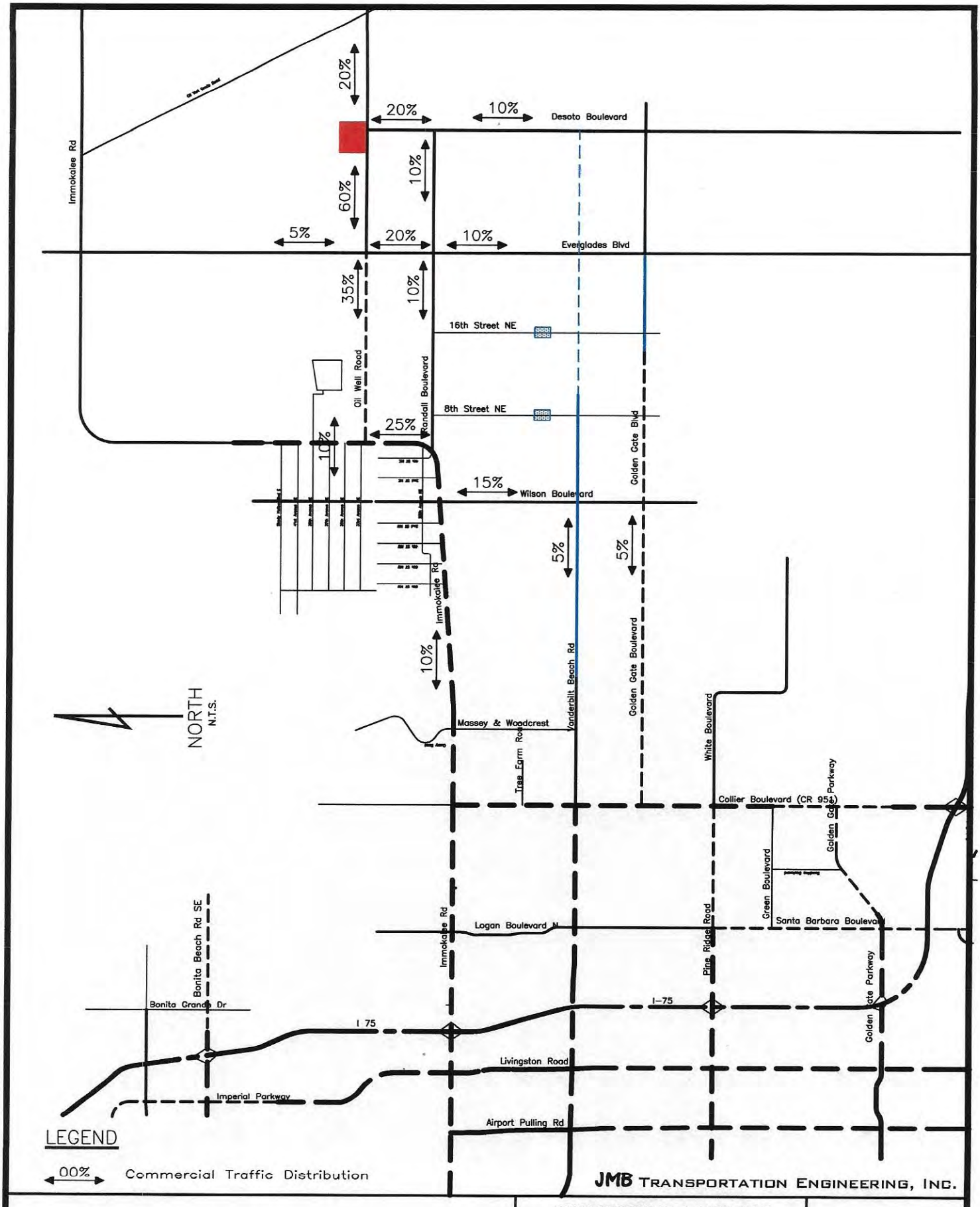
Collier Lakes

June 5, 2018

RESIDENTIAL LAND USE

PROJECT-GENERATED TRAFFIC DISTRIBUTION

FIGURE 2A



JMB TRANSPORTATION ENGINEERING, INC.

Collier Lakes

October 26, 2018

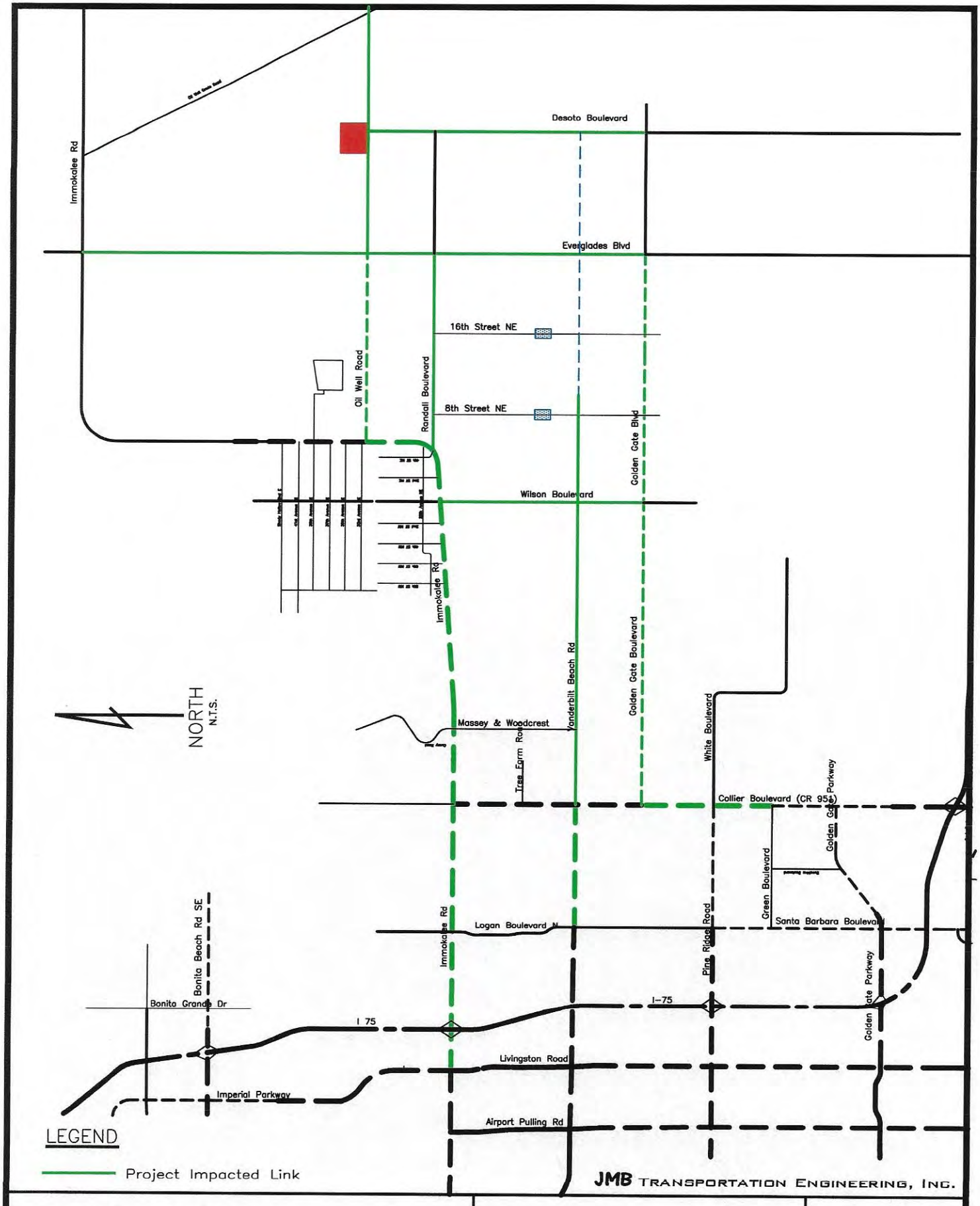
COMMERCIAL LAND USE

PROJECT-GENERATED TRAFFIC DISTRIBUTION

FIGURE 2B

TABLE 2A
PROJECT'S AREA OF IMPACT

Res. Project Traffic Peak Direction (vphpd) =					945	Entering	545	Exiting									
Com. Project Traffic Peak Direction (vphpd) =					87	Entering	108	Exiting									
			Road Class	Serv. Vol LOS	LOS Service PK Direction Volume (vphpd)	Res Project Traffic % Dist.	Res Project Pk Hr PK Dir (vphpd)	Res Project Pk Hr Non-PK (vph)	Com Project Traffic % Dist.	Com Project Pk Hr PK Dir (vphpd)	Com Project Pk Hr Non-PK (vph)	Total Project Pk Hr PK Dir (vphpd)	Total Project Non-Pk PK Dir (vphpd)	Impact Stand	Percent Impact	Significant Impact
17.0	Golden Gate Blvd	Collier Blvd to Wilson	4D	D	2300	15%	142	82	5%	5	4	147	86	3%	6.40%	YES
123.0		Wilson to Everglades Blvd	4D	D	2300	15%	142	82	1%	1	1	143	83	3%	6.21%	YES
30.1	County Road 951	Immokalee Rd to Vanderbilt Rd	6D	E	3000	5%	47	27	1%	1	1	48	28	3%	1.61%	NO
30.2		Vanderbilt to Golden Gate	6D	E	3000	5%	47	27	1%	1	1	48	28	3%	1.61%	NO
31.1		Golden Gate Blvd to Pine Ridge	6D	E	3000	20%	189	109	1%	1	1	190	110	3%	6.34%	YES
31.2		Pine Ridge to Green Blvd	6D	E	3000	13%	123	71	1%	1	1	124	72	3%	4.13%	YES
41.2	Immokalee Road	Goodlette-Frank to Airport	6D	E	3100	5%	47	27	1%	1	1	48	28	3%	1.56%	NO
42.1		Airport Road to Livingston Rd	6D	E	3100	8%	76	44	1%	1	1	77	44	3%	2.47%	NO
42.2		Livingston Rd to I-75	6D/8D	E	3500	15%	142	82	1%	1	1	143	83	3%	4.08%	YES
43.1		I-75 to Logan Blvd	6D/8D	E	3500	35%	331	191	2%	2	2	333	192	3%	9.51%	YES
43.2		Logan Blvd to C.R. 951	6D	E	3200	35%	331	191	3%	3	3	334	193	3%	10.44%	YES
44.0		C.R. 951 to Wilson Blvd	6D	E	3300	45%	425	245	10%	11	9	436	254	3%	13.21%	YES
45.0		Wilson Blvd to Oil Well	6D	E	3300	65%	614	354	25%	27	22	641	376	2%	19.43%	YES
46.0		Oil Well to S.R. 29	2U	D	900	5%	47	27	1%	1	1	48	28	2%	5.37%	YES
50.0	Logan Blvd	Immokalee Rd to Vanderbilt	2U	D	1000	2%	19	11	1%	1	1	20	12	3%	2.00%	NO
111.1	Vanderbilt BR	Airport Rd to Livingston Rd	6D	E	3000	5%	47	27	1%	1	1	48	28	3%	1.61%	NO
111.2		Livingston to Logan Blvd	6D	E	3000	8%	76	44	1%	1	1	77	45	3%	2.56%	NO
112.0		Logan Blvd to C.R. 951	6D	E	3000	15%	142	82	1%	1	1	143	83	3%	4.76%	YES
8.3	5-yr CIE	C.R. 951 to Wilson Blvd	2LD	E	1500	20%	189	109	5%	5	4	194	113	3%	12.96%	YES
	5-yr CIE	Wilson to 8th Street	2LD	E	1500	1%	9	5	1%	1	1	11	6	3%	0.70%	NO
118.0	Wilson Blvd	Immokalee Rd to Golden Gate Blvd	2U	D	900	20%	189	109	15%	16	13	205	122	3%	22.80%	YES
119.0	Oil Well Road	Immokalee to Everglades	4D	D	2000	65%	614	354	35%	38	30	652	384	2%	32.60%	YES
120.0		Everglades to Desoto	2U	D	1100	75%	709	409	60%	65	52	774	461	2%	70.32%	YES
121.1		Desoto to Oil Well Grade	2U	D	1100	15%	142	82	20%	22	17	164	99	2%	14.91%	YES
121.2		Oil Well Grade to Ave Maria	4D	D	2000	15%	142	82	15%	16	13	158	95	2%	7.90%	YES
132.0	Randall Road	Immokalee Rd to Everglades	2U	D	900	2%	19	11	10%	11	9	30	20	3%	3.30%	YES
133.0		Everglades to Desoto	2U	D	900	1%	9	5	10%	11	9	20	15	3%	2.25%	NO
135.1	Everglades Blvd	Golden Gate Blvd to Randall	2U	D	800	5%	47	27	10%	11	9	58	36	2%	7.26%	YES
135.2		Randall Blvd to Oil Well Rd	2U	D	800	5%	47	27	20%	22	17	69	44	2%	8.61%	YES
136.0		Oil Well Rd to Immokalee Rd	2U	D	800	5%	47	27	5%	5	4	52	31	2%	6.50%	YES
138.0	Desoto Blvd	Golden Gate Blvd to Oil Well	2U	D	800	10%	95	55	20%	22	17	117	72	2%	14.63%	YES



Collier Lakes

October 26, 2018

PROJECT IMPACTED LINKS

FIGURE 2C

2018 thru 2028 Project Build-out Traffic Conditions
In order to establish 2018 thru 2028 project build-out traffic conditions, two forecasting methods were used.

The first traffic forecasting method was the County's traffic count data was adjusted for peak season conditions, peak hour conditions, peak direction, and an annual growth rate was then applied. The peak season/peak hour/peak direction factor as shown on Table 2B was derived from the 2017 Collier County AUIR Reports. The annual growth rate was also obtained from the 2017 AUIR Report. Using the annual growth rate, the 2028 background traffic conditions were determined, which are depicted in Table 2B.

The second traffic forecasting method was to add the vested trips (trip bank) identified in the 2017 AUIR report to the adjusted peak season, peak hour and peak direction traffic counts. The 2028 vested trips "+" background traffic volumes are depicted in Table 2B.

The greater of the two values produced by the two forecasting procedures was then considered to reflect the 2028 background traffic, except for Immokalee Road (between Logan Boulevard and C.R. 951), which was based upon background + vested trips per Collier County staff's direction. The net new project generated traffic was then added to the background traffic. Table 2C provides a summary of the 2018 thru 2028 traffic conditions and the roadways' level of service and remaining available capacity. As shown, all project impacted roadways (E + C Network) will continue to operate at the County's adopted minimum level of service thresholds at project build-out.

TABLE 2B
2017 & 2028 ROADWAY LINK VOLUMES

						Per Growth Rate Method		*Per Vested Trips Metho*
			2017 AUIR Traffic (vphpd)	AUIR Pk DiR	Growth Rate per AUIR	2028 Peak Hour PK Direction Background (vphpd)	Trip Bank (vphpd)	2028 Peak Hour PK Direction Background Per Vested Trips (vphpd)
17.0	**Golden Gate Blvd**	Collier Blvd to Wilson	1600	E	2.00%	**1989**	0	1600
123.0		Wilson to Everglades Blvd	1102	E	2.00%	**1370**	0	1102
30.1	**County Road 951**	Immokalee Rd to Vanderbilt Rd	1520	N	3.45%	**2207**	447	1967
31.1		Golden Gate Blvd to Pine Ridge	1904	N	2.00%	**2367**	42	1946
31.2		Pine Ridge to Green Blvd	1904	N	2.00%	**2367**	44	1948
42.2	**Immokalee Road**	Livingston Rd to I-75	2460	W	2.00%	**3059**	29	2489
43.1		I-75 to Logan Blvd	2458	E	3.52%	**3596**	345	2803
43.2		Logan Blvd to C.R. 951	1980	E	~~3.93%~~	~~3026~~	585	**2565**
44.0		C.R. 951 to Wilson Blvd	1620	E	2.00%	2014	547	**2167**
45.0		Wilson Blvd to Oil Well	1890	E	2.00%	**2350**	429	2319
46.0		Oil Well to S.R. 29	390	N	4.00%	**600**	131	521
50.0	**Logan Blvd**	Immokalee Rd to Vanderbilt	560	N	4.00%	**862**	30	590
112.0	**Vanderbilt BR**	Logan Blvd to C.R. 951	1530	E	4.00%	**2355**	262	1792
	5-yr CIE	C.R. 951 to Wilson Blvd	N/A	N/A	N/A	N/A	N/A	N/A
	5-yr CIE	Wilson to 8th Street	N/A	N/A	N/A	N/A	N/A	N/A
118.0	**Wilson Blvd**	Immokalee Rd to Golden Gate Blvd	320	N	3.25%	455	**24**	344
119.0	**Oil Well Road**	Immokalee to Everglades	700	E	3.25%	995	333	**1033**
120.0		Everglades to Desoto	280	W	2.00%	348	223	**503**
121.1		Desoto to Oil Well Grade	280	W	4.00%	431	209	**489**
121.2		Oil Well Grade to Ave Maria	280	W	4.00%	431	209	**489**
132.0	**Randall Road**	Immokalee Rd to Everglades	870	E	2.68%	**1164**	78	948
133.0		Everglades to Desoto	626	E	2.00%	**778**	20	646
135.1	**Everglades Blvd**	Golden Gate Blvd to Randall	280	N	2.00%	**348**	36	316
135.2		Randall Blvd to Oil Well Rd	280	N	2.00%	**348**	36	316
136.0		Oil Well Rd to Immokalee Rd	410	N	2.00%	**510**	0	410
138.0	**Desoto Blvd**	Golden Gate Blvd to Oil Well	100	S	2.00%	**124**	0	100

TABLE 2C
2028 ROADWAY LINK VOLUME/CAPACITY ANALYSIS

			2017 Peak Hour PK Direction (vphpd)	2028 Peak Hour PK Direction Background (vphpd)	AUIR Bkgd Pk Dir	2028 Peak Hr PK Dir Backgrnd LOS	Project Pk Hr PK Dir (vphpd)	Prjct Pk Dir	Project Pk Hr Non-PK Dir (vph)	Prjct Non-Pk Dir	2028 Build-Out Peak Hour PK Dir (vphpd)	Serv. Vol. Pk Hr PK Dir (vphpd)	2028 Build-Out Peak Hour PK Direction v/c Ratio	2028 Build-Out Peak Hour PK Dir LOS	Notes
17.0	**Golden Gate Blvd**	Collier Blvd to Wilson	1600	1989	E	D	147	E	86	W	2137	2300	0.93	D	
123.0		Wilson to Everglades Blvd	1102	1370	E	D	143	E	83	W	1513	2300	0.66	D	
30.1	**County Road 951**	Immokalee Rd to Vanderbilt R	1520	2207	N	D	48	N	28	S	2256	3000	0.75	E	
31.1		Golden Gate Blvd to Pine Ridg	1904	2367	N	D	190	N	110	S	2557	3000	0.85	E	
31.2		Pine Ridge to Green Blvd	1904	2367	N	D	124	N	72	S	2491	3000	0.83	E	
42.2	**Immokalee Road**	Livingston Rd to I-75	2460	3059	W	E	143	E	83	W	3141	3500	0.90	E	
43.1		I-75 to Logan Blvd	2458	3596	E	E	333	E	192	W	3929	3500	1.12	F	No. 1
43.2		Logan Blvd to C.R. 951	1980	2565	E	E	334	E	193	W	2899	3200	0.91	E	
44.0		C.R. 951 to Wilson Blvd	1620	2167	E	D	436	E	254	W	2603	3300	0.79	E	
45.0		Wilson Blvd to Oil Well	1890	2350	E	E	641	E	376	W	2991	3300	0.91	E	
46.0		Oil Well to S.R. 29	390	600	N	D	48	S	28	N	629	900	0.70	D	
50.0	**Logan Blvd**	Immokalee Rd to Vanderbilt	560	862	N	D	20	N	12	S	882	1000	0.88	D	
112.0	**Vanderbilt BR**	Logan Blvd to C.R. 951	1530	2355	E	C	143	E	83	W	2498	3000	0.83	E	
	5-yr CIE	C.R. 951 to Wilson Blvd	N/A	N/A	N/A		194	E	113	W		1500			
	5-yr CIE	Wilson to 8th Street	N/A	N/A	N/A		11	E	6	W		1500			
118.0	**Wilson Blvd**	Immokalee Rd to Golden Gate	320	455	N	D	205	N	122	S	660	900	0.73	D	
119.0	**Oil Well Road**	Immokalee to Everglades	700	1033	E	B	652	E	384	W	1685	2000	0.84	D	
120.0	Peak Dir.	Everglades to Desoto	280	503	W	C	774	E	461	W	964	1100	0.88	D	
	Non-Peak Dir.	Everglades to Desoto	280	308		C	774	E	461	W	1082	1100	0.98	D	
121.1		Desoto to Oil Well Grade	280	489	W	C	164	E	99	W	588	1100	0.53	C	
121.2		Oil Well Grade to Ave Maria	280	489	W	B	158	E	95	W	584	2000	0.29	B	
132.0	**Randall Road**	Immokalee Rd to Everglades	870	1164	E	E	30	E	20	W	1193	900	1.33	F	No. 2
133.0		Everglades to Desoto	626	778	E	D	20	E	15	W	799	900	0.89	D	

Note

1.Immokalee Road is a constrained facility and by 2028 (without Colliker Lakes traffic) will operate at LOS F. The funded E+C Network (Vanderbilt Beach Road Extension) will reduce traffic demand on Immokalee Road. Collier staff & BCC have indicated that VBR Ext. will provide relief to Immokalee Road.

2. Randall operates at LOS F without Collier Lakes Traffic. The construction of 8th & 16th Street Bridges and VBR Ext will reduce traffic demand on Randall Boulevard.

TABLE 2C
2028 ROADWAY LINK VOLUME/CAPACITY ANALYSIS

			2017 Peak Hour PK Direction (vphpd)	2028 Peak Hour PK Direction Background (vphpd)	AUIR Bkgd Pk Dir	2028 Peak Hr PK Dir Backgrnd LOS	Project Pk Hr PK Dir (vphpd)	Prjct Pk Dir	Project Pk Hr Non-PK Dir (vph)	Prjct Non-Pk Dir	2028 Build-Out Peak Hour PK Dir (vphpd)	Serv. Vol. Pk Hr PK Dir (vphpd)	2028 Build-Out Peak Hour PK Direction v/c Ratio	2028 Build-Out Peak Hour PK Dir LOS	Notes
135.1	**Everglades Blvd**	Golden Gate Blvd to Randall	280	348	N	B	58	N	36	S	406	800	0.51	B	
135.2		Randall Blvd to Oil Well Rd	280	348	N	B	69	N	44	S	417	800	0.52	B	
136.0		Oil Well Rd to Immokalee Rd	280	510	N	B	52	S	31	N	541	800	0.68	B	
138.0	**Desoto Blvd**	Golden Gate Blvd to Oil Well	100	124	S	B	117	N	72	S	196	800	0.25	B	

9.3

Road Impact Fees

The project will be required to pay road impact fees pursuant to the requirements set forth by Collier County's Road Impact Fee Ordinance. Itemized below in Table D are the current impact fee rates, which were used in determining that the project will pay more than $13,472,828.00 in road impact fees.

Table D
Collier Lakes - Road Impact Fees

Proposed Land Uses	Units/Size	Fee/Units	Road Impact Fee
Single-Family	1,500 d.u.'s	$7,443.99/d.u.	$11,165,985.00
Multi-Family or Apartments	300 d.u.'s	$5,541.89/d.u.	$1,662,567.00
Commercial/ Retail	45,000 s.f.	$14,317.25/ksf	$644,276.00
Governmental/Institutional	18,000 s.f.	Pending	Pending
Total			**$13,472,828.00**

APPENDIX

694 Oil Well Rd (CR 858) east of Everglades Blvd h

	2018 Sta	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			Annual Daily Average
	HOUR ENDING	E	W	TOTAL	E	W	TOTAL	E	W	TOTAL	E	W	TOTAL	
1	0100	14	40	54	17	34	51	15	37	52	17	38	55	
2	0200	16	24	40	9	22	31	5	23	28	12	31	43	
3	0300	6	133	139	8	129	137	8	128	136	10	111	121	
4	0400	9	8	17	8	19	27	8	52	60	10	45	55	
5	0500	201	24	225	148	17	165	127	15	142	149	13	162	
6	0600	130	64	194	116	41	157	146	55	201	151	46	197	
7	0700	284	232	516	208	131	339	204	195	399	210	202	412	
8	0800	283	279	562	257	203	460	311	301	612	294	295	589	
9	0900	268	213	481	210	202	412	270	253	523	278	243	521	
10	1000	163	164	327	178	167	345	163	145	308	171	196	367	
11	1100	177	169	346	172	187	359	128	178	306	128	178	306	
12	1200	213	170	383	117	156	273	155	133	288	141	156	297	
13	1300	206	191	397	163	166	329	141	181	322	161	152	313	
14	1400	180	247	427	175	159	334	151	200	351	192	179	371	
15	1500	241	236	477	147	193	340	212	187	399	218	208	426	
16	1600	372	390	762	317	320	637	350	307	657	340	282	622	
17	1700	236	362	598	217	353	570	290	418	708	275	443	718	D=.62
18	1800	279	300	579	208	245	453	263	329	592	267	306	573	
19	1900	255	189	444	207	157	364	271	160	431	252	185	437	
20	2000	131	105	236	118	87	205	149	102	251	184	145	329	
21	2100	135	57	192	93	69	162	121	73	194	125	99	224	
22	2200	115	56	171	73	63	136	96	59	155	117	63	180	Ave. Daily Volume
23	2300	74	30	104	51	52	103	54	28	82	66	33	99	
24	2400	35	35	70	42	38	80	24	40	64	39	43	82	
	TOTAL	4,023	3,718	7,741	3,259	3,210	6,469	3,662	3,599	7,261	3,807	3,692	7,499	7,243
		DATE:	3/8/2018		DATE:	6/14/2018		DATE:	8/13/2018		DATE:	10/4/2018		

EB Average 3,688

WB Average 3,555

A1

HYDE PARK

Section 16, Township 48 South, Range 28 East
Collier County, Florida

Federally Listed Species Assessment

April 2019

Prepared for:

Neal Communities
5800 Lakewood Ranch Blvd.
Sarasota, FL 34240

Prepared by:

DexBender
4470 Camino Real Way, Suite 101
Fort Myers, FL 33966
(239) 334-3680

INTRODUCTION

This 654.8± acre project is located within Section 16, Township 48 South, Range 28 East, Collier County, Florida (Figure 1). The project is located north of Oil Well Road. Rural Lands West is to the east, vacant land to the north, and the Faka Union Canal and Golden Gate lots are to the west.

SITE CONDITIONS

The vast majority of the property was cleared of native vegetation and converted to row crops and/or improved pasture prior to 1980. By 1993 the entire property, except for a small area in the southeast corner of the site, had been converted to and was apparently being used for row crop production. The South Florida Water Management District (SFWMD) issued an Environmental Resource Permit in 1998 authorizing a fill pit. The fill pit was operational by 2002 and has created seven borrow pits totaling 391.30± acres. The remainder of the property has been substantially disturbed by the agricultural and mining activities. No native habitats remain on the property.

On March 28, 2019 the U.S. Army Corps of Engineers (COE) issued Jurisdiction Verification Number SAJ-2018-01385 (JD-RWR) for this property. The COE determined that 75.55± acres of jurisdictional non-wetland waters are present on-site. This consists of two open water areas adjacent to the west property line and several agricultural ditches. No COE jurisdictional wetlands are present on the property.

The southerly 100 feet of the property (12.26± acres) is within the Oil Well Road right-of-way. While this area is within the property boundary, impacts to the 12.26± acres were previously evaluated and mitigated as part of the COE permit (SAJ-2006-07018 (IP-HWB)) for the widening of Oil Well Road.

VEGETATIVE CLASSIFICATIONS

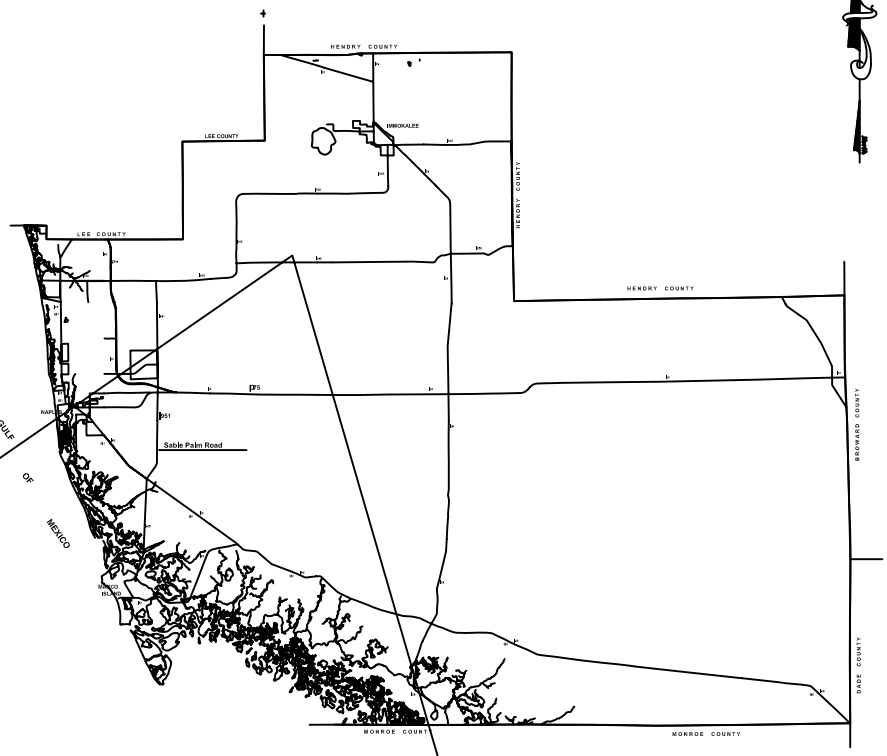
The predominant vegetation associations were mapped in the field on 2016 digital 1" = 300' scale aerial photography. The approximate property boundary was obtained from Hole Montes, Inc. and inserted into the digital aerial. Eight vegetation associations were identified using the Florida Land Use, Cover and Forms Classification System (FLUCCS). The attached Protected Species Assessment Maps (Appendix A) depict the approximate location and configuration of these vegetation associations and Table 1 summarizes the acreages by FLUCCS Code. A brief description of each FLUCCS Code is provided below.

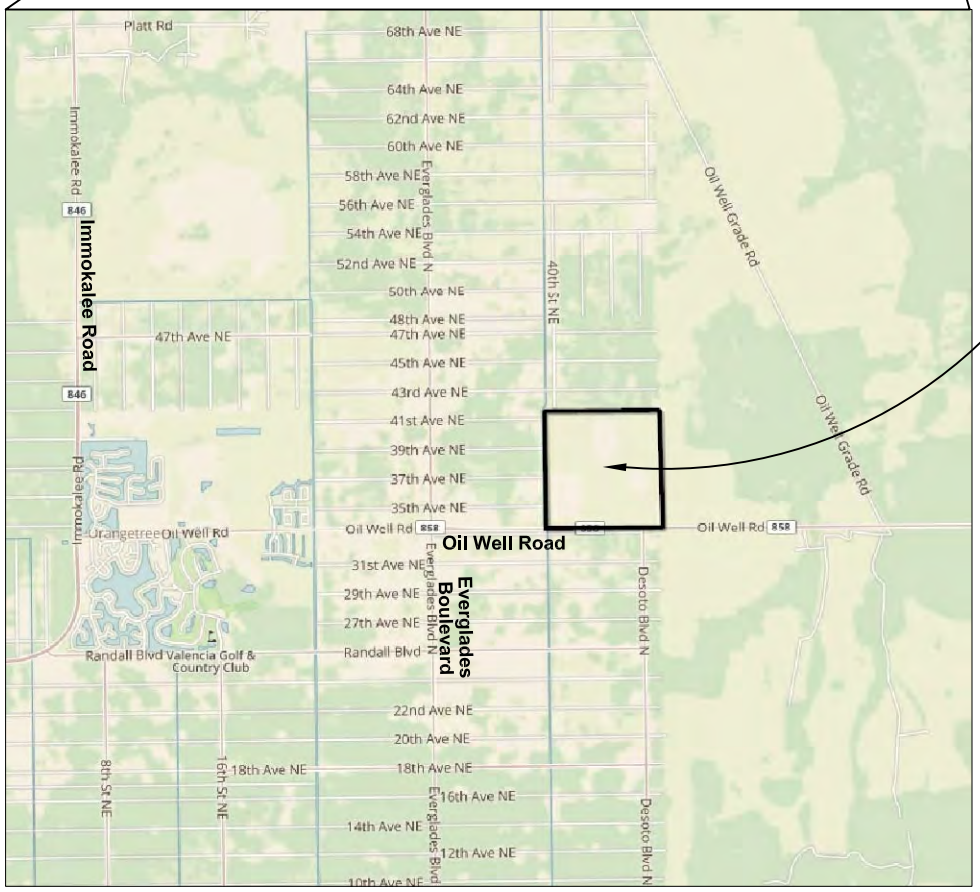
Table 1. Acreage Summary by FLUCCS Code

FLUCCS CODE	DESCRIPTION	ACREAGE
211	Improved Pastures	112.99
437	Australian Pines	0.84

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E
LATITUDE: 26° 18' 5.3"
LONGITUDE: 81° 31' 16.9"

Hyde Park





Project Location

PERMIT USE ONLY,
NOT FOR CONSTRUCTION

April 12, 2019 1:57:23 p.m.
Drawing: NEAL16LOCATION.DWG

Figure 1. Location Map

DEXBENDER ENVIRONMENTAL CONSULTING
FORT MYERS 239-334-3680

Table 1. Acreage Summary by FLUCCS Code (continued)

FLUCCS CODE	DESCRIPTION	ACREAGE
510D	Ditches	11.84
619	Exotic Wetland Hardwoods	1.15
740	Disturbed Land	125.57
742	Borrow Areas	226.81
742V	Vegetated Borrow Areas	164.49
743	Berms	11.10
	Total	**654.79**

FLUCCS Code 211, Improved Pastures

Located in the southeastern portion of the property, this area of improved pasture is vegetated by species such as broomsedge (*Andropogon* sp.), Caesar weed (*Urena lobata*), torpedo grass (*Panicum repens*), beggar tick (*Bidens alba*), dog fennel (*Eupatorium capillifolium*), and flatsedge (*Cyperus* spp.).

FLUCCS Code 437, Australian Pine

This vegetation association consists of a near monoculture of Australian pine (*Casuarina equisetifolia*). Needle duff dominates the ground cover.

FLUCCS Code 510D, Ditches

Numerous man-made ditches are present on the subject parcel and are primarily vegetated by scattered cattail (*Typha* sp.) and torpedo grass.

FLUCCS Code 619, Exotic Wetland Hardwoods

An isolated wetland located in the southeast corner of the property is dominated by exotic vegetation consisting primarily of Brazilian pepper (*Schinus terebinthifolius*) and melaleuca (*Melaleuca quinquenervia*). Additional species include scattered willow (*Salix caroliniana*), wax myrtle (*Myrica cerifera*), and swamp fern (*Blechnum serrulatum*).

FLUCCS Code 740, Disturbed Land

The uplands in the northern and western portions of the property consist of areas that were disturbed/filled by the previous mining activities. Vegetation present in these disturbed areas includes beggars tick, torpedo grass, cogon grass (*Imperata cylindrica*), false buttonweed *(Spermacoce* sp.), smutgrass (*Sporobolus indicus*), hurricane grass (*Fimbristylis* sp.), dog fennel, Caesar weed, Bahia grass (*Paspalum notatum*), ragweed (*Ambrosia artemisiifolia*), scattered Brazilian pepper, and ear-leaf acacia (*Acacia auriculiformis*).

FLUCCS Code 742, Borrow Areas

These open water areas were excavated during previous mining activity on the subject parcel and lack significant coverage of emergent vegetation.

FLUCCS Code 742V, Vegetated Borrow Areas

This FLUCCS Code was used to denote the vegetated shorelines of the excavated borrow lakes (FLUCCS Code 742). Vegetation is dominated by cattail. Widely scattered willow, torpedo grass, and spikerush (*Eleocharis* sp.) are also present.

FLUCCS Code 743, Berms

The numerous perimeter and interior berms on the subject parcel are similar in vegetative composition to the areas mapped as disturbed land (FLUCCS Code 740) but include greater coverage by species such as smutgrass, Bahia grass, and ragweed.

PROPOSED PROJECT

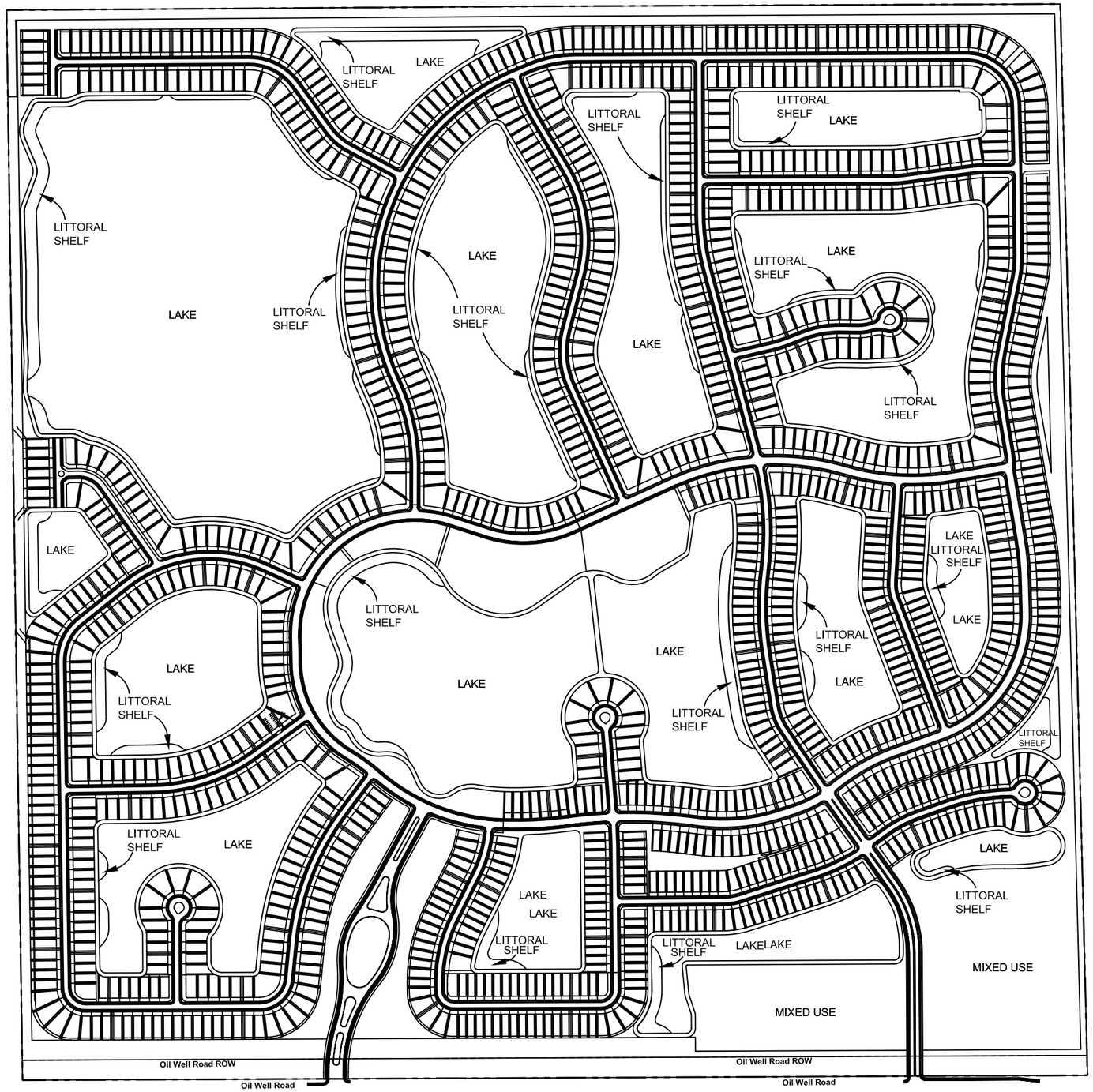
The applicant proposes to construct a 1,500 single family and 300 multifamily unit residential development (Figure 2). The project will also include 45,000 square feet of commercial and 18,000 square feet of institutional uses. This will require that the COE jurisdictional non-wetland waters be impacted as the existing borrow areas are reshaped to match the development plan. A permit application has been submitted to the COE to impact the 75.55± acres of jurisdictional non-wetland waters.

SURVEY METHOD

Based on the general habitat types (FLUCCS Codes) identified on-site there is a very low potential for a limited number of species listed as endangered or threatened by the United States Fish and Wildlife Service (FWS) to potentially occur on the subject parcel. These species include eastern indigo snake (*Drymarchon corais couperi*), Audubon's crested caracara (*Polyborus plancus audubonii*), a variety of wading birds, Everglades snail kite (*Rostrhamus sociabilis plumbeus*), wood stork (*Myrcteria americana*), Florida bonneted-bat (*Eumops floridanus*), and Florida panther (*Felis concolor coryi*). The bald eagle (*Haliaeetus leucocephalus*), which has been delisted by the FWS, is still protected by other regulations and was therefore included in the survey.

In order to comply with FWS survey methodology guidelines, each habitat type was surveyed for the occurrence of the species listed above using meandering pedestrian belt transects. Observations for listed species were made during specific protected species survey events. The meandering pedestrian belt transects were spaced approximately 50 to 200 feet apart. Observations were also made at selected points along the perimeter of the borrow areas and from a kayak. The approximate location of direct sighting or sign (such as tracks, nests, and droppings) of a listed species, when observed, was denoted on the aerial photography.

The 1" = 300' scale aerial Protected Species Assessment Maps (Appendix A) depict the approximate location of the survey transects and the results of the survey. The listed species survey was conducted during the early and mid-day hours of February 6 and 7, 2018. The weather at the time of the survey was warm and sunny with a light breeze. Additional observations were made while mapping vegetation and other site data collection in June and July 2017.



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SCALE FEET

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

Notes: Property boundary and site plan provided by Hole Montes, Inc.

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Figure 2. Proposed Conditions Map

Hyde Park

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FORT MYERS 239-334-3680

Prior to conducting the protected species survey, a search of the FWC listed species database (updated June 2017) was conducted to determine the known occurrence of listed species in the project area. The database indicated that Florida panther have been recorded on adjacent lands, particularly to the east and southeast. The property is located in several FWS identified federally listed species consultation areas. These species are the Florida scrub jay (*Aphelocoma coerulescens coerulescens*), Everglades snail kite, wood stork, Florida bonneted bat, and Florida panther.

SURVEY RESULTS

No species listed by the FWS were observed on the site during the protected species survey. In addition to the site inspection, a search of the FWC species database (updated June 2017) revealed no known protected species within the property boundary.

FEDERALLY LISTED SPECIES POTENTIAL IMPACT ASSESSMENT

Eastern Indigo Snake

The entire site has been substantially disturbed by previous agricultural or mining activities. No gopher tortoise (*Gopherus polyphemus*) burrows have been observed on the property during the listed species survey and other field work.

The Eastern Indigo Snake Programmatic Effect Determination Key (revised 2017) results in a may affect (A>B>C>D) due to the overall size of the property (654.79± acres). However, more than half of the site consists of borrow pits and there are no native habitats present on the property. The applicant agrees to implement the 2013 Standard Protection Measures for the Eastern Indigo Snake.

Therefore, the proposed project will not likely adversely affect the eastern indigo snake.

Florida Scrub Jay

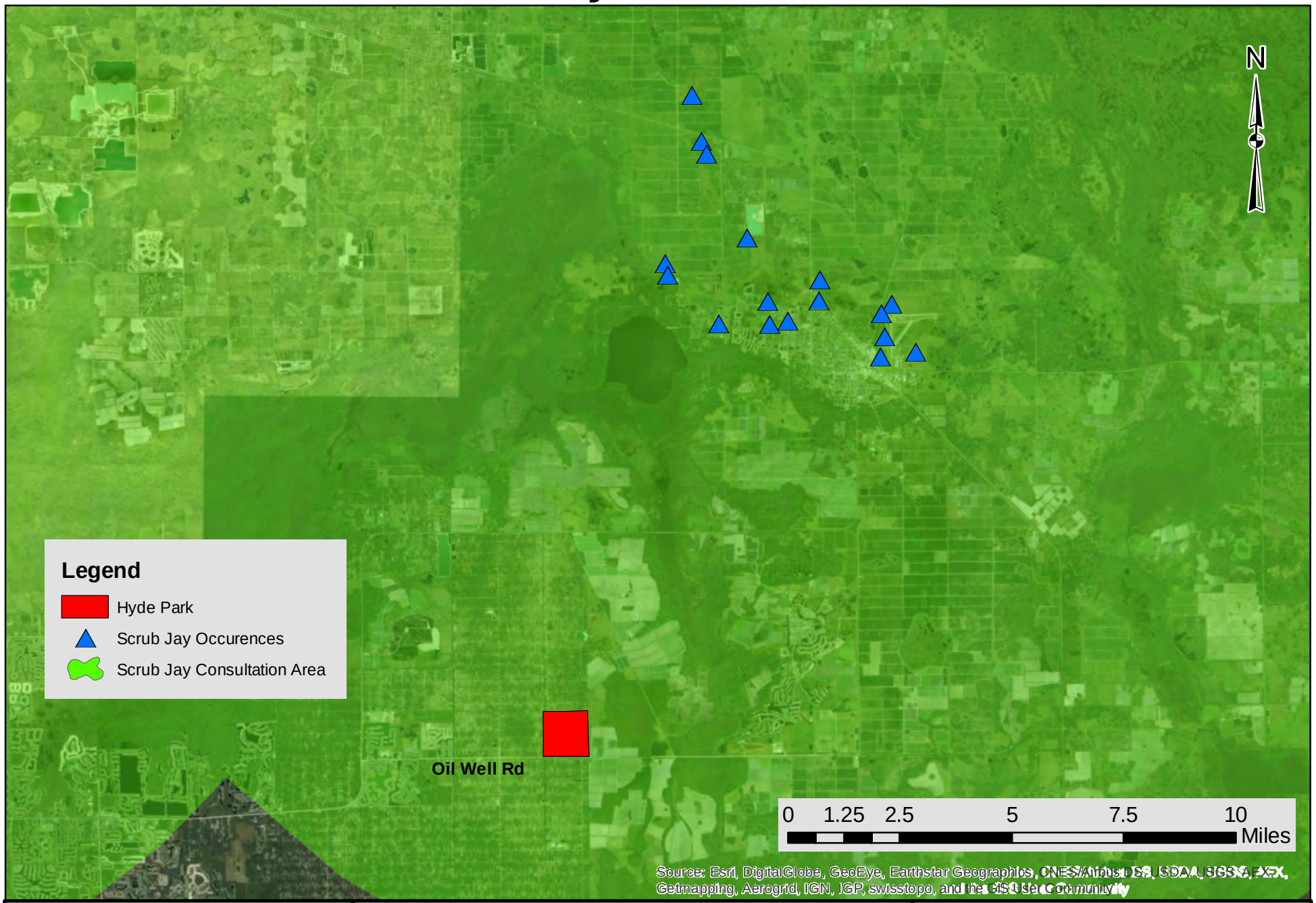
The property is within the FWS's Florida scrub jay consultation area (Figure 3). The Florida scrub jay requires very specific habitat types vegetated by specific species of scrubby oaks. As stated above, the entire site has been substantially altered and no native habitats or oaks are present on the property. No Florida scrub jays or their nests have been observed on-site. The closest Florida scrub jay occurrence is 9.4± miles to the northeast near Immokalee.

Therefore, the proposed project will not likely adversely affect the Florida scrub jay.

Audubon's crested caracara

The property is within 1.5± miles of the FWS's Audubon's crested caracara consultation area (Figure 4). Audubon's crested caracara is a raptor that typically nests in solitary or small groups of cabbage palms within larger areas of open grasslands. No cabbage palms greater than six feet in height are present on-site. No Audubon's crested caracara

Hyde Park



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Property boundary is approximate.
Maped based on information obtained from the Florida Fish and Wildlife Conservation Commission.

Figure 3. Florida Scrub Jay Consultation Area and Occurences Map

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Y:\NEAL-16\GIS_GPS\Scrub Jay Map.mxd

Hyde Park

8

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Property boundary is approximate.
Maped based on information obtained from the Florida Fish and Wildlife Conservation Commission.

Figure 4. Audubon's Crested Caracara Consultation Area and Occurences Map

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Fort Myers (239) 334-3680

Y:\NEAL-16\GIS_GPS\Caracara Map.mxd

or their nests have been observed on the property. The closest Audubon's crested caracara nest is 15.2± miles to the east.

Therefore, the proposed project will not likely adversely affect the Audubon's crested caracara.

Everglades Snail Kite

The property is within the FWS's Everglades snail kite consultation area (Figure 5). The Everglades snail kite Priority Management Zone is 36± miles to the northeast and Everglades snail kite Critical Habitat is 43± miles to the southeast. Everglades snail kite habitat typically consists of freshwater marshes and the shallow vegetated edges of lakes (natural and man-made) where apple snails can be found. Suitable foraging habitat for the snail kite is typically a combination of low profile marsh with areas of shallow open water, which is relatively clear and calm. Snail kites require foraging areas that are relatively clear and open in order to visually search for apple snails. Therefore, dense growth of herbaceous or woody vegetation is not conducive to efficient foraging. Nesting almost always occurs over water, which deters predation and typically consists of small trees including willow or in herbaceous species such as cattail, saw-grass (*Cladium jamaicense*), and bulrush (*Scirpus* sp.). No Everglades snail kites or their nests have been observed on-site. The closest Everglades snail kite nest is 38± miles to the southeast.

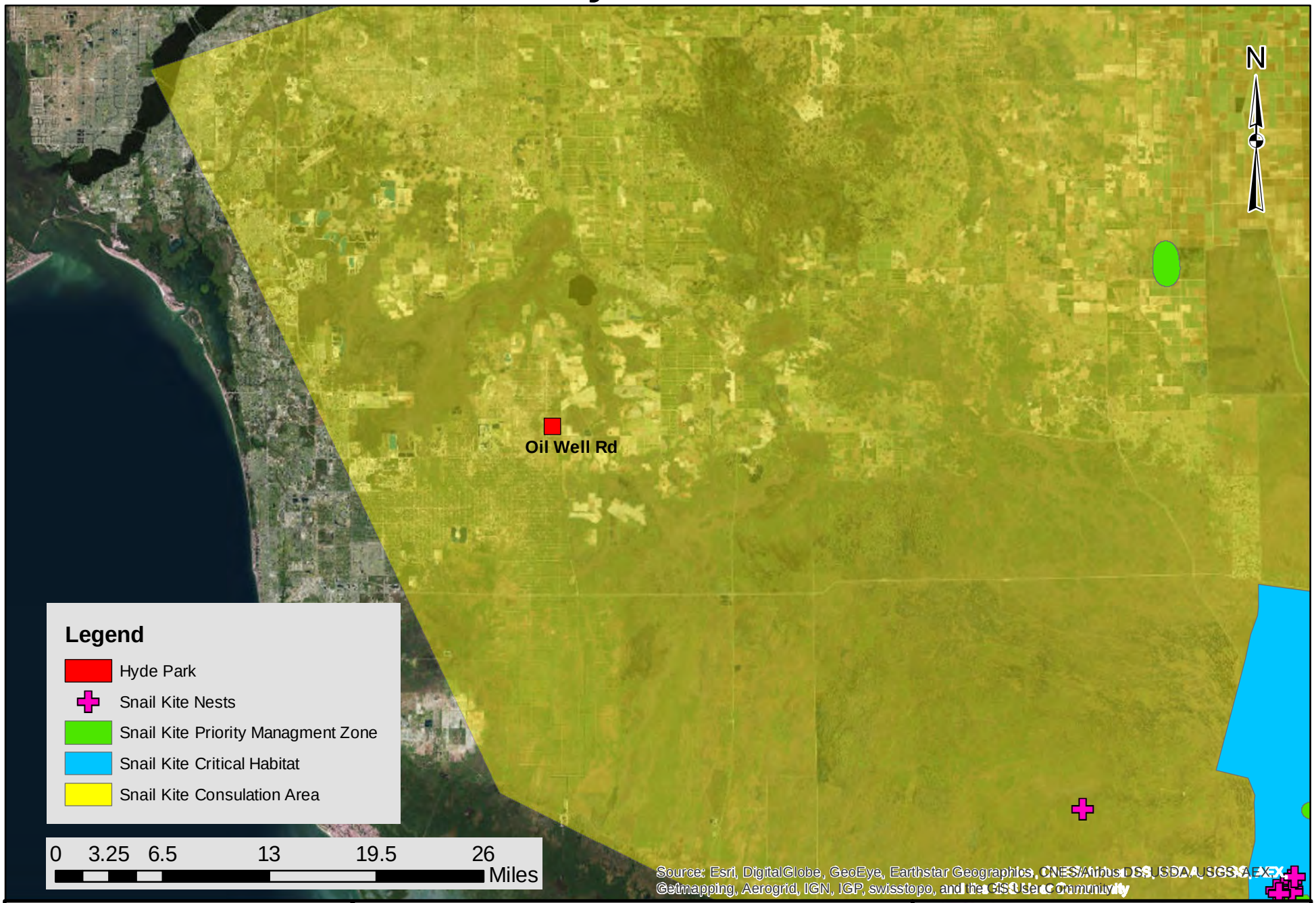
Therefore, the proposed project will not likely adversely affect the Everglades snail kite.

Wood Stork

The property is within the FWS's wood stork core foraging area. Wood storks feed via tactolocation or grope foraging. In order for this feeding strategy to be successful, the foraging habitat must concentrate fish (typically via water draw down), have calm water two to 15 inches in depth, and be uncluttered by dense patches of aquatic vegetation. The vast majority (391.30± acres) of the aquatic habitats on-site consists of either open water areas that are permanently inundated by more than an estimated eight feet of water (FLUCCS Code 742) or are densely vegetated by cattail that are permanently inundated by more than an estimated two to four feet of water (FLUCCS Code 742V). Given the depth of water, the lack of seasonal draw down capable of concentrating prey, and the dense vegetation, these areas do not provide potential wood stork foraging habitat.

The 11.84± acres of agricultural ditches (FLUCCS Code 514) and 1.15± acres of exotic dominated isolated wetland (FLUCCS Code 619) do provide limited potential wood stork foraging habitat. Based on the attached Wood Stork Foraging Analysis Calculator (Appendix B) These ditches and wetlands currently provide 8.77 kgrams of wood stork biomass. The applicant will be purchasing 0.46 UMAM credits at the Panther Island Expansion Mitigation Bank for impacts to state jurisdictional wetlands and 992 Panther Habitat Units (PHU) at a FWS approved panther conservation bank. Taken together, this exceeds the current on-site value.

Hyde Park



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Property boundary is approximate.
Maped based on information obtained from the Florida Fish and Wildlife Conservation Commission.

Figure 5. Everglades Snail Kite Consultation Area, Critical Habitat, Priority Management Zones, and Occurences Map

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Fort Myers (239) 334-3680

Y:\NEAL-16\GIS_GPS\Snail Kite Map.mxd

Therefore, the proposed project will not likely adversely affect the wood stork.

Florida Bonneted Bat

The project is located within the Florida bonneted bat consultation area but is not located within a focus area (Figure 6). The subject site is located approximately 0.8 miles northwest of a FWS focus area for the Florida bonneted bat. The are no large trees on the property of sufficient size to contain a potential Florida bonneted bat roost cavity. No Florida bonneted bats or potential roost cavities have been observed on-site.

Therefore, the proposed project will not likely adversely affect the Florida bonneted bat.

Florida Panther

The property is located within the Secondary Zone (Figure 7). Florida panther telemetry points have been recorded on adjacent lands, particularly to the east and southeast. The entire site has been substantially disturbed by previous agricultural or mining activities. No native habitats are present on the property.

A traffic study has been prepared by JMB Transportation Engineering, Inc. That study concluded that the project will not adversely impact the level of service of the surrounding road network. The majority of the residential traffic will be to/from the west as people travel towards the urbanized Naples area and not towards more rural areas to the east more frequently utilized by Florida panthers. The traffic associated with the commercial and institutional uses will also follow that pattern. In addition, given the small size of these uses compared to the residential component, it is anticipated that these uses will serve the residence of Hyde Park thereby capturing traffic internal to the project. A copy of the study is provided as Appendix C.

The number of Panther Habitat Units (PHU) required to compensate for impacts to potential panther habitat was calculated using the FWS's Panther Habitat Assessment Workbook. Based on recent communications with FWS staff, the FWS is currently using a Base Ratio of 1.98 instead of the 2.50 Base Ratio contained in the Excel workbook. Based on this analysis (Appendix D), a total of 992 PHU are required to compensate for impacts to potential panther habitat. The 992 PHU will be purchased from a panther conservation bank approved by the FWS.

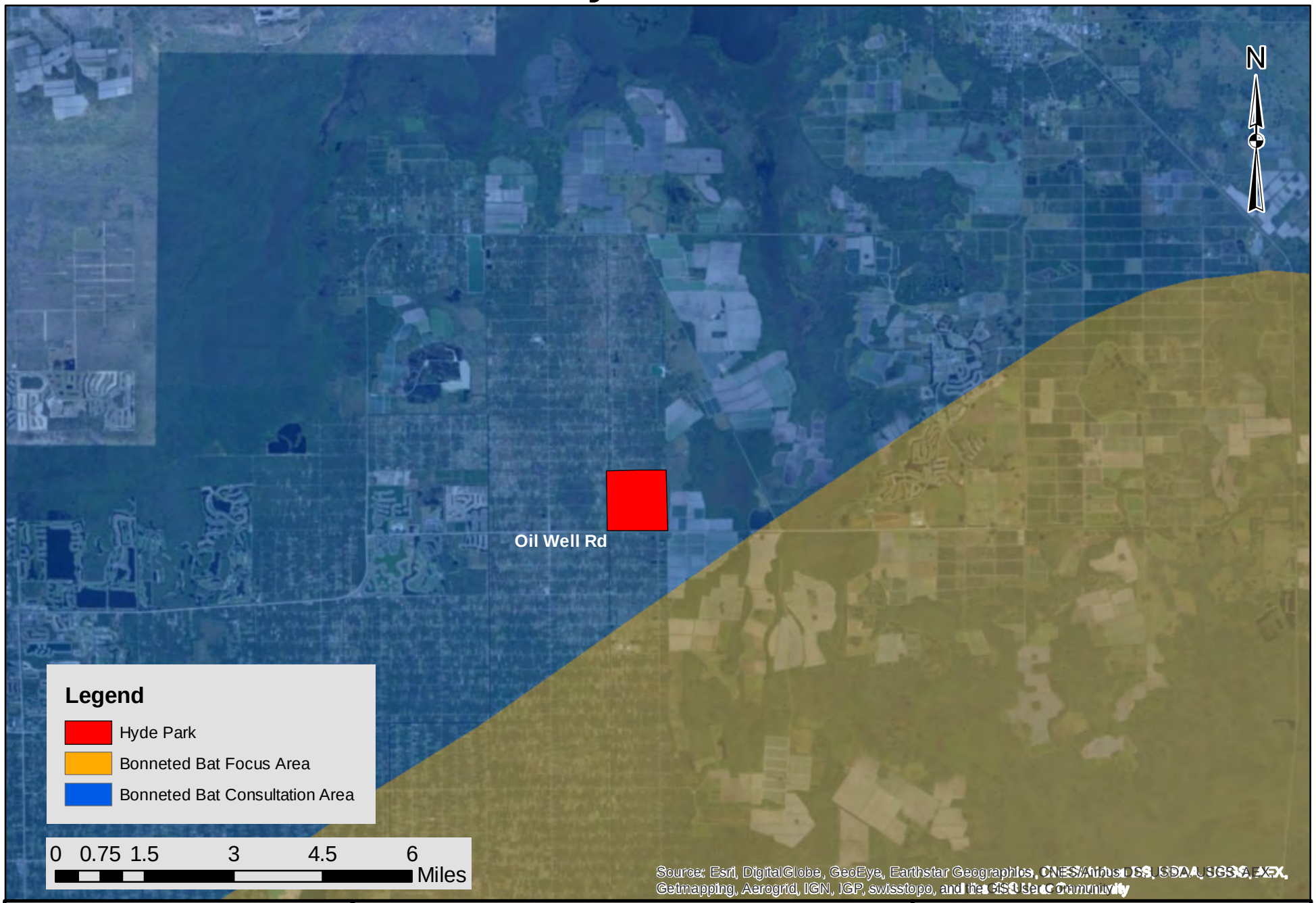
Therefore, the proposed project will not likely adversely affect the Florida panther.

SUMMARY AND CONCLUSIONS

The entire site has been substantially disturbed by previous agricultural or mining activities dating back to the 1980's. Over half the property consists of seven borrow pits (391.30± acres). No native habitats are present on the property.

The property contains potential habitat for several federally listed species and is within the FWS's consultation areas for several more. A listed species survey was conducted on February 6 and 7, 2018 with observations made during other field work in June and

Hyde Park



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Property boundary is approximate.
Maped based on information obtained from the Florida Fish and Wildlife Conservation Commission.

Figure 6. Florida Bonneted Bat Consultation and Focus Areas Map

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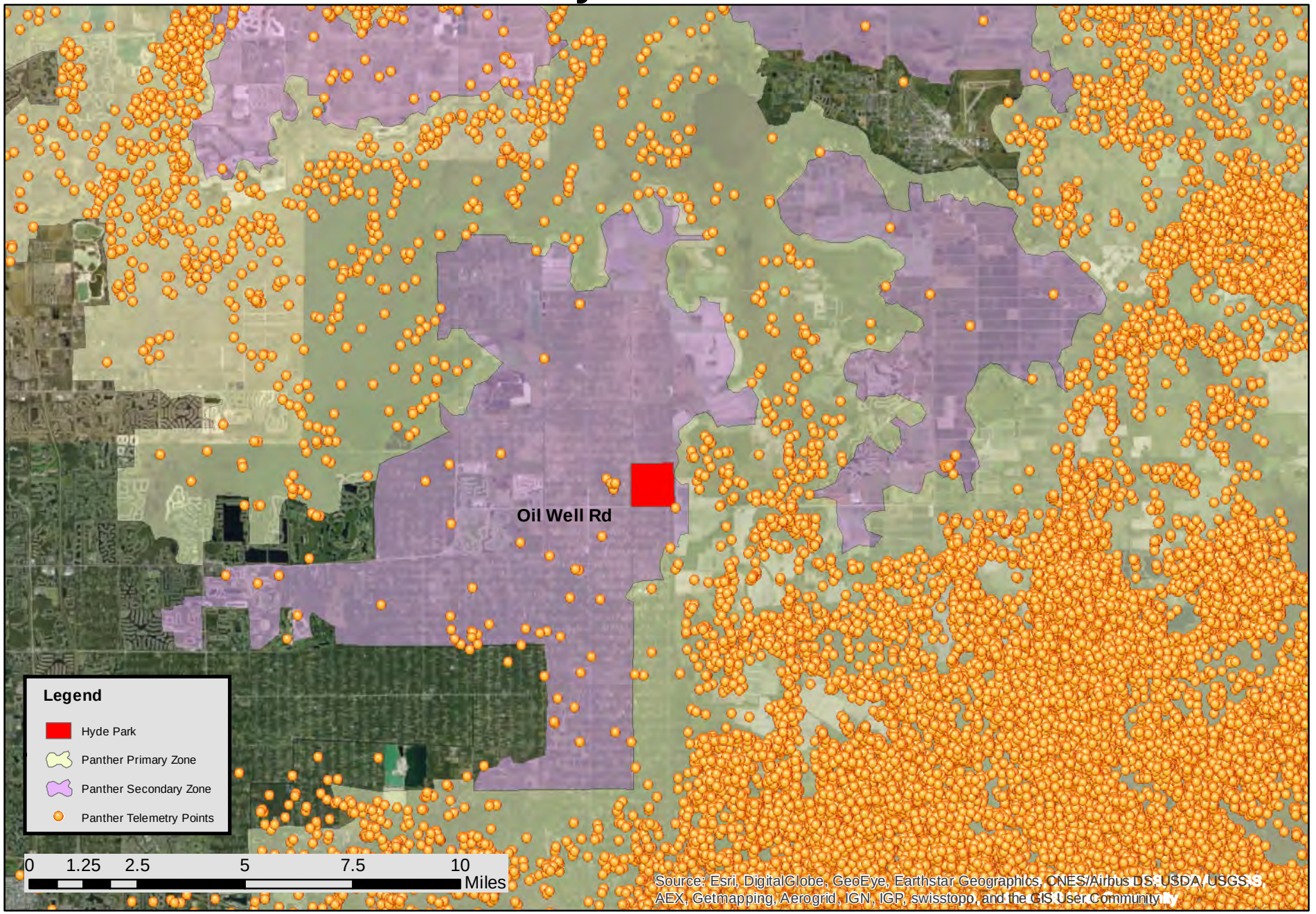
Hyde Park



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Property boundary is approximate. Data obtained from the Florida Fish and Wildlife Conservation Commission

Figure 7. Panther Zones and Telemetry Map

DexBender Environmental Consulting

neal16\GIS-GPS\Panther Telemetry

July 2017. No species listed by the FWS were observed on the site during the protected species survey. In addition to the site inspection, a search of the FWC species database (updated June 2017) revealed no known protected species within the property boundary.

The applicant proposes to construct a residential development with accessory commercial and institutional uses. This will require the reshaping of the borrow areas to match the development plan.

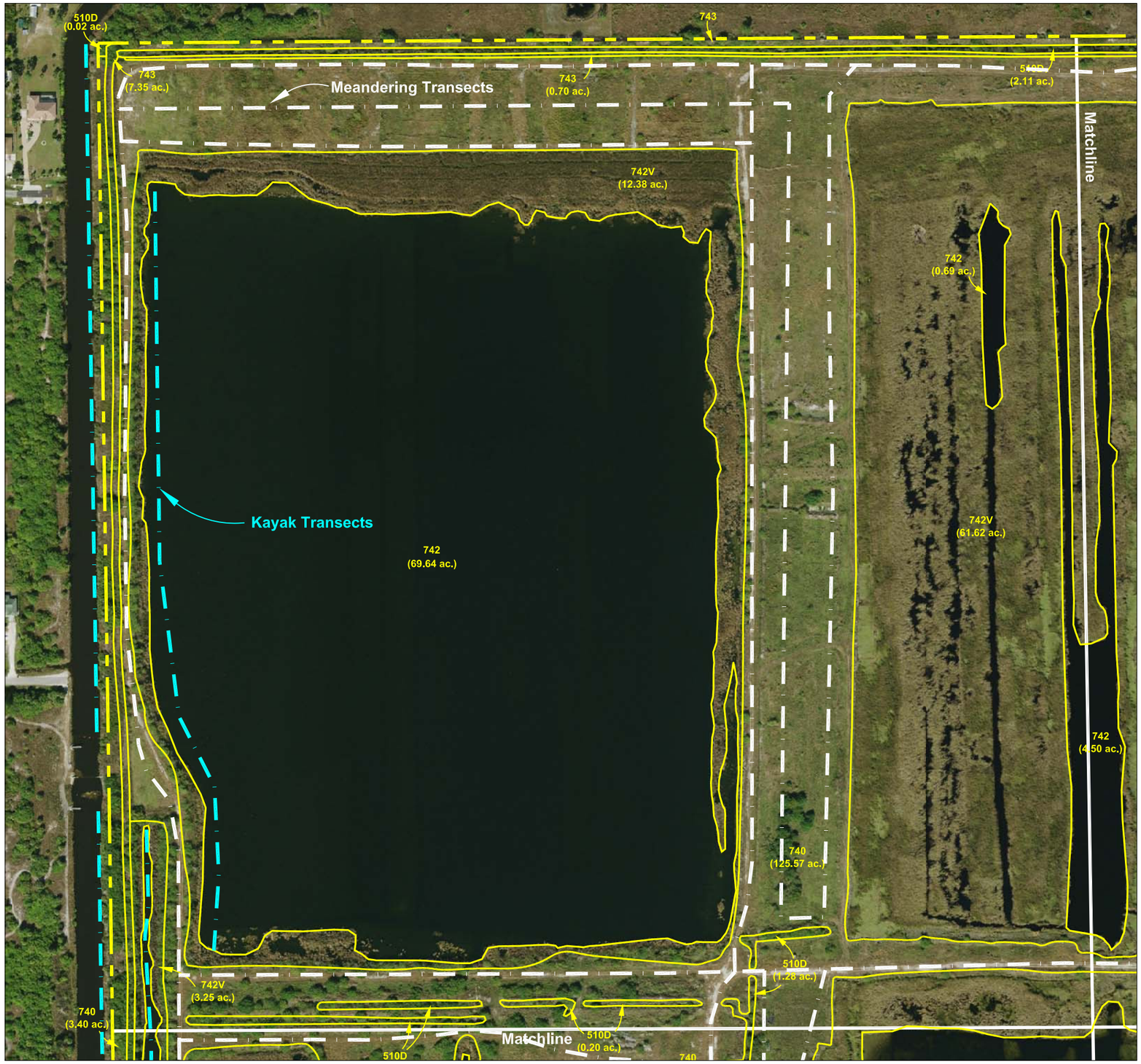
In order to address impacts to potential habitat for federally listed species, the applicant will:

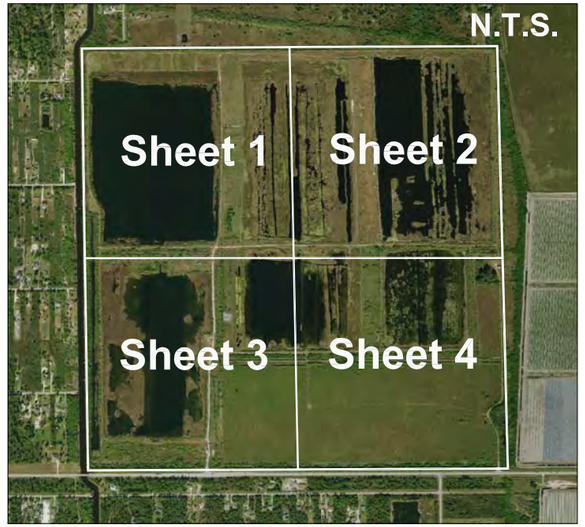
- Implement the 2013 Standard Protection Measures for the Eastern Indigo Snake.
- Purchase 992 PHU from a panther conservation bank approved by the FWS.

Based on the information provided above, the proposed project will not likely adversely affect any federally listed species.

Appendix A

Protected Species Assessment Maps





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SCALE FEET

SECTION: 16
TOWNSHIP: 48 S
RANGE: 28 E

FLUCCS	Description	Acreage
211	Improved Pastures	112.99 ac.
437	Australian Pines	0.84 ac.
510D	Ditches	11.84 ac.
619	Exotic Wetland Hardwoods	1.15 ac.
740	Disturbed Land	125.57 ac.
742	Borrow Areas	226.81 ac.
742V	Vegetated Borrow Areas	164.49 ac.
743	Berms	11.10 ac.
	Total	654.79 ac.

Notes:
1. *Property boundary and lake top of bank provided by Hole Montes, Inc.*
2. *Mapping based on photointerpretation of 2017 aerial photography and ground truthing in June and July 2017.*
3. *Delineation of jurisdictional wetlands and surface waters field reviewed/approved by the COE.*
4. *FLUCCS legend includes overall site acreages.*
5. *Interior berms are not depicted.*

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Protected Species Assessment Map - Sheet 1

Hyde Park

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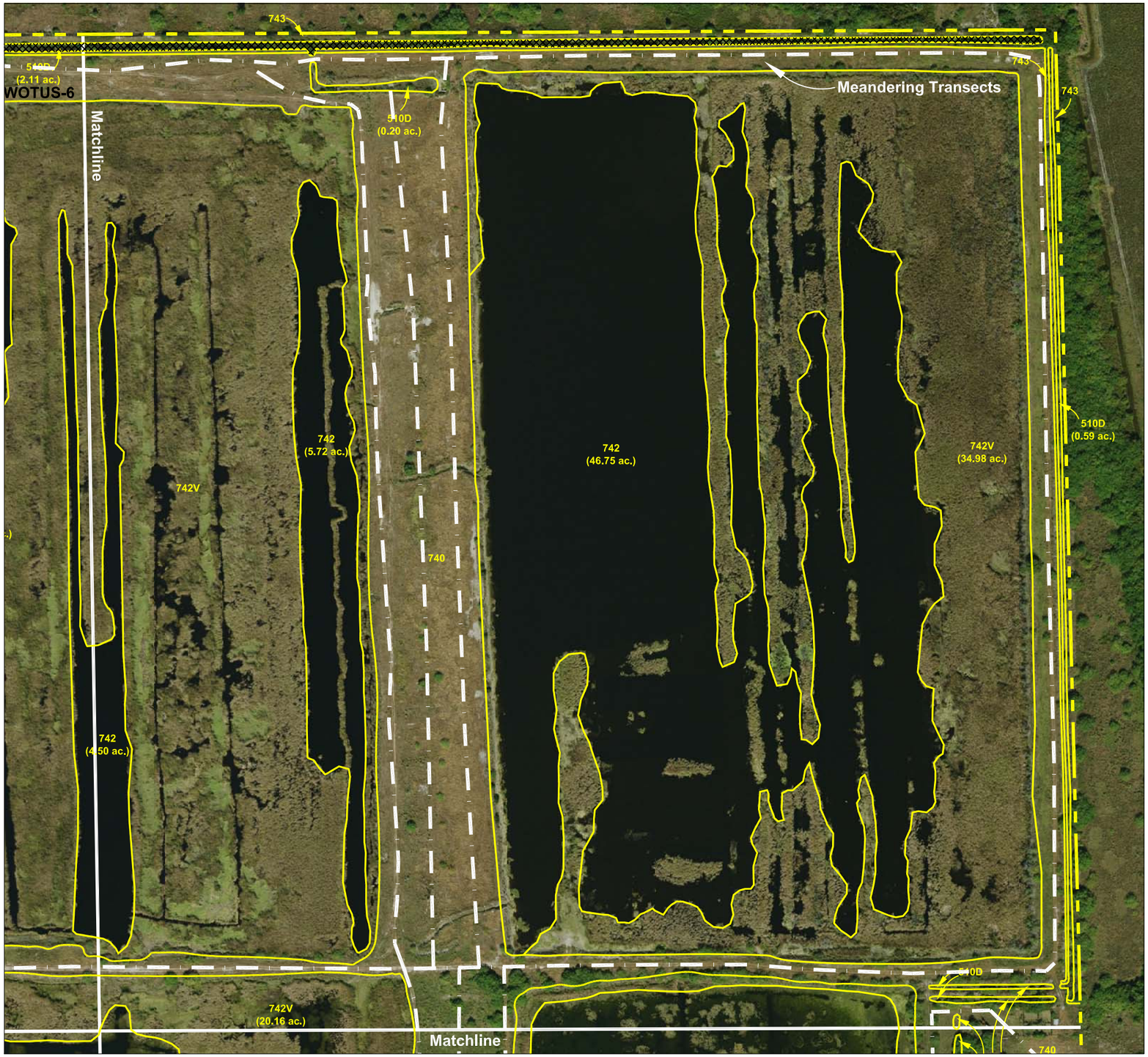

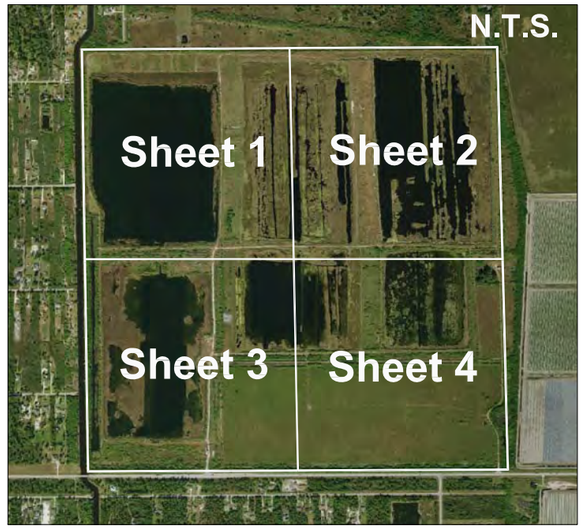

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SECTION: 16
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RANGE: 28 E

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Protected Species Assessment Map - Sheet 2

Hyde Park

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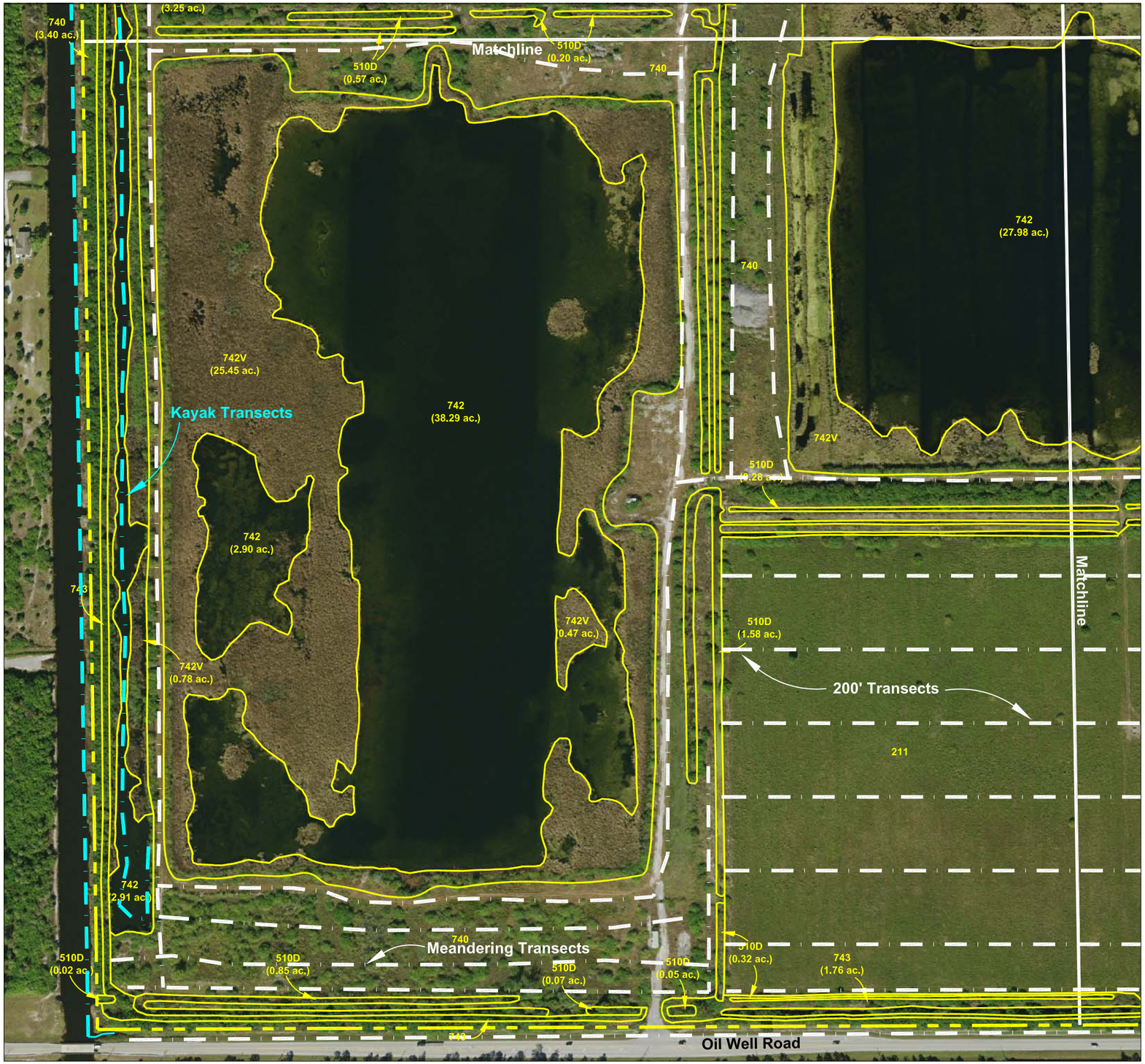

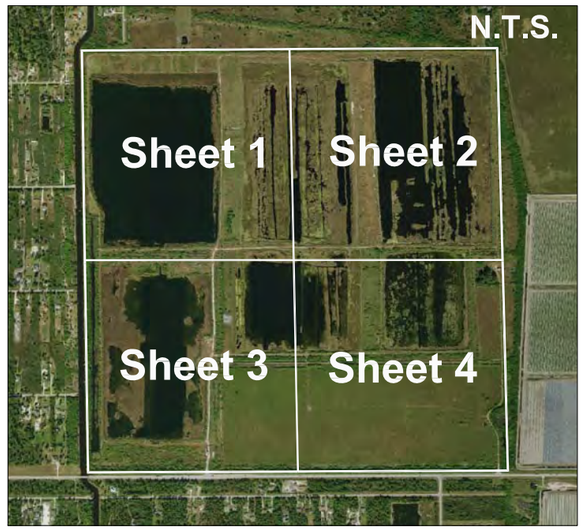

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SCALE FEET

SECTION: 16
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Protected Species Assessment Map – Sheet 3

Hyde Park

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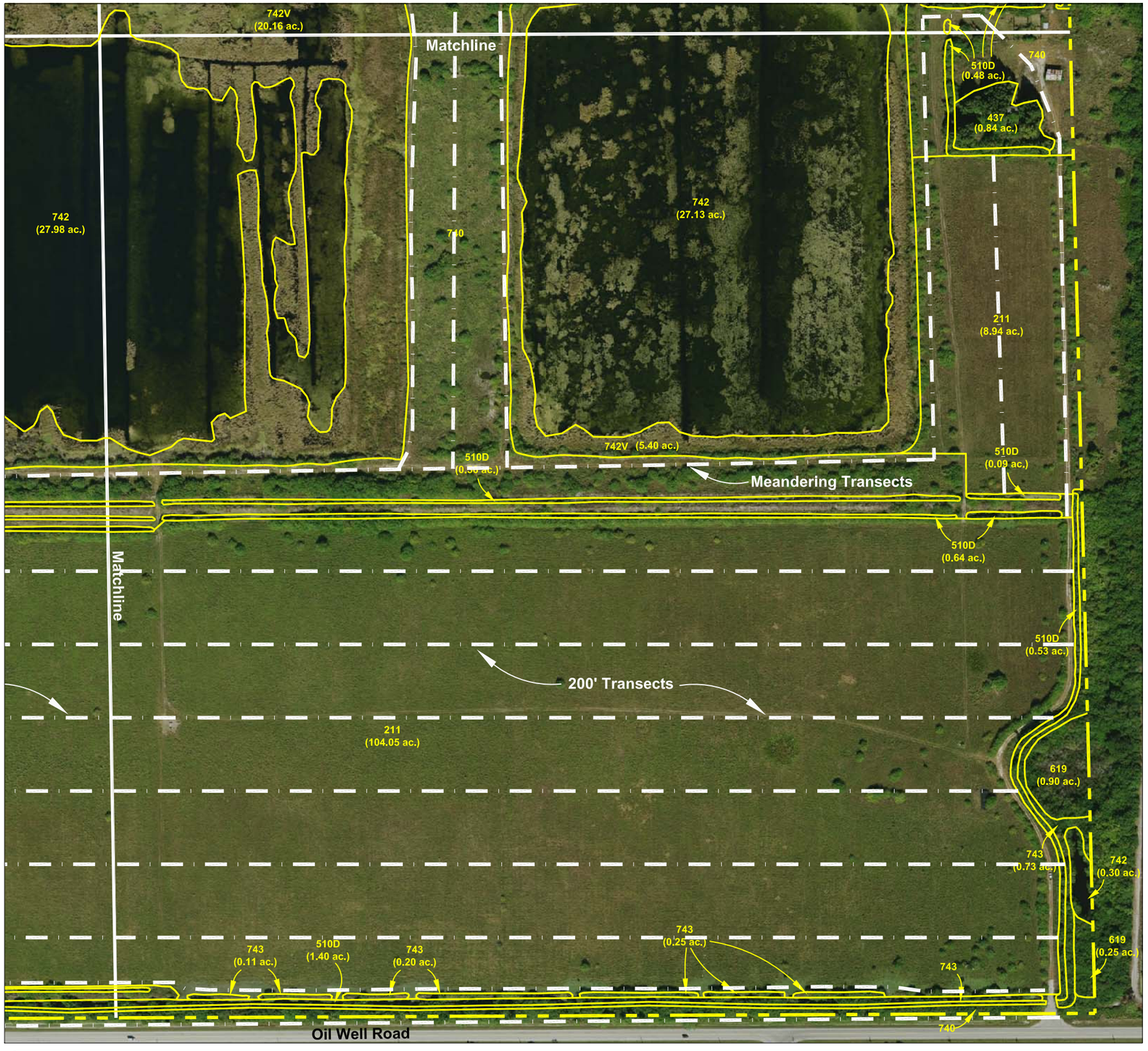

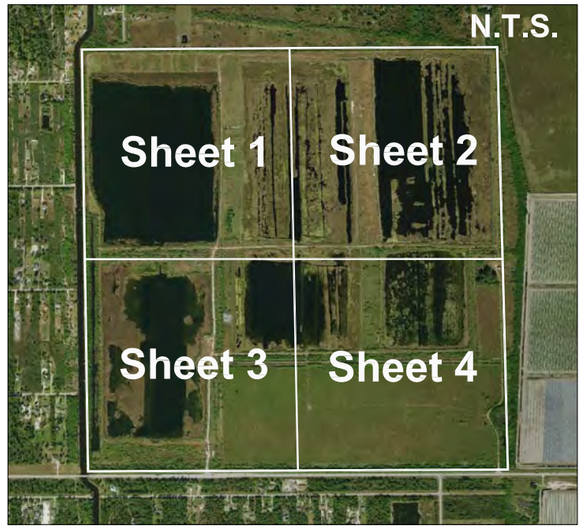

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SECTION: 16
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4. *FLUCCS legend includes overall site acreages.*
5. *Interior berms are not depicted.*

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Protected Species Assessment Map - Sheet 4

Hyde Park

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FORT MYERS 239-334-3680

Appendix B

Wood Stork Foraging Analysis Calculator

Wood Stork Foraging Analysis Calculator
Hyde Park

Hydroperiod	Existing Footprint		Preserve Areas				Net Change Per Hydroperiod Class	
			Pre Enhancement		Post Enhancement			
	Acres	Kgrams	Acres	Kgrams	Acres	Kgrams	Acres	Kgrams
Class 1: 0 to 60 Days							0.0	0.00
Class 2: 60 to 120 Days	12.99	8.77					-13.0	-8.77
Class 3: 120 to 180 Days							0.0	0.00
Class 4: 180 to 240 Days							0.0	0.00
Class 5: 240 to 300 Days							0.0	0.00
Class 6: 300 to 330 Days							0.0	0.00
Class 7: 330 to 365 Days							0.0	0.00
TOTAL	12.99	8.77	0.0	0.00	0.0	0.00	-13.0	-8.77

IMPACT AREA								
Hydroperiods	**Acres**	**% exotics**	**F.S.V**	**m^2**	**m^2 suitable**	**fish g/m^2**	**available fish**	**55% consum.**
Class 2	1.15	>90	0.00	4,653.90	0.00	0.52	0.00	0.00
Class 2	11.84	25-50	0.64	47,914.98	30,665.58	0.52	15,946.10	8,770.36
TOTAL	**12.99**							

Total Biomass within Existing Footprint	8.77		
Total Biomass within Preserve Area Pre-Enhancement	0.00	**Net Change**	-8.77
Total Biomass within Preserve Area Post-Enhancement	0.00		

Appendix C
Traffic Study

JMB TRANSPORTATION ENGINEERING, INC.

TRAFFIC/TRANSPORTATION ENGINEERING & PLANNING SERVICES

TRAFFIC IMPACT STATEMENT

For

Collier Lakes Village SRA

(Oil Well Road, Collier County, Florida)

June 12, 2018
Revised November 1, 2018

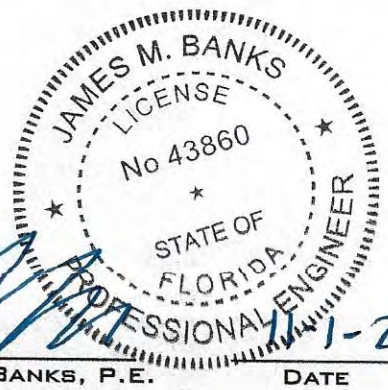
County TIS Review Fees
TIS Methodology Review Fee = $500.00
TIS (Major Study) Review Fee = $1.500.00

Prepared by:

JMB TRANSPORTATION ENGINEERING, INC.
4711 7TH AVENUE SW
NAPLES, FLORIDA 34119

CERTIFICATE OF AUTHORIZATION NO. 27830

(PROJECT NO. 170414)



11-1-2018

JAMES M. BANKS, P.E. — DATE
FLORIDA REG. NO. 43860

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Conclusions

Based upon the findings of this report, it has been determined that Collier Lakes Village SRA will not adversely impact the surrounding road network or cause any roadways to operate below their adopted levels of services. This conclusion is based upon the findings that Collier County's existing plus committed (E + C) road network has adequate capacity to accommodate the site-generated traffic associated with the development of 1,800 dwelling units, 45,000 square feet of neighborhood commercial retail/office and 18,000 square feet of governmental/civic/institutional land uses. Therefore, the project will not be required to fund any off-site roadway improvements/mitigation, other than the payment of more than $13,475,000.00 in road impact fees, which will be used to fund a portion of the costs of area-wide improvements as set forth by Collier County's CIE and Long-Range Transportation Plan (LRTP).

Although Collier Lakes will not adversely impact any roadways, or cause any roadways to operate below their adopted levels of services, and the E + C network will continue to operate at acceptable levels of service at project build-out, the Developer will be required to pay for its portion of "consumed" capacity via payment of road impact fees. As set forth by Collier County's Impact Fee Ordinance, the fees are a pro rata assessment towards the funding of area-wide transportation improvements in order to support new growth. The amount of road impact fees paid per type of land use are determined via a "consumption-based impact fee approach", in which new development is charged based upon the proportion of vehicle-miles of travel (VMT) that each unit of new development is expected to consume of a lane mile of roadway network. The cost of consumed lane mile is based upon current roadway construction costs within Collier County. Therefore, the payment of road impact fees is the project's pro rata share of funding transportation improvements that are deemed necessary to support the demands generated by new growth.

In exchange for receiving road impact fee credits, the Developer will dedicate 100' of right-of-way along the project's southern boundary, which will be needed to widen Oil Well Road. Also, in exchange for receiving road impact fee credits, the Developer will provide stormwater runoff storage capacity for the portion of Oil Well Road in front of the project. By doing so, there will be cost savings to Collier County by reducing the size and/or number of pond sites.

The estimated payment of road impact fees is subject to change pending the project's final build-out schedule, and a portion of the impact fees will be paid in the form of equivalent value contributions (e.g., r/w dedication, stormwater cost savings to the County, etc.).

Planned and/or Committed Area-Wide Transportation Improvements

Based upon the area's existing and forecasted traffic demands, it was determined that the E + C road network will continue to operate at acceptable levels of service for project build-out conditions. However, the "anticipated" traffic demands for that area are subject to change pending the status of other large-scale projects that may become entitled for development (e.g., rural lands west). It is for this reason, Collier County Government has

accelerated the planning and funding of several major roadway improvement projects. Transportation improvements that are planned or have been funded are described below in Table A.

Table A
Planned and/or Committed Area-Wide Transportation Improvements

Transportation Improvement	Status	Notes
Oil Well Road (Everglades-to-Desoto) (widen to 4-lanes or 6 lanes)	Planned	Collier Lakes to set aside 100' r/w and possibly stormwater storage
8th Street Bridge (N/S/ Collector Randall-to-Golden Gate Blvd)	Funded	Reduces traffic demand on Randall Blvd & Immokalee Rd
16th Street Bridge (N/S collector between Randall and Golden Gate)	Funded	Reduces traffic demand on Randall Blvd & Immokalee Rd
Vanderbilt Beach Road Ext (C.R. 951 to 8th street) (New 3-lane road within 6 lane footprint)	Funded	Reduces traffic demand on Randall Blvd, Immokalee Rd & Golden Gate Blvd
Randall Boulevard (Everglades-to-Desoto) (widen to 4-lanes or 6 lanes)	Planned	
Randall Boulevard & Immokalee Road (at-grade & flyover improvements)	Conceptual (PD&E Study)	
Oil Well Road to Randall Connector (S-Curve Connector or Other Options)	Conceptual (PD&E Study)	
Everglades Boulevard (Oil Well-to-Golden Gate) (widen to 4-lanes or 6 lanes)	Planned	
Desoto Boulevard (Oil Well-to-Golden Gate) (widen to 4-lanes or 6 lanes)	Planned	
Desoto Boulevard & Oil Well Road Intersection (at-grade improvements & traffic signal)	Anticipated	Collier Lakes will pay pro rata share towards improvements

Site Access Improvements

Collier Lakes proposes to have two (2) full access points on Oil Well Road. The western access will be a "T" configuration intersection. A left ingress and right ingress turn lane will be required to be constructed and two (2) outbound lanes (i.e., separate left and right exiting) will be warranted. The eastern access will be aligned with the intersection of Desoto Boulevard & Oil Well Road. During the early phases of project development, the northbound and southbound approaches will be controlled via a STOP sign. Left and right ingress turn lanes and two (2) outbound lanes for separate thru/left and right turns will be required. The Developer will pay a pro rata share towards the cost of installing a traffic signal, if warrants are satisfied.

The final design of the site access improvements will be established at the time of acquiring development approval.

Methodology

On May 21, 2018, a methodology meeting was conducted with Mr. Michael Sawyer, Mr. Stephen Baluch and others of Collier County's Traffic Operations and Transportation Planning Department. The results of that meeting are provided in the attached Traffic Impact Statement Methodology Report, dated May 25, 2018 (refer to pages M1 thru M12). A follow-up methodology review was performed by staff and those comments/responses are also included as pages MA1 thru MA5.

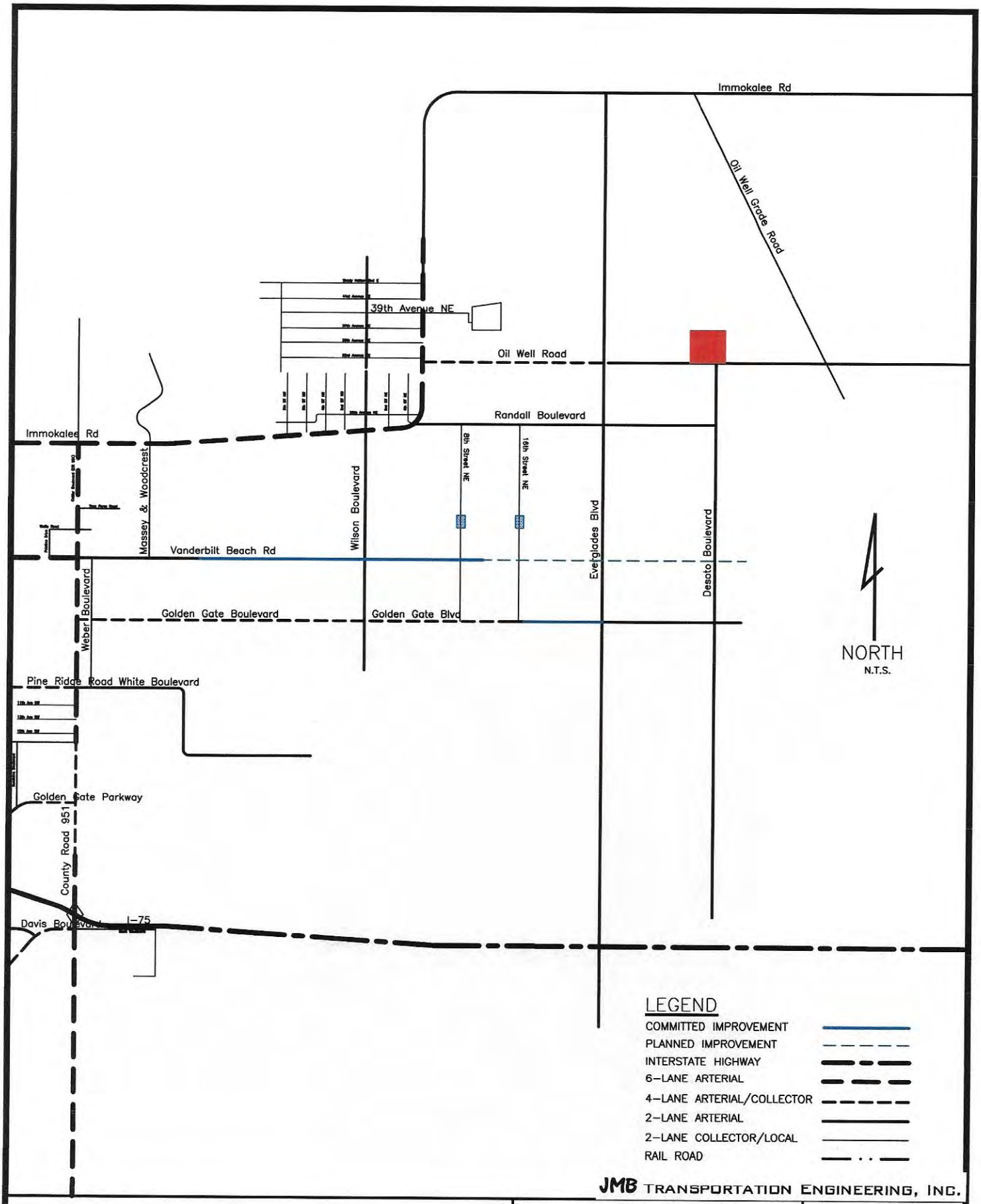
Scope of Project

Collier Lakes Village SRA is a proposed multi-use project that will consist of 1,500 single-family and 300 multi-family dwelling units, 45,0000 square feet of neighborhood commercial/retail and 18,000 square feet of governmental/institutional land uses. The Developer has the option of converting single-family units to multi-family units at a ratio of 1:1, but no more than 1,800 total units can be constructed. The maximum number of single-family that can be converted to multi-family will be 200 dwelling units. The site is located on the north side of the intersection of Desoto Boulevard & Oil Well Road, within Collier County, Florida. Access to the site will provided via two (2) full access points on Oil Well Road. The western access will be a "T" configuration intersection and the eastern access will be aligned with the intersection of Desoto Boulevard & Oil Well Road. For additional site details, refer to the MCP prepared by Hole Montes & Associates.

Table B
Proposed Land Uses

Proposed Land Uses	Units/Size
Single-Family**	1,500 d.u.'s
Multi-Family**	300 d.u.'s
Commercial/ Retail	45,000 s.f.
Governmental/Institutional	18,000 s.f.

** The Developer has the option of converting single-family units to multi-family units at a ratio of 1:1, but no more than 1,800 total units can be constructed. The maximum number of single-family that can be converted to multi-family will be 200 dwelling units.



JMB TRANSPORTATION ENGINEERING, INC.

Collier Lakes

June 5, 2018

Project Location & Roadway Classification

FIGURE 1

LEGEND

COLOR	LAND USE	ACRES
	LANDSCAPE / PERIMETER BUFFER	25.25
	LAKE MAINTENANCE EASEMENT / OPEN SPACE	48.76
	LAKES / WATER MANAGEMENT	221.77
	NEIGHBORHOOD EDGE	202.29
	NEIGHBORHOOD GENERAL	42.80
	VILLAGE AMENITY & WELLNESS CENTER	10.15
	PRESERVE + 25' UPLAND BUFFER	2.21
	ROW RESERVATION	12.21
	50' ROW 60' ROW 80' ROW MAIN ENTRY ROAD ROW	61.86
	POTENTIAL FUTURE RESIDENT ONLY ACCESS	0.32
	* VILLAGE CENTER - MIXED USE	27.17
	PROJECT BOUNDARY TOTAL =	654.79

*MULTI-FAMILY COMPONENT OF MIXED USED VILLAGE CENTER TO INCORPORATE A MINIMUM OF 2 ACRES OF LAKE INTO SITE PLAN AT TIME OF DEVELOPMENT.

MINIMUM OPEN SPACE : 64%

Open Space Calculations*

Land Use	Acreage	Open Space (percentage)	Open Space (acres)
Lake	221.77	100	221.77
Village Amenity and Wellness Center	10.15	40	4.06
Lake Maintenance Easement/Open Space	48.76	100	48.76
Landscape Buffers	25.25	100	25.25
Neighborhood General and Neighborhood Edge	245.09	38	93.13
Preserve	2.21	100	2.21
Internal ROW	62.18	15	9.33
Village Center	27.17	30	8.15
Total	642.58		412.66

*Excludes future right-of-way reservation (12.21 acres).

4.2

LETTER	REVISIONS	DATE
A		
A		
A		
A		

COLLIER LAKES

DESIGNED BY	B.E.J.	DATE	5/2018
DRAWN BY	M.S.K.	DATE	5/2018
CHECKED BY	HMA	DATE	5/2018
VERTICAL SCALE		HORIZONTAL SCALE	As Noted

HOLE MONTES
ENGINEERS•PLANNERS•SURVEYORS

950 Encore Way
Naples, FL 34110
Phone: (239) 254-2000
Florida Certificate of Authorization No.1772

SRA MASTER PLAN

THESE DRAWINGS ARE NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED BELOW.

DATE _____

REFERENCE NO.	DRAWING NO.
2017.001	2017.001_Mst
PROJECT NO.	SHEET NO.
2017.001	1 OF 5

Project Generated Traffic

Traffic that can be expected to be generated by Collier Lakes was estimated based upon the guidelines established by the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition. That is, historical traffic data collected at similar land uses was relied upon in estimating the project's traffic. It was determined that land use codes "Single-Family Detached" (LUC 210), "Multi-Family" (LUC 220), "Office Park" (LUC 750), and "Shopping Center" (LUC 820) were most representative. Trips estimated for LUC 820 were adjusted to account for a 30% pass-by rate, and a 15% internal capture rate was applied to both LUC 820 and LUC 750.

As determined, the project could generate 16,701 daily trips and 1,309 vph and 1,685 vph new trips during the AM and PM peak hours, respectively. Table 1A and Table 1B depict the computations performed in determining the project's total trips, new trips, and net external new trips. Table C provides a summary of the trip generation computation results that are shown in Table 1A and Table 1B.

Table C
New Site-Generated Trips
(Summation of Table 1)

Daily Weekday Trips Generated (ADT)	AM Peak Hour Trips Generated (vph)	PM Peak Hour Trips Generated (vph)
16,701	1,309	1,685

TABLE 1A

TRIP GENERATION COMPUTATIONS

Collier Lakes

Residential Trips

Land Use Code	Land Use Description	Maximum Build Schedule
210	**Single-Family Detached Housing**	1,500 Units
220	**Multi-Family (Low Rise)**	300 Units

Code	Trip Period	Trip Generation Equation	Total Trips	Trips Enter/Exit
LUC 210	Daily Traffic (ADT) =	Ln(T) = 0.92Ln(X)+2.71 =	12,559 ADT	
	AM Peak Hour (vph) =	T = 0.71(X)+ 4.80 =	1,070 vph	268 / 802 vph
		25% Enter/ 75% Exit =		
	PM Peak Hour (vph) =	Ln(T) = 0.96Ln(X)+0.20 =	1367 vph	861 / 506 vph
		63% Enter/ 37% Exit =		
LUC 220	Daily Traffic (ADT) =	T = 7.56(X) - 40.86 =	2,227 ADT	
	AM Peak Hour (vph) =	Ln(T) = 0.95Ln(X)-0.51 =	135 vph	31 / 104 vph
		23% Enter/ 77% Exit =		
	PM Peak Hour (vph) =	Ln(T) = 0.89Ln(X)-0.02 =	157 vph	99 / 58 vph
		63% Enter/ 37% Exit =		

Total Residential Trips

New Daily Traffic (ADT) =	14,786 ADT		
New AM Peak Hour (vph) =	1,205 vph	299 /	906 vph
New PM Peak Hour (vph) =	1,524 vph	960 /	564 vph

Total Commercial Internal Capture Trips (15%)

Internal Daily Traffic (ADT) =	*(Refer to Table 1B)*	410 ADT	
Internal AM Peak Hour (vph) =	*(Refer to Table 1B)*	22 vph	15 / 7 vph
Internal PM Peak Hour (vph) =	*(Refer to Table 1B)*	34 vph	15 / 19 vph

Total Residential External Trips

New External Daily Traffic (ADT) =	**14,375 ADT**	
New External AM Peak Hour (vph) =	**1,183 vph**	284 / 899 vph
New External PM Peak Hour (vph) =	**1,490 vph**	945 / 545 vph

TABLE 1B

TRIP GENERATION COMPUTATIONS

Collier Lakes

Commercial Trips

Land Use Code	Land Use Description	Maximum Build Schedule
750	**Office Park**	18,000 s.f.
820	**Shopping Center**	45,000 s.f.

Code	Trip Period	Trip Generation Equation	Total Trips	Trips Enter/Exit	
LUC 750	Daily Traffic (ADT) =	Ln(T) = 0.89Ln(X)+3.1 =	291 ADT		
	AM Peak Hour (vph) =	T= 1.44(X) =	26 ADT	23 / 3	vph
		89% Enter/ 11% Exit =			
	PM Peak Hour (vph) =	T= 1.07(X) =	19 ADT	1 / 18	vph
		7% Enter/ 93% Exit =			
**********					
LUC 820	Daily Traffic (ADT) =	Ln(T) = 0.68Ln(X)+5.57 =	3,493 ADT		
	AM Peak Hour (vph) =	T = 0.5(X)+151.78=	174 vph	108 / 66	vph
		62% Enter/ 38% Exit =			
	PM Peak Hour (vph) =	Ln(T) = 0.74Ln(X)+2.89 =	301 vph	144 / 156	vph
		48% Enter/ 52% Exit =			
			30% Pass-by Rate		
	New Daily Traffic (ADT) =	(ADT) x (% of New Trips)	2,445		
	New AM Peak Hour (vph) =	(AM) x (% of New Trips)	122	76 / 46	vph
		62% Enter/ 38% Exit =			
	New PM Peak Hour (vph) =	(PM) x (% of New Trips)	211	101 / 110	vph
		48% Enter/ 52% Exit =			

Total Commercial Internal Capture Trips (15%)

Internal Daily Traffic (ADT) =	410 ADT		
Internal AM Peak Hour (vph) =	22 vph	15 /	7 vph
Internal PM Peak Hour (vph) =	34 vph	15 /	19 vph

Total Commercial External Trips

New External Daily Traffic (ADT) =	**2,325 ADT**		
New External AM Peak Hour (vph) =	**126 vph**	84 /	42 vph
New External PM Peak Hour (vph) =	**195 vph**	87 /	108 vph

****

****

Total External Trips

New External Daily Traffic (ADT) =	**16,701 ADT**		
New External AM Peak Hour (vph) =	**1,309 vph**	368 /	941 vph
New External PM Peak Hour (vph) =	**1,685 vph**	1,032 /	653 vph

Existing + Committed Road Network
Figure 1 and Table 2A provide a detail of the surrounding E + C road network. Table 2A also shows the roads' respective minimum level of service performance standards and capacity.

Oil Well Road varies from a two-lane to a four-lane major east/west arterial that extends between its western terminus at its intersection with Immokalee Road to S.R. 29 and continues east through rural/agricultural lands to its eastern terminus at the Collier County Line. Between Immokalee Road and Everglades Boulevard, Oil Well Road is classified as a four-lane divided arterial having a maximum LOS D capacity of 2,000 vphpd. Between Everglades Boulevard and Oil Grade Road, Oil Well Road is a two-lane arterial having a maximum LOS D service capacity of 1,100 vphpd Within proximity of the site, the posted speed limit of Oil Well Road is 45 MPH. Collier County's LRTP has identified Oil Well Road to be widened to four or six lanes. Collier Lakes will set aside 100' of right-of-way along its southern boundary to accommodate the widening of Oil Well Road.

8th Street and 16th Street Bridges Collier County has funded the construction of two (2) bridges (i.e., 8th NE and 16th NE streets) that will be completed by 2020/2021, which will provide an alternate means of north/south access for the Randall Boulevard area. More specifically, the bridges will create a north/south interconnect between Randall Boulevard and Golden Gate Boulevard and between Randall Boulevard and the extension of Vanderbilt Beach Road that will substantially reduce traffic demands on Randall Boulevard and Immokalee Road.

Vanderbilt Beach Road Collier County has committed to the funding of Vanderbilt Beach Road Extension, which consists of a three-lane arterial that will be expandable to six-lanes. The road will be extended from its existing eastern terminus (east of C.R. 951) to intersect 8th Street NE and will eventually be extended to Desoto Boulevard. Vanderbilt Beach Road will substantially reduce traffic demands on Immokalee Road, Randall Boulevard and Golden Gate Boulevard. Construction is expected to begin in the year 2021.

Everglades Boulevard is a major two-lane north/south arterial that extends between its southern terminus (south of I-75) to its northern terminus at its intersection with Immokalee Road. Collier County has planned for the future four-laning or six-laning of the Everglades Boulevard.

Desoto Boulevard is a major two-lane north/south arterial that extends between its southern terminus (immediately north of I-75) to its northern terminus at its intersection with Oil Well Road. Collier County has planned for the future four-laning or six-laning of the Desoto Boulevard.

Immokalee Road varies from a two-lane to a four-lane and six-lane major east/west and north/south arterial. The road extends between its western terminus at the Gulf of Mexico to the northern Golden Gate Estates Area and then north/south to the Immokalee

Community and interconnects with S.R. 29. South of Oil Well Road, Immokalee Road is classified as a six-lane divided arterial; and north of Oil Well Road it is classified as a four-lane divided and two-lane arterial. Immokalee Road has a posted speed limit of Immokalee Road is 45 MPH.

Randall Boulevard
Although not significantly impacted by the project, the report acknowledges that Randall Boulevard is expected to fail by the year 2020. However, Collier County has funded the construction of two (2) bridges (i.e., 8th Street NE and 16th Street NE) that will be completed by 2020/2021. These two (2) bridges will provide an alternate means of north/south access to the Randall Boulevard area. More specifically, the bridges will create a north/south interconnect between Randall Boulevard and Golden Gate Boulevard and between Randall Boulevard and the extension of Vanderbilt Beach Road that will substantially reduce traffic demands on Randall Boulevard. Collier County's LRTP has identified future four-laning or six-laning of Randall Boulevard.

Randall Boulevard & Immokalee Road
Collier County is evaluating possible at-grade and flyover improvements to the intersection of Randall Boulevard & Immokalee Road. At this time, no final improvements have been established.

Randall Boulevard & Oil Well Road Interconnect
Collier County is evaluating possible at-grade improvements that would more directly interconnect Oil Well Road to Randall Boulevard. The direct interconnect is expected to provide substantial better traffic flow in the area. At this time, no final improvements have been established.

Project Traffic Distribution

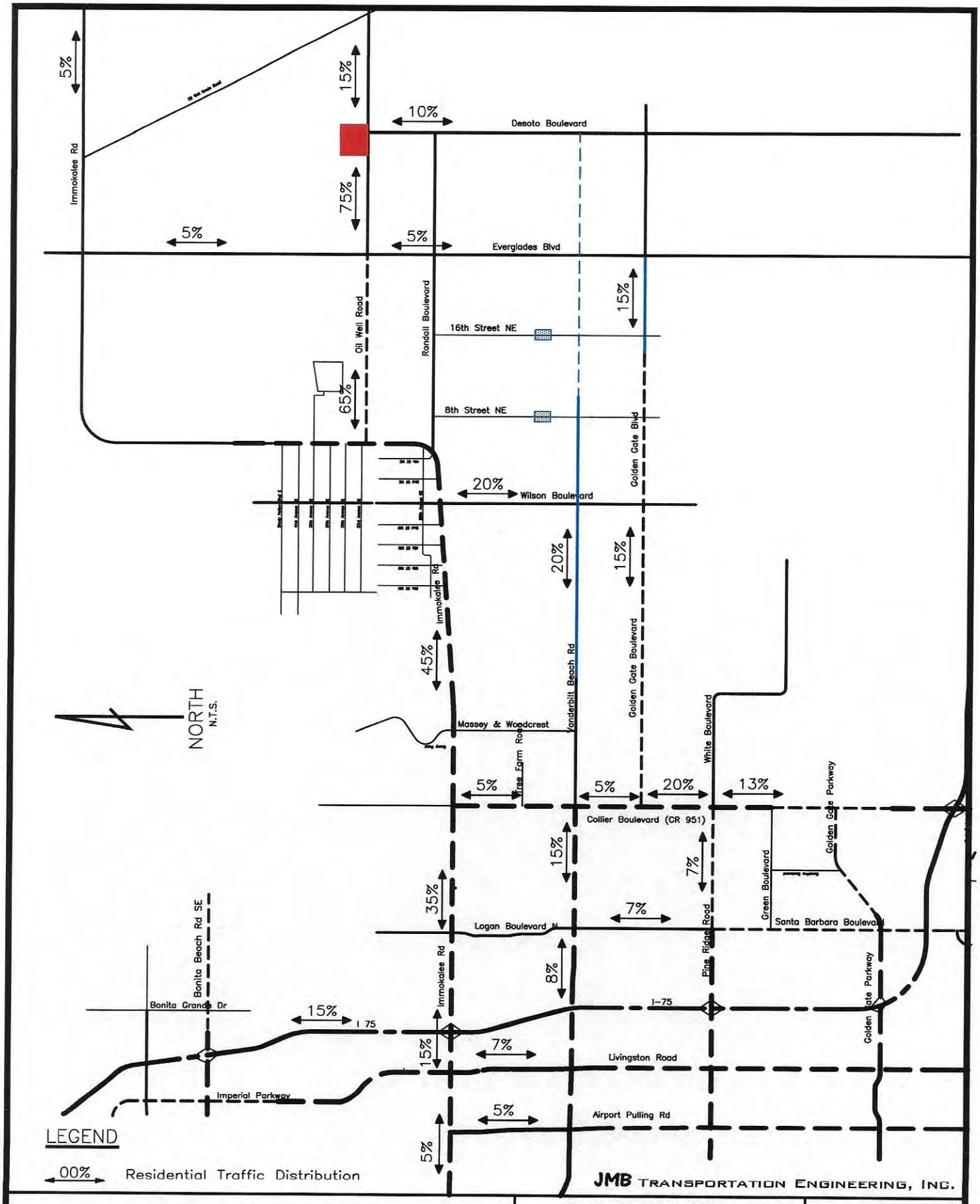
The project's residential trips were distributed to the surrounding road network based upon logical means of ingress/egress, current and future traffic patterns in the area, and the location of surrounding businesses, employment opportunities, recreational areas, schools, etc. Figure 2A depicts the distribution of trips on the percentage of residential traffic generated. Table 2A details the project's PM peak hour residential trips assignments to the surrounding road network.

The project's commercial traffic was distributed to the surrounding road network based upon the location of competing markets and nearby residential densities. *Note, because the size of the commercial is relatively small and is intended to serve the needs of the neighborhood, the trips are expected to be of nearby origin/destination.* Figure 2B depicts the distribution of trips based upon the percentage of the commercial traffic generated. Table 2A details the project's PM peak hour commercial trips assignments to the surrounding road network.

Table 2A summarizes the combined residential + commercial PM peak hour trips assignments to the surrounding road network.

Area of Significant Impact

The area of significant impact was determined based upon Collier County's 2%, 2% and 3% criteria (i.e., if the project's traffic is 2% or more of a roadway's adopted level of service capacity, then the project has a significant impact upon that link). Table 2A describes the project traffic distributions and the level of impact on the surrounding roadways. Roads that were identified as being within the projects area impact are identified in Table 2A.



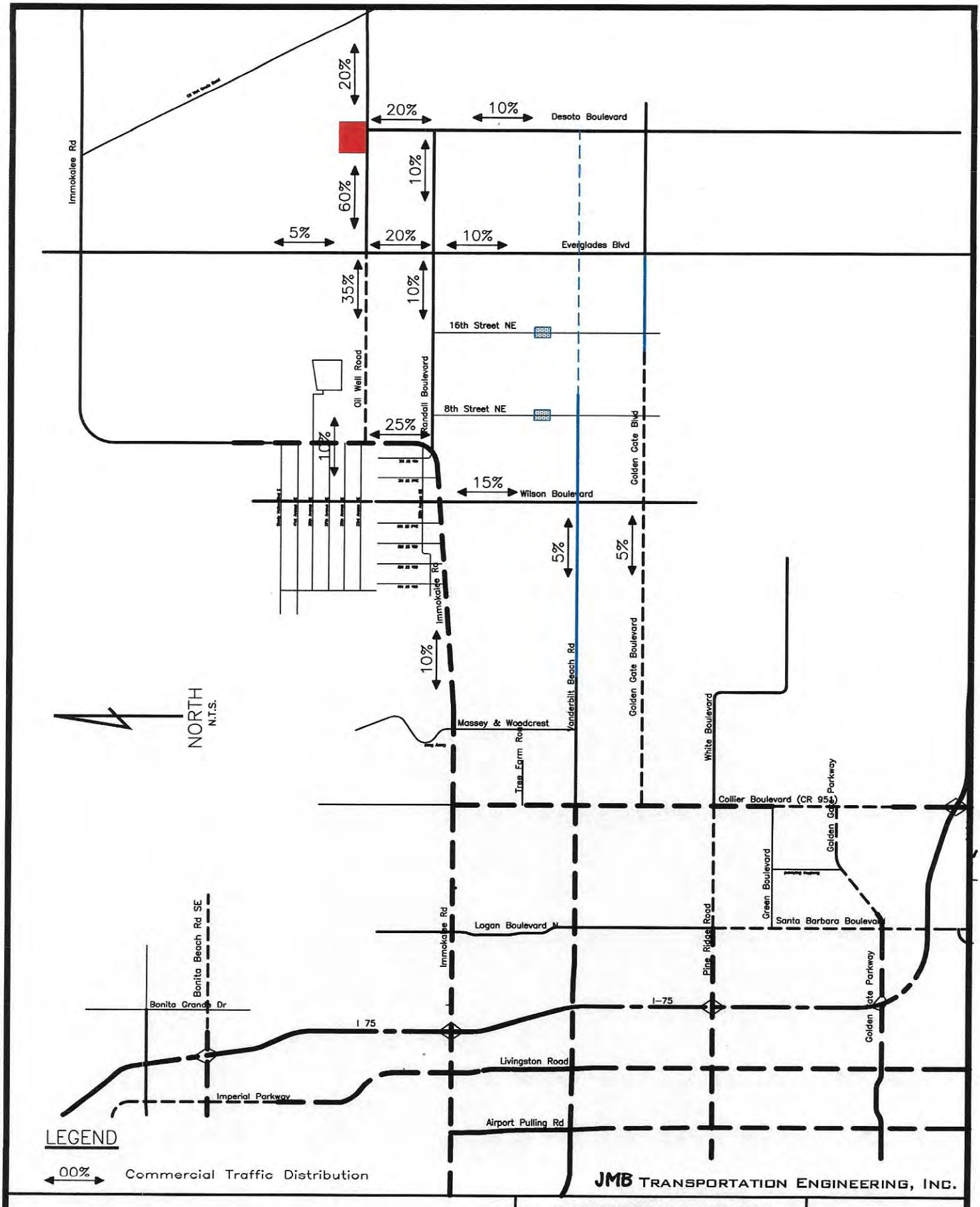
Collier Lakes

June 5, 2018

RESIDENTIAL LAND USE

PROJECT-GENERATED TRAFFIC DISTRIBUTION

FIGURE 2A



JMB TRANSPORTATION ENGINEERING, INC.

Collier Lakes

October 26, 2018

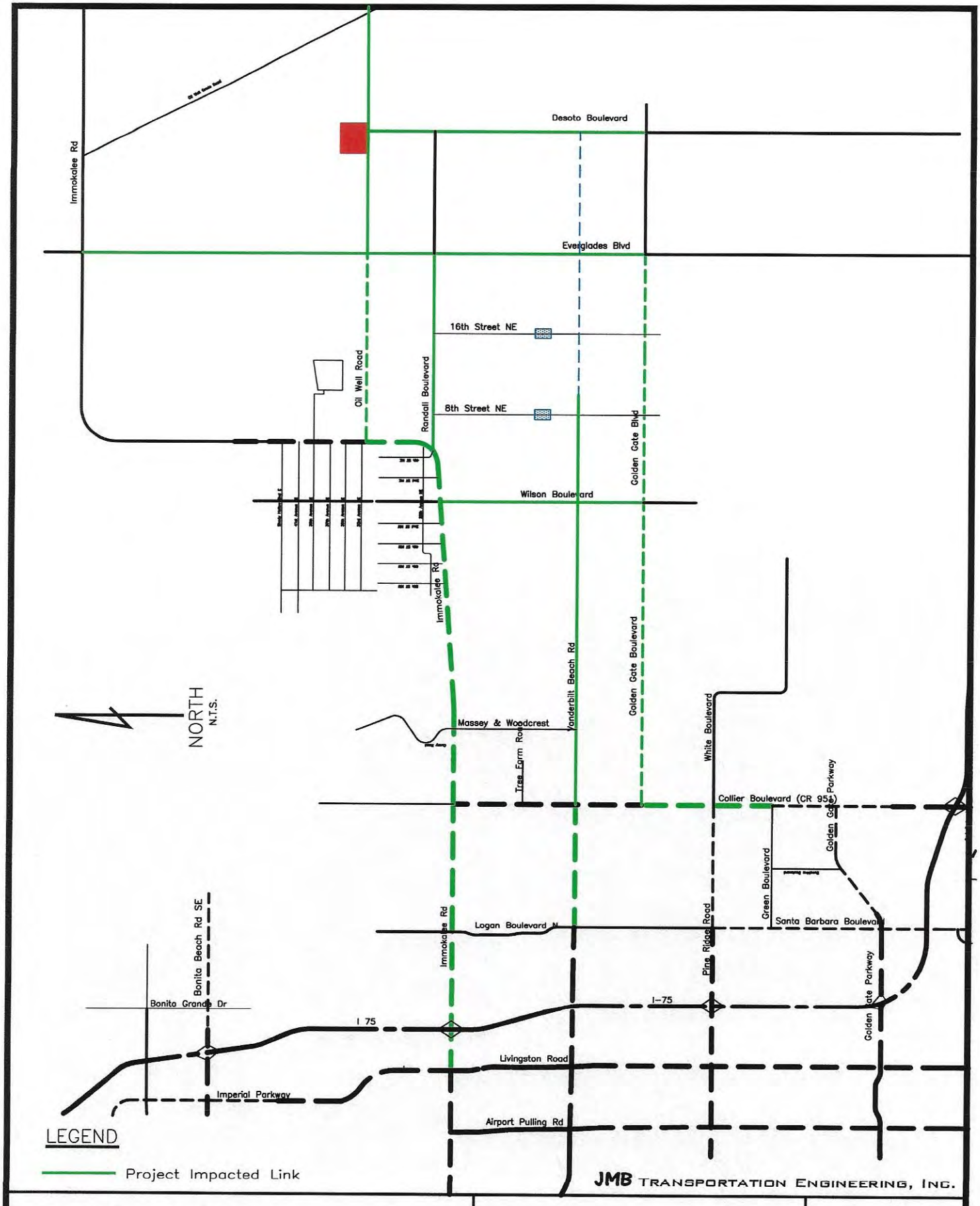
COMMERCIAL LAND USE

PROJECT-GENERATED TRAFFIC DISTRIBUTION

FIGURE 2B

TABLE 2A
PROJECT'S AREA OF IMPACT

Res. Project Traffic Peak Direction (vphpd) =					945	Entering	545	Exiting									
Com. Project Traffic Peak Direction (vphpd) =					87	Entering	108	Exiting									
			Road Class	Serv. Vol LOS	LOS Service PK Direction Volume (vphpd)	Res Project Traffic % Dist.	Res Project Pk Hr PK Dir (vphpd)	Res Project Pk Hr Non-PK (vph)	Com Project Traffic % Dist.	Com Project Pk Hr PK Dir (vphpd)	Com Project Pk Hr Non-PK (vph)	Total Project Pk Hr PK Dir (vphpd)	Total Project Non-Pk PK Dir (vphpd)	Impact Stand	Percent Impact	Significant Impact
17.0	Golden Gate Blvd	Collier Blvd to Wilson	4D	D	2300	15%	142	82	5%	5	4	147	86	3%	6.40%	YES
123.0		Wilson to Everglades Blvd	4D	D	2300	15%	142	82	1%	1	1	143	83	3%	6.21%	YES
30.1	County Road 951	Immokalee Rd to Vanderbilt Rd	6D	E	3000	5%	47	27	1%	1	1	48	28	3%	1.61%	NO
30.2		Vanderbilt to Golden Gate	6D	E	3000	5%	47	27	1%	1	1	48	28	3%	1.61%	NO
31.1		Golden Gate Blvd to Pine Ridge	6D	E	3000	20%	189	109	1%	1	1	190	110	3%	6.34%	YES
31.2		Pine Ridge to Green Blvd	6D	E	3000	13%	123	71	1%	1	1	124	72	3%	4.13%	YES
41.2	Immokalee Road	Goodlette-Frank to Airport	6D	E	3100	5%	47	27	1%	1	1	48	28	3%	1.56%	NO
42.1		Airport Road to Livingston Rd	6D	E	3100	8%	76	44	1%	1	1	77	44	3%	2.47%	NO
42.2		Livingston Rd to I-75	6D/8D	E	3500	15%	142	82	1%	1	1	143	83	3%	4.08%	YES
43.1		I-75 to Logan Blvd	6D/8D	E	3500	35%	331	191	2%	2	2	333	192	3%	9.51%	YES
43.2		Logan Blvd to C.R. 951	6D	E	3200	35%	331	191	3%	3	3	334	193	3%	10.44%	YES
44.0		C.R. 951 to Wilson Blvd	6D	E	3300	45%	425	245	10%	11	9	436	254	3%	13.21%	YES
45.0		Wilson Blvd to Oil Well	6D	E	3300	65%	614	354	25%	27	22	641	376	2%	19.43%	YES
46.0		Oil Well to S.R. 29	2U	D	900	5%	47	27	1%	1	1	48	28	2%	5.37%	YES
50.0	Logan Blvd	Immokalee Rd to Vanderbilt	2U	D	1000	2%	19	11	1%	1	1	20	12	3%	2.00%	NO
111.1	Vanderbilt BR	Airport Rd to Livingston Rd	6D	E	3000	5%	47	27	1%	1	1	48	28	3%	1.61%	NO
111.2		Livingston to Logan Blvd	6D	E	3000	8%	76	44	1%	1	1	77	45	3%	2.56%	NO
112.0		Logan Blvd to C.R. 951	6D	E	3000	15%	142	82	1%	1	1	143	83	3%	4.76%	YES
8.3	5-yr CIE	C.R. 951 to Wilson Blvd	2LD	E	1500	20%	189	109	5%	5	4	194	113	3%	12.96%	YES
	5-yr CIE	Wilson to 8th Street	2LD	E	1500	1%	9	5	1%	1	1	11	6	3%	0.70%	NO
118.0	Wilson Blvd	Immokalee Rd to Golden Gate Blvd	2U	D	900	20%	189	109	15%	16	13	205	122	3%	22.80%	YES
119.0	Oil Well Road	Immokalee to Everglades	4D	D	2000	65%	614	354	35%	38	30	652	384	2%	32.60%	YES
120.0		Everglades to Desoto	2U	D	1100	75%	709	409	60%	65	52	774	461	2%	70.32%	YES
121.1		Desoto to Oil Well Grade	2U	D	1100	15%	142	82	20%	22	17	164	99	2%	14.91%	YES
121.2		Oil Well Grade to Ave Maria	4D	D	2000	15%	142	82	15%	16	13	158	95	2%	7.90%	YES
132.0	Randall Road	Immokalee Rd to Everglades	2U	D	900	2%	19	11	10%	11	9	30	20	3%	3.30%	YES
133.0		Everglades to Desoto	2U	D	900	1%	9	5	10%	11	9	20	15	3%	2.25%	NO
135.1	Everglades Blvd	Golden Gate Blvd to Randall	2U	D	800	5%	47	27	10%	11	9	58	36	2%	7.26%	YES
135.2		Randall Blvd to Oil Well Rd	2U	D	800	5%	47	27	20%	22	17	69	44	2%	8.61%	YES
136.0		Oil Well Rd to Immokalee Rd	2U	D	800	5%	47	27	5%	5	4	52	31	2%	6.50%	YES
138.0	Desoto Blvd	Golden Gate Blvd to Oil Well	2U	D	800	10%	95	55	20%	22	17	117	72	2%	14.63%	YES



Collier Lakes

October 26, 2018

PROJECT IMPACTED LINKS

FIGURE 2C

2018 thru 2028 Project Build-out Traffic Conditions
In order to establish 2018 thru 2028 project build-out traffic conditions, two forecasting methods were used.

The first traffic forecasting method was the County's traffic count data was adjusted for peak season conditions, peak hour conditions, peak direction, and an annual growth rate was then applied. The peak season/peak hour/peak direction factor as shown on Table 2B was derived from the 2017 Collier County AUIR Reports. The annual growth rate was also obtained from the 2017 AUIR Report. Using the annual growth rate, the 2028 background traffic conditions were determined, which are depicted in Table 2B.

The second traffic forecasting method was to add the vested trips (trip bank) identified in the 2017 AUIR report to the adjusted peak season, peak hour and peak direction traffic counts. The 2028 vested trips "+" background traffic volumes are depicted in Table 2B.

The greater of the two values produced by the two forecasting procedures was then considered to reflect the 2028 background traffic, except for Immokalee Road (between Logan Boulevard and C.R. 951), which was based upon background + vested trips per Collier County staff's direction. The net new project generated traffic was then added to the background traffic. Table 2C provides a summary of the 2018 thru 2028 traffic conditions and the roadways' level of service and remaining available capacity. As shown, all project impacted roadways (E + C Network) will continue to operate at the County's adopted minimum level of service thresholds at project build-out.

TABLE 2B
2017 & 2028 ROADWAY LINK VOLUMES

						Per Growth Rate Method		*Per Vested Trips Metho*
			2017 AUIR Traffic (vphpd)	AUIR Pk DiR	Growth Rate per AUIR	2028 Peak Hour PK Direction Background (vphpd)	Trip Bank (vphpd)	2028 Peak Hour PK Direction Background Per Vested Trips (vphpd)
17.0	**Golden Gate Blvd**	Collier Blvd to Wilson	1600	E	2.00%	**1989**	0	1600
123.0		Wilson to Everglades Blvd	1102	E	2.00%	**1370**	0	1102
30.1	**County Road 951**	Immokalee Rd to Vanderbilt Rd	1520	N	3.45%	**2207**	447	1967
31.1		Golden Gate Blvd to Pine Ridge	1904	N	2.00%	**2367**	42	1946
31.2		Pine Ridge to Green Blvd	1904	N	2.00%	**2367**	44	1948
42.2	**Immokalee Road**	Livingston Rd to I-75	2460	W	2.00%	**3059**	29	2489
43.1		I-75 to Logan Blvd	2458	E	3.52%	**3596**	345	2803
43.2		Logan Blvd to C.R. 951	1980	E	~~3.93%~~	~~3026~~	585	**2565**
44.0		C.R. 951 to Wilson Blvd	1620	E	2.00%	2014	547	**2167**
45.0		Wilson Blvd to Oil Well	1890	E	2.00%	**2350**	429	2319
46.0		Oil Well to S.R. 29	390	N	4.00%	**600**	131	521
50.0	**Logan Blvd**	Immokalee Rd to Vanderbilt	560	N	4.00%	**862**	30	590
112.0	**Vanderbilt BR**	Logan Blvd to C.R. 951	1530	E	4.00%	**2355**	262	1792
	5-yr CIE	C.R. 951 to Wilson Blvd	N/A	N/A	N/A	N/A	N/A	N/A
	5-yr CIE	Wilson to 8th Street	N/A	N/A	N/A	N/A	N/A	N/A
118.0	**Wilson Blvd**	Immokalee Rd to Golden Gate Blvd	320	N	3.25%	455	**24**	344
119.0	**Oil Well Road**	Immokalee to Everglades	700	E	3.25%	995	333	**1033**
120.0		Everglades to Desoto	280	W	2.00%	348	223	**503**
121.1		Desoto to Oil Well Grade	280	W	4.00%	431	209	**489**
121.2		Oil Well Grade to Ave Maria	280	W	4.00%	431	209	**489**
132.0	**Randall Road**	Immokalee Rd to Everglades	870	E	2.68%	**1164**	78	948
133.0		Everglades to Desoto	626	E	2.00%	**778**	20	646
135.1	**Everglades Blvd**	Golden Gate Blvd to Randall	280	N	2.00%	**348**	36	316
135.2		Randall Blvd to Oil Well Rd	280	N	2.00%	**348**	36	316
136.0		Oil Well Rd to Immokalee Rd	410	N	2.00%	**510**	0	410
138.0	**Desoto Blvd**	Golden Gate Blvd to Oil Well	100	S	2.00%	**124**	0	100

TABLE 2C
2028 ROADWAY LINK VOLUME/CAPACITY ANALYSIS

			2017 Peak Hour PK Direction (vphpd)	2028 Peak Hour PK Direction Background (vphpd)	AUIR Bkgd Pk Dir	2028 Peak Hr PK Dir Backgrnd LOS	Project Pk Hr PK Dir (vphpd)	Prjct Pk Dir	Project Pk Hr Non-PK Dir (vph)	Prjct Non-Pk Dir	2028 Build-Out Peak Hour PK Dir (vphpd)	Serv. Vol. Pk Hr PK Dir (vphpd)	2028 Build-Out Peak Hour PK Direction v/c Ratio	2028 Build-Out Peak Hour PK Dir LOS	Notes
17.0	**Golden Gate Blvd**	Collier Blvd to Wilson	1600	1989	E	D	147	E	86	W	2137	2300	0.93	D	
123.0		Wilson to Everglades Blvd	1102	1370	E	D	143	E	83	W	1513	2300	0.66	D	
30.1	**County Road 951**	Immokalee Rd to Vanderbilt R	1520	2207	N	D	48	N	28	S	2256	3000	0.75	E	
31.1		Golden Gate Blvd to Pine Ridg	1904	2367	N	D	190	N	110	S	2557	3000	0.85	E	
31.2		Pine Ridge to Green Blvd	1904	2367	N	D	124	N	72	S	2491	3000	0.83	E	
42.2	**Immokalee Road**	Livingston Rd to I-75	2460	3059	W	E	143	E	83	W	3141	3500	0.90	E	
43.1		I-75 to Logan Blvd	2458	3596	E	E	333	E	192	W	3929	3500	1.12	F	No. 1
43.2		Logan Blvd to C.R. 951	1980	2565	E	E	334	E	193	W	2899	3200	0.91	E	
44.0		C.R. 951 to Wilson Blvd	1620	2167	E	D	436	E	254	W	2603	3300	0.79	E	
45.0		Wilson Blvd to Oil Well	1890	2350	E	E	641	E	376	W	2991	3300	0.91	E	
46.0		Oil Well to S.R. 29	390	600	N	D	48	S	28	N	629	900	0.70	D	
50.0	**Logan Blvd**	Immokalee Rd to Vanderbilt	560	862	N	D	20	N	12	S	882	1000	0.88	D	
112.0	**Vanderbilt BR**	Logan Blvd to C.R. 951	1530	2355	E	C	143	E	83	W	2498	3000	0.83	E	
	5-yr CIE	C.R. 951 to Wilson Blvd	N/A	N/A	N/A		194	E	113	W		1500			
	5-yr CIE	Wilson to 8th Street	N/A	N/A	N/A		11	E	6	W		1500			
118.0	**Wilson Blvd**	Immokalee Rd to Golden Gate	320	455	N	D	205	N	122	S	660	900	0.73	D	
119.0	**Oil Well Road**	Immokalee to Everglades	700	1033	E	B	652	E	384	W	1685	2000	0.84	D	
120.0	Peak Dir.	Everglades to Desoto	280	503	W	C	774	E	461	W	964	1100	0.88	D	
	Non-Peak Dir.	Everglades to Desoto	280	308		C	774	E	461	W	1082	1100	0.98	D	
121.1		Desoto to Oil Well Grade	280	489	W	C	164	E	99	W	588	1100	0.53	C	
121.2		Oil Well Grade to Ave Maria	280	489	W	B	158	E	95	W	584	2000	0.29	B	
132.0	**Randall Road**	Immokalee Rd to Everglades	870	1164	E	E	30	E	20	W	1193	900	1.33	F	No. 2
133.0		Everglades to Desoto	626	778	E	D	20	E	15	W	799	900	0.89	D	

Note

1.Immokalee Road is a constrained facility and by 2028 (without Colliker Lakes traffic) will operate at LOS F. The funded E+C Network (Vanderbilt Beach Road Extension) will reduce traffic demand on Immokalee Road. Collier staff & BCC have indicated that VBR Ext. will provide relief to Immokalee Road.

2. Randall operates at LOS F without Collier Lakes Traffic. The construction of 8th & 16th Street Bridges and VBR Ext will reduce traffic demand on Randall Boulevard.

TABLE 2C
2028 ROADWAY LINK VOLUME/CAPACITY ANALYSIS

			2017 Peak Hour PK Direction (vphpd)	2028 Peak Hour PK Direction Background (vphpd)	AUIR Bkgd Pk Dir	2028 Peak Hr PK Dir Backgrnd LOS	Project Pk Hr PK Dir (vphpd)	Prjct Pk Dir	Project Pk Hr Non-PK Dir (vph)	Prjct Non-Pk Dir	2028 Build-Out Peak Hour PK Dir (vphpd)	Serv. Vol. Pk Hr PK Dir (vphpd)	2028 Build-Out Peak Hour PK Direction v/c Ratio	2028 Build-Out Peak Hour PK Dir LOS	Notes
135.1	**Everglades Blvd**	Golden Gate Blvd to Randall	280	348	N	B	58	N	36	S	406	800	0.51	B	
135.2		Randall Blvd to Oil Well Rd	280	348	N	B	69	N	44	S	417	800	0.52	B	
136.0		Oil Well Rd to Immokalee Rd	280	510	N	B	52	S	31	N	541	800	0.68	B	
138.0	**Desoto Blvd**	Golden Gate Blvd to Oil Well	100	124	S	B	117	N	72	S	196	800	0.25	B	

9.3

Road Impact Fees

The project will be required to pay road impact fees pursuant to the requirements set forth by Collier County's Road Impact Fee Ordinance. Itemized below in Table D are the current impact fee rates, which were used in determining that the project will pay more than $13,472,828.00 in road impact fees.

Table D
Collier Lakes - Road Impact Fees

Proposed Land Uses	Units/Size	Fee/Units	Road Impact Fee
Single-Family	1,500 d.u.'s	$7,443.99/d.u.	$11,165,985.00
Multi-Family or Apartments	300 d.u.'s	$5,541.89/d.u.	$1,662,567.00
Commercial/ Retail	45,000 s.f.	$14,317.25/ksf	$644,276.00
Governmental/Institutional	18,000 s.f.	Pending	Pending
Total			**$13,472,828.00**

APPENDIX

694 Oil Well Rd (CR 858) east of Everglades Blvd h

	2018 Sta	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			Annual Daily Average
	HOUR ENDING	E	W	TOTAL	E	W	TOTAL	E	W	TOTAL	E	W	TOTAL	
1	0100	14	40	54	17	34	51	15	37	52	17	38	55	
2	0200	16	24	40	9	22	31	5	23	28	12	31	43	
3	0300	6	133	139	8	129	137	8	128	136	10	111	121	
4	0400	9	8	17	8	19	27	8	52	60	10	45	55	
5	0500	201	24	225	148	17	165	127	15	142	149	13	162	
6	0600	130	64	194	116	41	157	146	55	201	151	46	197	
7	0700	284	232	516	208	131	339	204	195	399	210	202	412	
8	0800	283	279	562	257	203	460	311	301	612	294	295	589	
9	0900	268	213	481	210	202	412	270	253	523	278	243	521	
10	1000	163	164	327	178	167	345	163	145	308	171	196	367	
11	1100	177	169	346	172	187	359	128	178	306	128	178	306	
12	1200	213	170	383	117	156	273	155	133	288	141	156	297	
13	1300	206	191	397	163	166	329	141	181	322	161	152	313	
14	1400	180	247	427	175	159	334	151	200	351	192	179	371	
15	1500	241	236	477	147	193	340	212	187	399	218	208	426	
16	1600	372	390	762	317	320	637	350	307	657	340	282	622	
17	1700	236	362	598	217	353	570	290	418	708	275	443	718	D=.62
18	1800	279	300	579	208	245	453	263	329	592	267	306	573	
19	1900	255	189	444	207	157	364	271	160	431	252	185	437	
20	2000	131	105	236	118	87	205	149	102	251	184	145	329	
21	2100	135	57	192	93	69	162	121	73	194	125	99	224	
22	2200	115	56	171	73	63	136	96	59	155	117	63	180	Ave. Daily Volume
23	2300	74	30	104	51	52	103	54	28	82	66	33	99	
24	2400	35	35	70	42	38	80	24	40	64	39	43	82	
	TOTAL	4,023	3,718	7,741	3,259	3,210	6,469	3,662	3,599	7,261	3,807	3,692	7,499	7,243
		DATE:	3/8/2018		DATE:	6/14/2018		DATE:	8/13/2018		DATE:	10/4/2018		

EB Average 3,688

WB Average 3,555

A1

Appendix D

Panther Habitat Assessment Workbook

PROJECT WORKSHEET

Habitat Type	*Assigned value*	Habitat types of land to be developed				Habitat types of land after development			
		Primary/d Zone	Secondary Zone	Other Zone	Habitat Units	Primary/d Zone	Secondary Zone	Other Zone	Habitat Units
Pine forest	9.5				0				0
Hardwood-Pine	9.3				0				0
Cypress swamp	9.2				0				0
Hardwood swamp	9.2				0				0
Hardwood Forest	9				0				0
Dry prairie	6.3				0				0
Unimproved pasture	5.7				0				0
Shrub swamp/brush	5.5				0				0
Improved pasture	5.2				0				0
Cropland	4.8				0				0
Orchards/groves	4.7				0				0
Marsh/ wet prairie	4.7				0				0
Xeric scrub	4.5				0				0
Exotic/Nuisance plants	3		1.92		4				0
Coastal wetlands	3				0				0
Barren/Disturbed lands	3		240.09		497				0
Water	0		400.52		0				0
Urban	0				0				0
Reservoirs*					0				0
STA*					0				0
TOTAL		0.00	642.53	0.00	500.96	0.00	0.00	0.00	0.00

CONTINUE

CLEAR SHEET

COMPENSATION REQUIRED

992

Habitat Units

***NOTE: The assigned value for Reservoirs and STAs varies by size, proposed future management, and their position in the landscape.**
See the associated methodology document for guidance on starting values and considerations.

Note : Habitat Units required reflect the current base multiplier of 1.98 per current FWS policy and not the old 2.5 base multiplier.

Vero Beach, FW4 <verobeach@fws.gov>

SAJ-2018-01385 (Hyde Park/Collier Lakes) 2019-TA-1146

1 message

Vero Beach, FW4 <verobeach@fws.gov> Wed, Oct 2, 2019 at 12:29 PM
To: "Campbell, Erin M SAJ" <Erin.M.Campbell@usace.army.mil>

We have received your 20190920, request for consultation, pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (Act). We received your request on 20190920. Our office has assigned the project consultation code **2019-TA-1146**.

In an effort to improve our customer service, we conducted a preliminary review of the project so that data gaps can be identified and addressed as early as possible in the process. ***Our preliminary review of the project has identified that we have all the information necessary to initiate your consultation.*** Unfortunately, consecutive years of reduced funding for the Service's Ecological Services Program have had a meaningful impact in our region and office. Workload associated with implementation of the Act is greater than our resources can address. Your project has not yet been assigned to one of our biologists but it is in the queue, in the order it was received, for processing. We apologize for the delay and one of our biologists will contact you immediately as soon as we are able to begin working on your project. The initial communication from our biologist will identify whether there are any additional information needs that may have been overlooked and are needed to complete the consultation. Once all necessary information is received by the biologist, appropriate regulatory timeframes will begin.

Again, we apologize for the delay in project processing. We hope that this preliminary assessment will help expedite the consultation process once a biologist is assigned to your project. If you have extenuating circumstances, for example, another federally mandated deadline, that may impact the consultation timeline, please identify this as soon as possible.

If you have any questions or concerns, please contact Constance Cassler, Supervisor for Planning and Resource Conservation, West, at 772-469-4243 or constance_cassler@fws.gov.

US Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960
772-562-3909

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

Hitt, Heather <heather_hitt@fws.gov>

SAJ-2012018-01385 (Hyde Park) 2019-TA-1146

1 message

Hitt, Heather <heather_hitt@fws.gov> Wed, Dec 4, 2019 at 8:52 AM
To: csmith@dexbender.com, erin.m.campbell@usace.army.mil

Hi Craig,

It was good to meet with you yesterday and discuss this project. Connie and I reviewed it a little more for impacts to FBB foraging and also found the FBB acoustic survey conducted for the Rural Lands West parcel next door. We decided that since they had positive acoustic hits that an acoustic survey for this site is not needed. Also, since there will still be a significant amount of water post-construction we are comfortable going with a "may affect, but is not likely to adversely affect" for the FBB (as the Corps already determined). Using the new key though (attached), we would need to know which of the BMPs would be able to be implemented.

As we discussed, according to recent interim guidance from our State Supervisor. This project is not within the 0.62 mile buffer of any indigo snake occurrence locations in our database. This means that the Service does not consider indigo snakes reasonably certain to occur on site and no further consultation on this species is warranted. We request that the Corps revise their determination to "no effect" for the indigo snake.

For scrub-jays we discussed that there is no suitable habitat for scrub-jays on site and the nearest known occurrences are over 9 miles away. We request that the Corps revise their determination to "no effect" for the scrub-jay.

For cumulative effects, the consultant for Rural Lands West analyzed development projects from 2013 to 2016. Since they are right next door, the 25 mile action area is basically the same and we can use that data, even though its a few years old.

Let me know if there's anything I forgot that we talked about. I will begin working on the BO for panthers this week and will let you know if any other questions pop up.

Thanks,

Heather Hitt
Fish and Wildlife Biologist
US Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960
Phone: 772-469-4267
Fax: 772-562-4288
Email: heather_hitt@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

20191022_FBB Key_Srvc to Corps_2014-I-0320-R001wenclosure.pdf
1946K

Hitt, Heather <heather_hitt@fws.gov>

PHU calculator for Hyde Park

1 message

Hitt, Heather <heather_hitt@fws.gov> Fri, Dec 6, 2019 at 2:48 PM
To: Craig Smith <csmith@dexbender.com>

Hi Craig,

In looking more closely at the PHU calculator, I see that the total acreage does not match the other tables and maps, it's lower by about 12 acres or so. Also, there is nothing in the row for improved pasture, but the tables and maps all list it at 112.99 ac. Is it being counted as disturbed lands in the PHU calculations?

Thanks,

Heather Hitt
Fish and Wildlife Biologist
US Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960
Phone: 772-469-4267
Fax: 772-562-4288
Email: heather_hitt@fws.gov

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Hitt, Heather <heather_hitt@fws.gov>

SAJ-2012018-01385 (Hyde Park) 2019-TA-1146

Craig Smith <csmith@dexbender.com> Thu, Dec 19, 2019 at 11:05 AM
To: "Hitt, Heather" <heather_hitt@fws.gov>

Heather:

Thank you for your quick review of this project. Below, I am providing the questions you raised concerning the Florida bonneted bat and Florida panther.

Florida Bonneted Bat

The site plan has changed slightly over the past few months. I have attached the current site plan. The post development acreages are as follows:

Lakes	246.91 acres
Perimeter Open Space	38.25 acres
Internal Open Space	170.35 acres
Impervious	185.46 acres
Conservation Easement	1.56 acres
Total:	642.53 acres

Based on the current guidelines, we need to propose a minimum of four best management practices (BMP) to minimize potential impacts to the Florida Bonneted Bat. The BMPs we are proposing are as follows:

BMP 5. Conserve open water and wetland habitats. The proposed site plan will contain 246.91± acres of open water on-site post development. In addition, 1.05± acres of wetland will remain in an existing SFWMD conservation easement along the property's east border.

BMP 6. Conserve and/or enhance riparian habitat. The reshaped lakes on the property will be planted with native wetland species in the littoral in accordance with Collier County requirements.

BMP 8. Conserve native vegetation. No native habitats occur on the property. The only semi native habitat (a disturbed wetland dominated by exotics with scattered willow, cypress, and swamp fern) on-site is within the existing SFWMD conservation easement. Approximately 38.25 acres of buffers/open space will be created around the perimeter of the project. These areas will be planted with a minimum of 565± native trees.

BMP 11. Avoid and minimize artificial lighting. Neal Communities has committed to install downward facing with low lumen lighting for the project's roadway lighting. Neal Communities is working with the utility to install the street lighting with a BUG rating where U=0. This lighting is full cut off with no up lighting. In addition the homes and common areas will be designed with the same intent to minimize up lighting at the lowest lumens possible while still maintaining safe conditions for the homeowners.

BMP 12. Engineering designs to minimize bat use of structures. The soffits on all buildings will be sealed to prevent bat entrance. In addition, all of the lanais on the residential buildings will be screened.

Please let me know if these BMPs are satisfactory or if you need additional details.

Florida Panther

The overall vegetation map depicts the plant communities on the entire 654.79± acre property. The southerly 12.26± acres consists of a 100 feet wide right-of-way for Oil Well Road. Impacts to that area were covered by a previous COE permit issued to Collier County for the four-laning of Oil Well Road and therefore were excluded from our PHU calculations. I have revised the attached PHU calculator you sent me accordingly. Based on the revised PHU calculator, 1324 PHU are required.

The only area within a conservation easement is a small (1.56± acres) disturbed area near the southeast corner. The area consists of 1.05± acres of exotic wetland hardwoods, 0.30± acre of borrow area, and 0.21± acre of disturbed uplands. Given that this small area will be completely surrounded by development (Hyde Park and Rural Lands West), I presumed the FWS would consider the area as impacted.

Please let me know if you need any additional information in order to complete your review. Thanks.

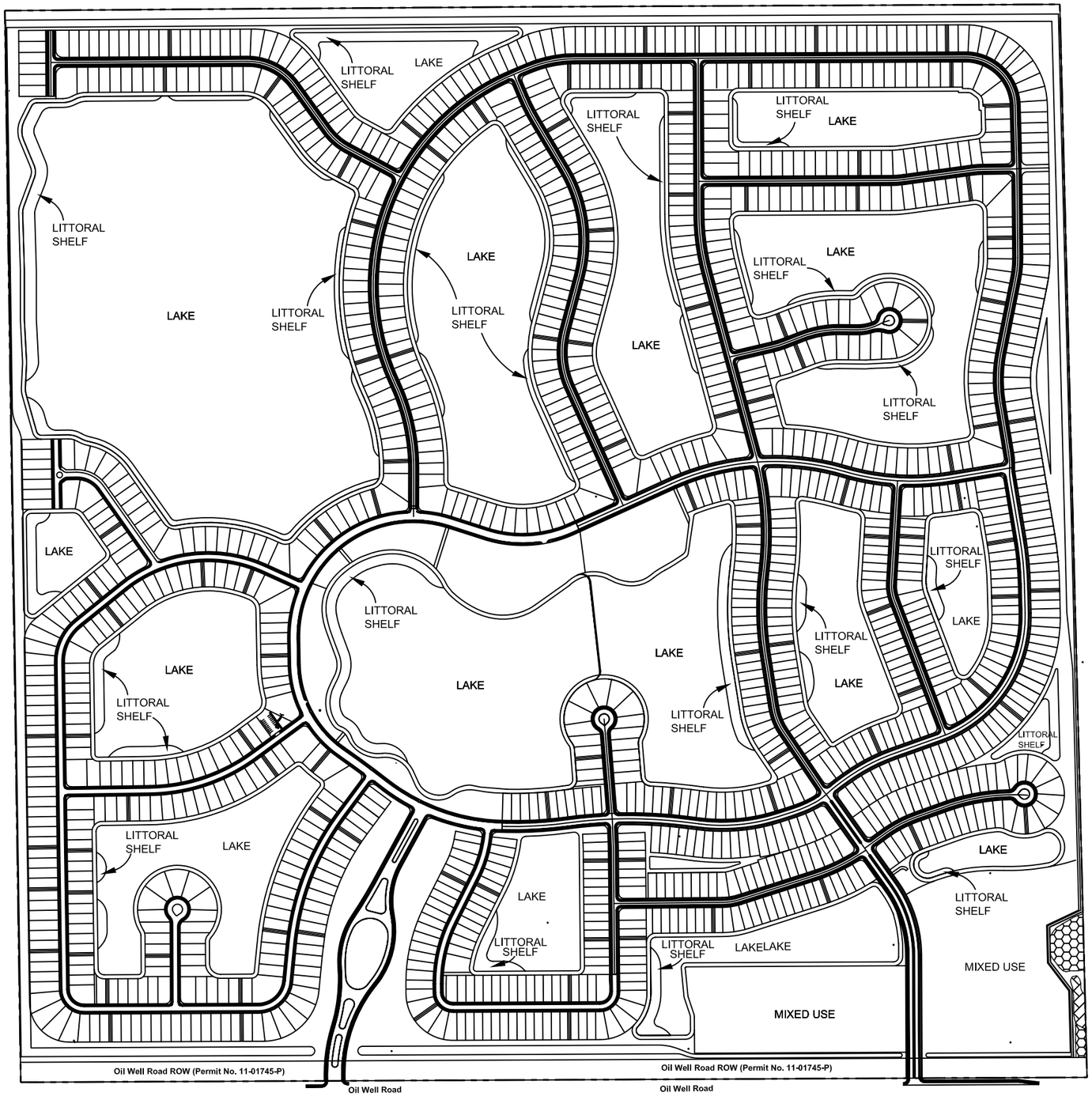
Once I have your comments, and the information highlighted in yellow, I will send the email to Heather. Please call if you would like to discuss. Thanks.

[Quoted text hidden]

2 attachments

PropCon Map 600scale.pdf
201K

HH_2018 Panther Habitat Assessment Workbook LOCKED DexBender Edits.xls
159K


LITTORAL SHELF
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LITTORAL SHELF
LAKE
LITTORAL SHELF
LAKE

BISON CONNECT

Hitt, Heather <heather_hitt@fws.gov>

RE: [Non-DoD Source] Re: [EXTERNAL] RE: SAJ-2012018-01385 (Hyde Park) 2019-TA-1146 (UNCLASSIFIED)

Campbell, Erin M CIV USARMY CESAJ (USA) <Erin.M.Campbell@usace.army.mil> Thu, Dec 19, 2019 at 1:47 PM
To: "Hitt, Heather" <heather_hitt@fws.gov>, Craig Smith <csmith@dexbender.com>

CLASSIFICATION: UNCLASSIFIED

Heather,

The Corps agrees :)

Thanks,
Erin

-----Original Message-----
From: Hitt, Heather [mailto:heather_hitt@fws.gov]
Sent: Thursday, December 19, 2019 12:52 PM
To: Craig Smith <csmith@dexbender.com>; Campbell, Erin M CIV USARMY CESAJ (USA) <Erin.M.Campbell@usace.army.mil>
Subject: [Non-DoD Source] Re: [EXTERNAL] RE: SAJ-2012018-01385 (Hyde Park) 2019-TA-1146

Thanks Craig,

This looks good and makes more sense. Just a quick question, the 0.46 credits being purchased at Panther Island Mitigation Bank Expansion equal 16 PHUs and the remaining 1,308 PHUs will be purchased at Panther Passage. Do I have that right?

I also have a couple of conservation recommendations for the project. If the Applicant agrees ahead of time I can put them in the minimization measures section, otherwise they will stay in the recommendation section.

1. The Service recommends the Applicant consider providing educational materials and install signage to inform construction workers and residents about the risk of panther-vehicle interactions in the vicinity of the Project site, especially during evening hours.

2. The Wildlife Foundation of Florida administers a FBB conservation fund. Even though take is not anticipated for the FBB, the Service recommends voluntary donations to this fund to support recovery actions that benefit the FBB.

The only other thing I need to complete the BO is if the Corps agrees to revise the determinations for indigo snake and scrub-jay to "no effect."

Thanks!

Heather Hitt
Fish and Wildlife Biologist
US Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960
Phone: 772-469-4267
Fax: 772-562-4288
Email: heather_hitt@fws.gov <mailto:heather_hitt@fws.gov>

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

On Thu, Dec 19, 2019 at 11:08 AM Craig Smith <csmith@dexbender.com <mailto:csmith@dexbender.com> > wrote:

Heather:

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conditions for the homeowners.

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Florida Panther

The overall vegetation map depicts the plant communities on the entire 654.79± acre property. The southerly 12.26± acres consists of a 100 feet wide right-of-way for Oil Well Road. Impacts to that area were covered by a previous COE permit issued to Collier County for the four-laning of Oil Well Road and therefore were excluded from our PHU calculations. I have revised the attached PHU calculator you sent me accordingly. Based on the revised PHU calculator, 1324 PHU are required.

The only area within a conservation easement is a small (1.56± acres) disturbed area near the southeast corner. The area consists of 1.05± acres of exotic wetland hardwoods, 0.30± acre of borrow area, and 0.21± acre of disturbed uplands. Given that this small area will be completely surrounded by development (Hyde Park and Rural Lands West), I presumed the FWS would consider the area as impacted.

Please let me know if you need any additional information in order to complete your review. Thanks.

Once I have your comments, and the information highlighted in yellow, I will send the email to Heather. Please call if you would like to discuss. Thanks.

Craig M. Smith, M.S., P.W.S.

Senior Ecologist

4470 Camino Real Way, Suite 101

Fort Myers, FL 33966

Office: (239)334-3680

Mobile: (239)470-2812

Blockedwww.dexbender.com <Blockedhttp://www.dexbender.com>

From: Hitt, Heather <heather_hitt@fws.gov <mailto:heather_hitt@fws.gov> >
Sent: Friday, December 6, 2019 8:43 AM
To: Craig Smith <csmith@dexbender.com <mailto:csmith@dexbender.com> >
Subject: Re: [EXTERNAL] RE: SAJ-2012018-01385 (Hyde Park) 2019-TA-1146

Morning Craig,

I just noticed that the site plan in the traffic study is slightly different than the one in the species survey. The traffic study map gives acreages of each land use type after construction, which is what I'm using the the BO to calculate lost foraging habitat for the FBB, but the map in the species survey does not. Can you confirm which one is accurate? If it's the map in the species survey then I will need the post-construction acreages that go with it.

Thanks,

Heather Hitt

Fish and Wildlife Biologist

US Fish and Wildlife Service

1339 20th Street

Vero Beach, FL 32960

Phone: 772-469-4267

Fax: 772-562-4288

Email: heather_hitt@fws.gov <mailto:heather_hitt@fws.gov>

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

On Thu, Dec 5, 2019 at 9:02 AM Hitt, Heather <heather_hitt@fws.gov <mailto:heather_hitt@fws.gov> > wrote:

Hi Craig,

We keyed it out to 17b (assuming it would only have some FBB activity and not high activity based on the acoustic survey next door).

Thanks,

Heather Hitt

Fish and Wildlife Biologist

US Fish and Wildlife Service

1339 20th Street

Vero Beach, FL 32960

Phone: 772-469-4267

Fax: 772-562-4288

Email: heather_hitt@fws.gov <mailto:heather_hitt@fws.gov>

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On Thu, Dec 5, 2019 at 8:59 AM Craig Smith <csmith@dexbender.com <mailto:csmith@dexbender.com> > wrote:

Heather:

Which couplet did you key the project out to? I want to make sure we propose the correct number of BMPs. Thanks.

Craig M. Smith, M.S., P.W.S.

Senior Ecologist

4470 Camino Real Way, Suite 101

Fort Myers, FL 33966

Office: (239)334-3680

Mobile: (239)470-2812

Blockedwww.dexbender.com <Blockedhttp://www.dexbender.com>

From: Hitt, Heather <heather_hitt@fws.gov <mailto:heather_hitt@fws.gov> >
Sent: Wednesday, December 4, 2019 8:53 AM
To: Craig Smith <csmith@dexbender.com <mailto:csmith@dexbender.com> >; erin.m.campbell@usace.army.mil <mailto:erin.m.campbell@usace.army.mil>
Subject: SAJ-2012018-01385 (Hyde Park) 2019-TA-1146

Hi Craig,

It was good to meet with you yesterday and discuss this project. Connie and I reviewed it a little more for impacts to FBB foraging and also found the FBB acoustic survey conducted for the Rural Lands West parcel next door. We decided that since they had positive acoustic hits that an acoustic survey for this site is not needed. Also, since there will still be a significant amount of water post-construction we are comfortable going with a "may affect, but is not likely to adversely affect" for the FBB (as the Corps already determined). Using the new key though (attached), we would need to know which of the BMPs would be able to be implemented.

As we discussed, according to recent interim guidance from our State Supervisor. This project is not within the 0.62 mile buffer of any indigo snake occurrence locations in our database. This means that the Service does not consider indigo snakes reasonably certain to occur on site and no further consultation on this species is warranted. We request that the Corps revise their determination to "no effect" for the indigo snake.

For scrub-jays we discussed that there is no suitable habitat for scrub-jays on site and the nearest known occurrences are over 9 miles away. We request that the Corps revise their determination to "no effect" for the scrub-jay.

For cumulative effects, the consultant for Rural Lands West analyzed development projects from 2013 to 2016. Since they are right next door, the 25 mile action area is basically the same and we can use that data, even though its a few years old.

Let me know if there's anything I forgot that we talked about. I will begin working on the BO for panthers this week and will let you know if any other questions pop up.

Thanks,
Heather Hitt

Fish and Wildlife Biologist

US Fish and Wildlife Service

1339 20th Street

Vero Beach, FL 32960

Phone: 772-469-4267

Fax: 772-562-4288

Email: heather_hitt@fws.gov <mailto:heather_hitt@fws.gov>

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

CLASSIFICATION: UNCLASSIFIED

Hitt, Heather <heather_hitt@fws.gov>

SAJ-2012018-01385 (Hyde Park) 2019-TA-1146

Hitt, Heather <heather_hitt@fws.gov> Thu, Dec 19, 2019 at 12:52 PM
To: Craig Smith <csmith@dexbender.com>, erin.m.campbell@usace.army.mil

Thanks Craig,

This looks good and makes more sense. Just a quick question, the 0.46 credits being purchased at Panther Island Mitigation Bank Expansion equal 16 PHUs and the remaining 1,308 PHUs will be purchased at Panther Passage. Do I have that right?

I also have a couple of conservation recommendations for the project. If the Applicant agrees ahead of time I can put them in the minimization measures section, otherwise they will stay in the recommendation section.

1. The Service recommends the Applicant consider providing educational materials and install signage to inform construction workers and residents about the risk of panther-vehicle interactions in the vicinity of the Project site, especially during evening hours.

2. The Wildlife Foundation of Florida administers a FBB conservation fund. Even though take is not anticipated for the FBB, the Service recommends voluntary donations to this fund to support recovery actions that benefit the FBB.

The only other thing I need to complete the BO is if the Corps agrees to revise the determinations for indigo snake and scrub-jay to "no effect."

Thanks!

Heather Hitt
Fish and Wildlife Biologist
US Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960
Phone: 772-469-4267
Fax: 772-562-4288
Email: heather_hitt@fws.gov

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

[Quoted text hidden]

BISON CONNECT

Hitt, Heather <heather_hitt@fws.gov>

SAJ-2012018-01385 (Hyde Park) 2019-TA-1146

Craig Smith <csmith@dexbender.com> Fri, Dec 20, 2019 at 11:23 AM
To: "Hitt, Heather" <heather_hitt@fws.gov>, "erin.m.campbell@usace.army.mil" <erin.m.campbell@usace.army.mil>

Heather:

You are correct that credits being purchased at Panther Island Mitigation Bank Expansion equal 16 PHUs and the remaining 1,308 PHUs will be purchased at Panther Passage. The SFWMD is requiring 0.47 credits and not 0.46 for secondary impacts to the isolated (non federal) wetland.

The Applicant agrees to provide educational materials and install signage to inform construction workers and residents about the risk of panther-vehicle interactions in the vicinity of the Project site, especially during evening hours.

The Applicant agrees to provide a $1,000 donation to the FBB conservation fund administered by the Wildlife Foundation of Florida to support recovery actions that benefit the FBB.

Erin:

Thank you for your quick concurrence with the FWS's request to revise the determinations for indigo snake and scrub-jay to "no effect."

Please let me know if the FWS or COE needs anything else to move forward with the issuance of the COE permit for this project. Thanks again for your very quick turn around on this. Have a great Holiday.

Craig M. Smith, M.S., P.W.S.

Senior Ecologist

DEXBENDER ENVIRONMENTAL CONSULTING

4470 Camino Real Way, Suite 101

Fort Myers, FL 33966

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From: Hitt, Heather <heather_hitt@fws.gov>
Sent: Thursday, December 19, 2019 12:52 PM
To: Craig Smith <csmith@dexbender.com>; erin.m.campbell@usace.army.mil
Subject: Re: [EXTERNAL] RE: SAJ-2012018-01385 (Hyde Park) 2019-TA-1146

Thanks Craig,

[Quoted text hidden]

[Quoted text hidden]

> [Quoted text hidden]
>
> Craig M. Smith, M.S., P.W.S.
>
> [Quoted text hidden]

RESOLUTION NO. 20-_____

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS PROPOSING AMENDMENTS TO THE COLLIER COUNTY GROWTH MANAGEMENT PLAN, ORDINANCE 89-05, AS AMENDED, RELATING TO THE RURAL LANDS STEWARDSHIP AREA OVERLAY RESTUDY AND SPECIFICALLY AMENDING THE RURAL LANDS STEWARDSHIP AREA OVERLAY OF THE FUTURE LAND USE ELEMENT, TO CHANGE ACREAGES, STEWARDSHIP CREDITS, DEVELOPMENT STANDARDS AND PROGRAM REQUIREMENTS; AND FURTHERMORE DIRECTING TRANSMITTAL OF THE AMENDMENTS TO THE FLORIDA DEPARTMENT OF ECONOMIC OPPORTUNITY. [PL20190002292]

WHEREAS, Collier County, pursuant to Section 163.3161, et. seq., Florida Statutes, the Florida Local Government Comprehensive Planning and Land Development Regulation Act of 1985, was required to prepare and adopt a comprehensive plan; and

WHEREAS, the Collier County Board of County Commissioners adopted the Collier County Growth Management Plan on January 10, 1989; and

WHEREAS, the Community Planning Act of 2011 provides authority for local governments to amend their respective comprehensive plans and outlines certain procedures to amend adopted comprehensive plans; and

WHEREAS, Collier County staff has prepared amendments relating the Rural Lands Stewardship Area Overlay of the Future Land Use Element Series; and

WHEREAS, on _____, the Collier County Planning Commission considered the proposed amendment to the Growth Management Plan pursuant to the authority granted to it by Section 163.3174, F.S., and has recommended approval of said amendment to the Board of County Commissioners; and

WHEREAS, on _____, the Board of County Commissioners at a public hearing approved the transmittal of the proposed amendment to the state land planning agency in accordance with Section 163.3184, F.S.; and

WHEREAS, upon receipt of Collier County's proposed Growth Management Plan Amendment, various State agencies and the Department of Economic Opportunity (DEO) have thirty (30) days to review the proposed amendments and DEO must transmit, in writing, to Collier County its comments within said thirty (30) days pursuant to Section 163.3184, F.S.; and

WHEREAS, Collier County, upon receipt of the written comments from DEO must adopt, adopt with changes or not adopt the proposed Growth Management Plan Amendment within one hundred and eighty (180) days of such receipt pursuant to Section 163.3184, F.S.; and

WHEREAS, the DEO, within five (5) days of receipt of Collier County's adopted Growth Management Plan Amendment, must notify the County of any deficiencies of the Plan Amendment pursuant to Section 163.3184(3), F.S.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF COLLIER COUNTY, FLORIDA that:

The Board of County Commissioners hereby approves the proposed Growth Management Plan Amendment, attached hereto as Exhibit "A" and incorporated by reference herein, for the purpose of transmittal to the Department of Economic Opportunity and other reviewing agencies thereby initiating the required State evaluation of the Growth Management Plan Amendment prior to final adoption.

THIS RESOLUTION ADOPTED after motion, second and majority vote this _____ day of _____, 2020.

ATTEST:
CRYSTAL K. KINZEL, CLERK

_____
Deputy Clerk

BOARD OF COUNTY COMMISSIONERS
COLLIER COUNTY, FLORIDA

BY: _____
Burt L. Saunders, Chairman

Approved as to form and legality:

_____ HFAC 8-3-20
Heidi Ashton-Cicko
Managing Assistant County Attorney

Attachment: Exhibit "A" – Text amendments and attachments

Collier County Growth Management Plan
Future Land Use Element

Rural Lands Stewardship Area Overlay

Prepared by
Collier County Growth Management Department
Community Planning Section

Prepared for
Collier County Board of County Commissioners
Adopted October 1997, as amended

Future Lands Use Element
Rural Lands Stewardship Area Overlay Amendments – CCPC Transmittal Draft

II. IMPLEMENTATION STRATEGY [Page 10]

GOALS, OBJECTIVES AND POLICIES

*** *** *** *** text break *** *** *** ***

V. OVERLAYS AND SPECIAL FEATURES [Page 98]

A. Area of Critical State Concern

*** *** *** *** text break *** *** *** ***

B. North Belle Meade Overlay

*** *** *** *** text break *** *** *** ***

C. Natural Resource Protection Area Overlay

*** *** *** *** text break *** *** *** ***

D. Rural Lands Stewardship Area Overlay [Page 120]

Goal

Collier County seeks to address the long-term needs of residents and property owners within the Immokalee Area Study boundary of the Collier County Rural and Agricultural Area Assessment. Collier County's goal is to ~~protect~~ retain land for agricultural activities, ~~to prevent the premature conversion of agricultural land to non-agricultural uses,~~ to direct incompatible uses away from wetlands and upland habitat, to protect and restore habitat connectivity, to enable the conversion of rural land to other uses in appropriate locations, to discourage urban sprawl, and to encourage development that ~~utilizes~~ employs creative land use planning techniques~~.~~ through the use of established incentives.

Objective

To meet the Goal described above, Collier County's objective is to create an incentive-based land use overlay system, herein referred to as the Collier County Rural Lands Stewardship Area Overlay, based on the principles of rural land stewardship as defined in Chapter 163.3177(11), F.S. The Policies that will implement this Goal and Objective are set forth below in groups relating to each aspect of the Goal. Group 1 policies describe the structure and organization of the Collier County Rural Lands Stewardship Area Overlay. Group 2 policies relate to agriculture. Group 3 policies relate to natural resource protection~~, and~~. Group 4 policies relate to conversion of land to other uses and economic diversification. Group 5 are regulatory policies that ensure that land that is not voluntarily included in the Overlay by its owners shall nonetheless meet the minimum requirements of the Final Order pertaining to natural resource protection.

Group 1 - General purpose and structure of the Collier County Rural Lands Stewardship Area Overlay

Policy 1.1

To promote a dynamic balance of land uses in the Collier County Rural Lands Stewardship Area (RLSA) that collectively contributes to a viable agricultural industry, protects natural resources, and enhances economic prosperity and diversification, Collier County hereby establishes the Rural Lands Stewardship

Text underlined is added; text ~~strike through~~ is deleted.
Rows of Asterisks (** *** **) denotes break in text.

Area Overlay (Overlay). The Overlay was created through a collaborative community-based planning process involving county residents, area property owners, and representatives of community and governmental organizations under the direction of a citizen oversight committee.

Policy 1.2
The Overlay protects natural resources and retains viable agriculture by promoting compact rural mixed-use development as an alternative to low-density single use development, and provides a system of compensation to private property owners for the elimination of certain land uses in order to protect natural resources and viable agriculture in exchange for transferable credits that can be used to entitle such compact development. The strategies herein are based in part on the principles of Florida's Rural Lands Stewardship Act, Chapter 163.3177(11) F.S. The Overlay includes innovative and incentive-based tools, techniques and strategies that are not dependent on a regulatory approach, but will complement existing local, regional, state and federal regulatory programs.

Policy 1.3
This Overlay to the Future Land Use Map is depicted on the Stewardship Overlay Map (Overlay Map) and applies to rural designated lands located within the Immokalee Area Study boundary of the Collier County Rural and Agricultural Area Assessment referred to in the State of Florida Administration Commission Final Order No. AC-99-002. The RLSA generally includes rural lands in northeast Collier County lying north and east of Golden Gate Estates, north of the Florida Panther National Wildlife Refuge and Big Cypress National Preserve, south of the Lee County Line, and south and west of the Hendry County Line, and includes a total of approximately ~~195,846~~ 185,935 acres~~of which approximately 182,334 acres is privately owned.~~ The Overlay Map is an adopted overlay to the Future Land Use Map (FLUM).

Policy 1.4
Except as provided in Group 5 Policies, there shall be no change to the underlying density and intensity of permitted uses of land within the RLSA, as set forth in the Baseline Standards, as defined in Policy 1.5, unless and until a property owner elects to utilize the provisions of the Stewardship Credit System. It is the intent of the Overlay that a property owner will be compensated for the voluntary stewardship and protection of important agricultural and natural resources. Compensation to the property owner shall occur through one of the following mechanisms: creation and transfer of Stewardship Credits, acquisition of conservation easements, acquisition of less than fee interest in the land, or through other acquisition of land or interest in land through a willing seller program.

Policy 1.5
As referred to in these Overlay policies, Baseline Standards are the permitted uses, density, intensity and other land development regulations assigned to land in the RLSA by the ~~GMP~~ Growth Management Plan (GMP), Collier County Land Development Regulations (LDRs) and Collier County Zoning Regulations in effect prior to the adoption of Interim Amendments and Interim Development Provisions referenced in Final Order AC-99-002. The Baseline Standards will remain in effect for all land not subject to the transfer or receipt of Stewardship Credits, except as provided for in Group 5 Policies. No part of the Stewardship Credit System shall be imposed upon a property owner without that ~~owners~~ owner's consent.

Policy 1.6
Stewardship Credits (Credits) are created from any lands within the RLSA that are to be kept in permanent agriculture, open space or conservation uses. These lands will be identified as Stewardship

Sending Areas or SSAs. All privately owned lands within the RLSA are a candidate for designation as a SSA. Land becomes designated as a SSA upon petition by the property owner seeking such designation and the adoption of a resolution by the Collier County Board of County Commissioners (BCC), which acknowledges the property owner's request for such designation and assigns Stewardship Credits or other compensation to the owner for such designation. Collier County will update the Overlay Map to delineate the boundaries of each approved SSA. Designation as an SSA shall be administrative and shall not require an amendment to the Growth Management Plan, but shall be retroactively incorporated into the adopted Overlay ~~Map during the EAR based amendment process when it periodically occurs~~ by amendment as may be periodically initiated by the County. A Stewardship Sending Area Credit Agreement shall be developed that identifies those allowable residential densities and other land uses which remain. Once land is designated as a SSA and Credits or other compensation is granted to the owner, no increase in density or additional uses unspecified in the Stewardship Sending Area Credit Agreement shall be allowed on such property unless the SSA is terminated as provided in Policy 1.6.1

Policy 1.6.1 (recommended amendment)
Notwithstanding any provision herein to the contrary, upon initial approval of a Stewardship Sending Area ("SSA"), the Stewardship Easement shall be established for a term of five years ("Conditional Period") and shall be deemed a Conditional Stewardship Easement. The Conditional Period may be extended for one additional year at the option of the owner by providing written notice to the County prior to the expiration of the initial five-year period. All conditions and restrictions of the Stewardship Easement related to maintaining the existing property conditions, including all management obligations of the owner of the SSA lands, shall be in full force throughout the Conditional Period. If at any time during the Conditional Period any of the following events occur, then the Conditional Stewardship Easement shall become a Permanent Stewardship Easement which shall be final, perpetual and non-revocable in accordance with the terms set forth therein:

1. Stewardship Credits from the SSA have been assigned to entitle an approved Stewardship Receiving Area ("SRA"), and the SRA has received all necessary final and non-appealable development orders, permits, or other discretionary approvals necessary to commence construction, including subdivision plat and site development plan approval, but not building permits. If Stewardship Credits from the SSA have been assigned to more than one SRA, then the receipt of all necessary governmental final and non-appealable development orders, permits, or other discretionary approvals necessary to commence construction of any SRA shall automatically cause the Conditional Stewardship Easement to become a Permanent Stewardship Easement;

2. The owner of the SSA lands has sold or transferred any Stewardship Credits to another person or entity, including a Stewardship Credit Trust as described in Policy 1.20, the closing has occurred, and the owner has received the consideration due from such sale or transfer, but not expressly excluding:

   (a) a sale or transfer of the Stewardship Credits ancillary to the sale or transfer of the underlying fee title to the land, or
   (b) instances where a landowner establishes an SSA for a specific SRA, whether the SRA is owned or developed by a separate or related entity, and the Stewardship Credits are transferred as required by the Growth Management Plan or Land Development Code for SRA approval; or

3. The owner of the SSA lands has received in exchange for the creation of the Stewardship Easement Agreement other compensation from local, state, federal or private revenues (collectively, the "Events").

The LDC shall specify how, assuming a Notice of Termination (as hereafter described) has not been recorded, the Conditional Stewardship Easement shall automatically convert to a Permanent Stewardship Easement upon the earliest to occur of (a) any of the foregoing Events during the Conditional Period, or (b) 180 days after the last day of the Conditional Period, as and to the extent extended hereunder. In the event that none of the foregoing events has occurred during the Conditional Period, then the owner of the SSA lands may within 180 days after the last day of the Conditional Period terminate the Conditional Stewardship Easement by recording a Notice of Termination. In addition, if a challenge and/or appeal of a necessary development order, permit or other discretionary approval is filed, the owner of the SSA lands may elect to extend the Conditional Period until the challenge or appeal is finally resolved. If the challenge or appeal is not resolved such that the construction may commence under terms acceptable to the owner of the SSA lands, the owner of the SSA lands may within 180 days of the final disposition of the challenge or appeal record a Notice of Termination. Upon the recording of such Notice of Termination, the Stewardship Easement Agreement and corresponding Stewardship Sending Area Credit Agreement shall expire and terminate, the Stewardship Credits generated by the SSA shall cease to exist, the rights and obligations set forth in the Stewardship Easement shall no longer constitute an encumbrance on the property, and the SSA Memorandum shall be revised accordingly. The owner of the SSA lands shall provide a copy of the Notice of Termination to the County.

In the event that the Stewardship Credits from an SSA have been used to obtain one or more SRA approvals, but none of the foregoing events has occurred during the Conditional Period, then the Notice of Termination shall also provide for termination of any SRAs that have been assigned credits from the SSA, unless the SRA owner has obtained sufficient Stewardship Credits from another source and such Stewardship Credits have been applied to the SRA. In the event that a Notice of Termination does terminate an SRA, the owner of the SRA lands shall join in the Notice of Termination.

In the event that a Conditional Stewardship Easement is terminated, all benefits, rights, privileges, restrictions and obligations associated with the SSA shall be null and void, and the land shall revert to its underlying zoning classification, free and clear of any encumbrance from the Conditional Stewardship Easement and SSA Credit Agreement. If requested by the owner of the SSA lands, Collier County and the other grantees under the Stewardship Easement Agreement shall provide a written release and termination of easement and credit agreements for recording in the public records within 15 days of request from the owner of the SSA lands. Collier County shall update the overlay map to reflect the termination of any SSA or SRA.

This policy shall be implemented in the LDC within 12 months after adoption hereof.

For SSAs approved prior to this Policy 1.6.1 being adopted but have not changed ownership in whole or part since the creation of the SSA and have not transferred, sold or utilized Credits generated from the SSA, the property owner may withdraw the SSA designation provided an application for such withdrawal is implemented within 6 months of the adoption of this Policy 1.6.1.

Policy 1.7
The range of Stewardship Credit Values is hereby established using the specific methodology set forth on the Stewardship Credit Worksheet (Worksheet), incorporated herein as Attachment A. This methodology and related procedures for SSA designation will also be adopted as part of the Stewardship Overlay District in the Collier County Land Development Code (LDC). Such procedures shall include but ~~no~~ not be limited to the following: (1) All Credit transfers shall be recorded with the Collier County Clerk of Courts; (2) a covenant or perpetual restrictive easement shall also be recorded for each SSA, shall run with the land and shall be in favor of Collier County~~,~~ and the Florida Fish and Wildlife Conservation Commission and one of the following: Department of Environmental Protection, Department of Agriculture and Consumer Services, South Florida Water Management District, or a recognized statewide land trust; and (3) for each SSA, the Stewardship Sending Area Credit Agreement will identify the specific land management measures that will be undertaken and the party responsible for such measures.

Policy 1.8
The natural resource value of land within the RLSA is measured by the Stewardship Natural Resource Index (Index) set forth on the Worksheet. The Index established the relative natural resource value by objectively measuring six different characteristics of land and assigning an index factor based on each characteristic. The sum of these six factors is the index value for the land. Both the characteristics used and the factors assigned thereto were established after review and analysis of detailed information about the natural resource attributes of land within the RLSA so that development could be directed away from important natural resources. The six characteristics measured are: Stewardship Overlay Designation, Sending Area Proximity, Listed Species Habitat, Soils/Surface Water, Restoration Potential, and Land Use/Land Cover.

Policy 1.9
A Natural Resource Index Map Series (Index Map Series) indicates the Natural Resource Stewardship Index value for all land within the RLSA. Credits from any lands designated as SSAs, will be based upon the Natural Resource Index values in effect at the time of designation. Any change in the Characteristics of land due to alteration of the land prior to the establishment of a SSA that either increases or decreases any Index Factor will result in an adjustment of the factor values and a corresponding adjustment in the credit value. The Index and the Index Map Series are adopted as a part of the RLSA Overlay.

Policy 1.10
In SSAs, the greater the number of uses eliminated from the property, and the higher the natural resource value of the land, the higher the priority for protection, the greater the level of Credits that are generated from such lands, and therefore the greater the incentive to participate in the Stewardship Credit System and protect the natural resources of the land.

Policy 1.11
The Land Use Matrix, Attachment B, lists uses and activities allowed under the A, Rural Agricultural Zoning District within the Overlay. These uses are grouped together in one of eight separate layers in the Matrix. Each layer is discrete and shall be removed sequentially and cumulatively in the order presented in the Matrix, starting with the residential layer (layer one) and ending with the conservation layer (layer eight). If a layer is removed, all uses and activities in that layer are eliminated and are no longer available. Each layer is assigned a percentage of a base credit in the Worksheet. The assigned percentage for each layer to be removed is added together and then multiplied by the Index value on a per acre basis to arrive at a total Stewardship Credit Value of the land being designated as a SSA.

Policy 1.12
Credits can be transferred only to lands within the RLSA that meet the defined suitability criteria and standards set forth in Group 4 Policies. Such lands shall be known as Stewardship Receiving Areas or SRAs.

Policy 1.13
The procedures for the establishment and transfer of Credits and SRA designation are set forth herein and ~~will also be adopted as a~~ are part of the Rural Lands Stewardship Area Zoning Overlay District in the LDC (District). ~~LDRs creating the District will be adopted within one (1) year from the effective date of this Plan amendment.~~

Policy 1.14
Stewardship Credits will be exchanged for additional residential or non-residential entitlements in an SRA on a per acre basis, as described in Policy ~~4.18~~ 4.19. Stewardship density and intensity will thereafter differ from the Baseline Standards. The assignment or use of Stewardship Credits shall not require a GMP Amendment.

Policy 1.15
Land becomes designated as an SRA upon the adoption of a resolution by the Collier County Board of County Commissioners (BCC) approving the petition by the property owner seeking such designation. Any change in the residential density or non-residential intensity of land use on a parcel of land located within a SRA shall be specified in the resolution reflecting the total number of transferable Credits assigned to the parcel of land. Density and intensity within the RLSA or within an SRA shall not be increased beyond the Baseline Standards except through the provisions of the Stewardship Credit System, the Affordable-workforce Housing Density Bonus as referenced in the Density Rating System of the FLUE, and the density and intensity blending provision of the Immokalee Area Master Plan.

Policy 1.16
Stewardship Receiving Areas will accommodate uses that utilize creative land use planning techniques and Credits shall be used to facilitate the implementation of innovative and flexible development strategies described in Chapter 163.3177 (11), F.S.

Policy 1.17
Stewardship Credits may be transferred between different parcels or within a single parcel, subject to compliance with all applicable provisions of these policies. Residential clustering shall only occur within the RLSA through the use of the Stewardship Credit System, and other forms of residential clustering shall not be permitted.

Policy 1.18
A blend of Local, State, Federal and private revenues, such as but not limited to Florida Forever, Federal and State conservation and stewardship programs, foundation grants, private conservation organizations, local option taxes, general county revenues, and other monies can augment the Stewardship program through the acquisition of conservation easements, Credits, or land that is identified as the highest priority for natural resource protection, including, but is not limited to, areas identified on the Overlay Map as Flow way Stewardship Areas (FSAs), Habitat Stewardship Areas (HSAs), Water Retention Areas (WRAs) and land within the Big Cypress Area of Critical State Concern (ACSC).

Future Lands Use Element
Rural Lands Stewardship Area Overlay Amendments – CCPC Transmittal Draft

Policy 1.19
All local land or easement acquisition programs that are intended to work within the RLSA Overlay shall be based upon a willing participant/seller approach. It is not the intent of Collier County to use eminent domain acquisition within this system.

Policy 1.20
The County may elect to acquire Credits through a publicly funded program, using sources identified in Policy 1.18. Should the County pursue this option, it shall establish a Stewardship Credit Trust to receive and hold Credits until such time as they are sold, transferred or otherwise used to implement uses within Stewardship Receiving Areas.

~~**Policy 1.21**~~
~~The incentive based Stewardship Credit system relies on the projected demand for Credits As as the primary basis for permanent protection of agricultural lands, flowways, habitats and water retention areas. The County recognizes that there may be a lack of significant demand for Credits in the early years of implementation, and also recognizes that a public benefit would be realized by the early designation of SSAs. To address this issue and to promote the protection of natural resources, the implementation of the Overlay will include an early entry bonus to encourage the voluntary establishment of SSAs within the RLSA. The bonus shall be in the form of an additional one Stewardship Credit per acre of land designated as a HSA located outside of the ACSC and one half Stewardship Credit per acre of land designated as HSA located inside the ACSC. The early entry bonus shall be available for five years from the effective date of the adoption of the Stewardship Credit System in the LDC. The early designation of SSAs, and resulting protection of flowways, habitats, and water retention areas does not require the establishment of SRAs or otherwise require the early use of Credits, and Credits generated under the early entry bonus may be used after the termination of the bonus period. The maximum number of Credits that can be generated under the bonus is 27,000 Credits, and such Credits shall not be transferred into or used within the ACSC.~~

Policy <u>1.21</u> ~~1.22~~
The RLSA Overlay was designed to be a long-term strategic plan. ~~with a planning horizon Year of 2025.~~ Many of the tools, techniques and strategies of the Overlay are new, innovative, <u>and</u> incentive based~~, and have yet to be tested in actual implementation.~~ A comprehensive review of the Overlay shall be prepared for and reviewed by Collier County <u>every seven (7) years beginning [date of adoption of this Ordinance]</u>.~~and the Department of Community Affairs upon the five year anniversary of the adoption of the Stewardship District in the LDC. as part of the Evaluation and Appraisal Report process.~~ The purpose of the review shall be to assess the participation in and effectiveness of the Overlay implementation in meeting the Goal, Objective and Policies set forth herein. The specific measures of review shall be as follows:

1. The amount and location of land designated as FSAs, HSAs, WRAs and other SSAs.
2. The amount and location of land designated as SRAs.
3. The number of Stewardship Credits generated, assigned or held for future use.
4. A comparison of the amount, location and type of Agriculture that existed at the time of a Study and time of review.
5. The amount, location and type of land converted to non-agricultural use with and without participation in the Stewardship Credit System since its adoption.

6. The extent and use of funding provided by Collier County and other sources Local, State, Federal and private revenues described in Policy 1.18.
7. The amount, location and type of restoration through participation in the Stewardship Credit System since its adoption.

~~8. The potential for use of Credits in urban areas.~~

At the direction of the Board of County Commissioners, additional review measures may be considered.

Policy 1.22
The total number of Stewardship Credit shall be capped at 404,000 to entitle no more than 45,000 acres of Stewardship Receiving Areas. Generating Stewardship Credits does not presume approval of Stewardship Receiving Areas.

Group 2 - Policies
To ~~protect agricultural lands from premature conversion to other uses and~~ retain land for agricultural activities through the use of established incentives in order to continue the viability of agricultural production through the Collier County Rural Lands Stewardship Area Overlay.

Policy 2.1
Agricultural landowners will be provided with ~~lands will be protected from premature conversion to other uses by creating~~ incentives that encourage the voluntary elimination of the property owner's right to convert agriculture land to non-agricultural uses in exchange for compensation as described in Polic~~i~~es 1.4 and 2.2 and by the establishment of SRAs. ~~as the form of compact rural development in the RLSA Overlay. Analysis has shown that SRAs will allow the projected population of the RLSA in the Horizon year of 2025 to be accommodated on approximately 10% of the acreage otherwise required if such compact rural development were not allowed due to the flexibility afforded to such development. The combination of stewardship incentives and land efficient compact rural development will minimize two of the primary market factors that cause premature conversion of agriculture.~~

Policy 2.2
Agriculture lands protected through the use of Stewardship Credits shall be designated as Stewardship Sending Areas (SSAs) as described in Policy 1.6. The protection measures for SSAs are set forth in Policies 1.6, 1.7, 1.10, and 1.17. In addition to protecting agriculture activities in SSAs within FSA, HSA, and WRA, as further described in Policies 3.1, 3.2 and 3.3, additional incentives are desired to retain agriculture within Open Lands as an alternative to conversion of such lands to other uses, using Baseline Standards as described in Policy 1.5. Open Lands are those lands not designated SSA, SRA, WRA, HSA, FSA, or public lands on the Rural Lands Stewardship Area Overlay Map. Open Lands are those lands described in Policy 4.2. Therefore, in lieu of using the Natural Resource Index on land designated Open Lands, these lands shall be assigned two (2.0) Stewardship Credits per acre ~~outside of the Area of Critical State Concern (ACSA), and two and sixth tenths (2.6) Credits per acre within the ACSC as established by F.S. 380.055 as of March 3, 2009.~~ All non-agriculture uses shall be removed from Open Lands and the remaining uses are limited to agriculture Land Use Levels 5, 6 and 7 on the Land Use Matrix. Each layer is discreet and shall be removed sequentially and cumulatively in the order presented in the Matrix. If a layer is removed, all uses and activities in that layer are eliminated and no longer available. SSA's created under this Policy will be known as an Agricultural SSA. Following approval of an Agricultural SSA,

Collier County shall periodically update the RLSA Zoning Overlay District Map to delineate the boundaries of the Agricultural SSA.

Policy 2.3
~~Within one (1) year from the effective date of these amendments,~~ Collier County ~~will~~ may establish an Agriculture Advisory Council comprised of not less than five nor more than nine appointed representatives of the agriculture industry, to advise the BCC on matters relating to Agriculture. The Agriculture Advisory Council (AAC) will work to identify opportunities and prepare strategies to enhance and promote the continuance, expansion and diversification of agriculture in Collier County. The AAC will also identify barriers to the continuance, expansion and diversification of the agricultural industry and will prepare recommendations to eliminate or minimize such barriers in Collier County. ~~The AAC will also assess whether exceptions from standards for business uses related to agriculture should be allowed under an administrative permit process and make recommendations to the BCC.~~

Policy 2.4
The BCC will consider the recommendations of the AAC and facilitate the implementation of strategies and recommendations identified by the ACC that are determined to be appropriate. The BCC may adopt amendments to the LDC that implement policies that support agriculture activities.

Policy 2.5
Agriculture is an important aspect of Collier County's quality of life and economic well-being. Agricultural activities shall be protected from duplicative regulation as provided by the Florida Right-to-Farm Act.

Policy 2.6
Notwithstanding the special provisions of Policies 3.9 and 3.10, nothing herein or in the implementing LDRs, shall restrict lawful agricultural activities on lands within the RLSA that have not been placed into the Stewardship program.

Group 3 – Policies to protect water quality and quantity and maintain the natural water regime, as well as listed animal and plant species and their habitats by directing incompatible uses away from wetlands and upland habitat through the establishment of Flow way Stewardship Areas, Habitat Stewardship Areas, and Water Retention Areas, where lands are voluntarily included in the Rural Lands Stewardship Area program.

Policy 3.1
Protection of water quality and quantity, and the maintenance of the natural water regime shall occur through the establishment of Flowway Stewardship Areas (FSAs), as SSAs within the RLSA Overlay. FSAs are delineated on the Overlay Map and contain approximately ~~31,100~~ 30,869 acres. FSAs are primarily privately owned wetlands that are located within the Camp Keais Strand and Okaloacoochee Slough. These lands form the primary wetland flowway systems in the RLSA. The Overlay provides an incentive to permanently protect FSAs by the creation and transfer of Credits, elimination of incompatible uses, and establishment of protection measures described in Group 1 Policies. Not all lands within the delineated FSAs are comparable in terms of their natural resource value; therefore the index shall be used to differentiate higher value from lower value lands for the purpose of Overlay implementation. The

Analysis of the Index Map Series shows that FSA lands score within a range of 0.7 to 2.4; approximately 96% score greater than 1.2 while 4% score 1.2 or less. The average Index score of FSA land is 1.8.

Policy 3.2
Listed animal and plant species and their habitats shall be protected through the establishment of Habitat Stewardship Areas (HSAs), as SSAs within the RLSA Overlay. HSAs are delineated on the Overlay Map and contain approximately ~~40,000~~ ~~45,782~~ 39,991 acres. HSAs are privately owned agricultural areas, which include both areas with natural characteristics that make them suitable habitat for listed species, as well as ~~and~~ areas without these characteristics. These latter areas are included because they are located contiguous to habitat to help form a continuum of landscape that can augment habitat values. The Overlay provides an incentive to permanently protect HSAs by the creation and transfer of Credits, resulting in the elimination of incompatible uses and the establishment of protection measures described in Group 1 Policies. Not all lands within the delineated HSAs are comparable in terms of their habitat value; therefore the index shall be used to differentiate higher value from lower value lands for the purpose of Overlay implementation. Analysis of the Index Map Series shows that HSA lands score within a range of 0.6 to 2.2. There are approximately ~~13,800~~ 15,156 acres of cleared agricultural fields located in HSAs. The average Index score of ~~HAS~~ HSA designated lands is 1.3, however, the average index score of the naturally vegetated areas within HSAs is 1.5.

Policy 3.3
Further protection for surface water quality and quantity shall be through the establishment of Water Retention Areas (WRAs), as SSAs within the RLSA Overlay. WRAs are delineated on the Overlay Map and contain approximately ~~18,200~~ 18,428 acres. WRAs are privately owned lands that have been permitted by the South Florida Water Management District to function as agricultural water retention areas. In many instances, these WRAs consist of native wetland or upland vegetation; in other cases they are excavated water bodies or may contain exotic vegetation. The Overlay provides an incentive to permanently protect WRAs by the creation and transfer of Credits, elimination of incompatible uses, and establishment of protection measures described in Group 1 Policies. Not all lands within the delineated WRAs are comparable in terms of their natural resource value; therefore, the index shall be used to differentiate higher value from lower value lands for the purpose of Overlay implementation. Analysis of the Index Map Series shows that WRA lands score within a range of 0.6 to 2.4; approximately 74% score greater than 1.2 while 26% score 1.2 or less. The average Index score of WRA land is 1.5.

Policy 3.4
Public and private conservation areas exist in the RLSA and serve to protect natural resources. Corkscrew Marsh and Okaloacoochee Slough State Forest include approximately 13,500 acres. Analysis shows that they score within an Index range of 0.0 to 2.2; with an average Index score of 1.5. Because these existing public areas, and any private conservation areas, are already protected, they are not delineated as SSAs and are not eligible to generate Credits but do serve an important role in meeting the Goal of the RLSA.

Policy 3.5
Residential uses, General Conditional uses, Earth Mining and Processing Uses, and Recreational Uses (layers 1-4) as listed in the Matrix shall be eliminated in FSAs in exchange for compensation to the property owner as described in Policy 3.7. Conditional use essential services and governmental essential services, other than those necessary to serve permitted uses or for public safety, shall only be allowed in FSAs with a Natural Resource Stewardship Index value of 1.2 or less. Where practicable, directional

drilling techniques and/or previously cleared or disturbed areas shall be utilized for oil and gas extraction in FSAs in order to minimize impacts to native habitats. Other layers may also be eliminated at the election of the property owner in exchange for compensation. The elimination of the Earth Mining layer shall not preclude the excavation of lakes or other water bodies if such use is an integral part of a restoration or mitigation program within an FSA.

Policy 3.6
Residential Land Uses listed in the Matrix shall be eliminated in Habitat Stewardship Sending Areas in exchange for compensation to the property owner as described in Policy 3.8. Other layers may also be eliminated at the election of the property owner in exchange for compensation.

Policy 3.7 (recommended amendment)
General Conditional Uses, Earth Mining and Processing Uses, and Recreational Uses shall be allowed only on HSA lands with a Natural Resource Stewardship Index value of 1.2 or less. Conditional use essential services and governmental essential services, other than those necessary to serve permitted uses or for public safety, shall only be allowed in HSAs with a Natural Resource Stewardship Index value of 1.2 or less. Asphaltic and concrete batch making plants are prohibited in all HSAs. Where practicable, directional drilling techniques and/or previously cleared or disturbed areas shall be utilized for oil and gas extraction in HSAs in order to minimize impacts to native habitats. In addition to the requirements imposed in the LDC for approval of a Conditional Use, such uses will only be approved upon submittal of ~~an EIS~~ ~~Environmental Impact Statement (EIS)~~ Environmental Data which demonstrates that clearing of native vegetation has been minimized, the use will not significantly and adversely impact listed species and their habitats and the use will not significantly and adversely impact aquifers. As an alternative to the foregoing, the applicant may demonstrate that such use is an integral part of an approved restoration or mitigation program. Golf Course design, construction, and operation in any HSA shall comply with the best management practices of Audubon ~~International's Gold Program~~ Cooperative Sanctuary Program (ASCP) for Golf. and the Florida Department of Environmental Protection. Compliance with the following standards shall be considered by Collier County as meeting the requirement for minimization of impact:

- Clearing of native vegetation shall not exceed 15% of the native vegetation on the parcel.
- Areas previously cleared shall be used preferentially to native vegetated areas.
- Buffering to Conservation Land shall comply with Policy 4.13.

Policy 3.8
Compensation to the property owner may occur through one or more of the following mechanisms: creation and transfer of Stewardship Credits, acquisition of conservation easements, acquisition of less than fee interest in the land, or through other acquisition of land or interest in land through a willing seller program.

Policy 3.9

1. Agriculture will continue to be a permitted use and its supporting activities will continue to be permitted as conditional uses within FSAs and HSAs, pursuant to the Agriculture Group classifications described in the Matrix. The Ag 1 group includes row crops, citrus, specialty farms, horticulture, plant nurseries, improved pastures for grazing and ranching, ~~aquaculture~~ and similar activities, including related agricultural support uses. In existing Ag 1 areas within FSAs and HSAs, all such activities are permitted to continue, and may convert from one type of Agriculture to another and expand to the limits allowed by applicable permits. Once the Stewardship Credit

System is utilized and an owner receives compensation as previously described, no further expansion of Ag 1 will be allowed in FSAs and HSAs beyond existing or permitted limits within property subject to a credit transfer, except for incidental clearing as set forth in Paragraph 2 below.

2. In order to encourage viable Ag 1 activities, and to accommodate the ability to convert from one Ag 1 use to another, incidental clearing is allowed to join existing Ag 1 areas, square up existing farm fields, or provide access to or from other Ag 1 areas, provided that the Ag 1 Land Use Layer has been retained on the areas to be incidentally cleared, and the Natural Resource Index Value score has been adjusted to reflect the proposed change in land cover. Incidental clearing is defined as clearing that meets the above criteria and is limited to 1% of the area of the SSA. In the event said incidental clearing impacts lands having a Natural Resource Index Value in excess of 1.2, appropriate mitigation shall be provided.

Policy 3.10
Ag 2 includes unimproved pastures for grazing and ranching, forestry and similar activities, including related agricultural support uses. In existing Ag 2 areas within FSAs and HSAs, such activities are permitted to continue, and may convert from one type of Agriculture to another and expand to the limits allowed by applicable permits. Once the Stewardship Credit System is utilized and an owner receives compensation as previously described, no further expansion of Ag 2 or conversion of Ag 2 to Ag 1 will be allowed in FSAs or HSAs beyond existing or permitted limits within property subject to a credit transfer.

Policy 3.11
1. In certain locations there may be the opportunity for flow-way or habitat restoration. Examples include, but are not limited to, locations where flow-ways have been constricted or otherwise impeded by past activities, or where additional land is needed to enhance wildlife corridors. ~~Priority shall be given to restoration within the Camp Keais Strand FSA or contiguous HSAs.~~ Should a property owner be willing to ~~dedicate~~ designate land for restoration activities within a FSA or HSA ~~the Camp Keais Strand FSA or contiguous HSAs, four~~ one additional Stewardship Credit~~s~~ shall be assigned for each acre of land so dedicated. ~~An additional two Stewardship credits shall be assigned for each acre of land dedicated for restoration activities within other FSAs and HSAs.~~ The actual implementation of restoration improvements is not required for the owner to receive such Credit and the costs of restoration shall be borne by the governmental agency or private entity undertaking the restoration. Should an owner also complete restoration improvements, this shall be rewarded with ~~four~~ additional Credits for each acre of restored land upon demonstration that the restoration met applicable success criteria, as defined in the Land Development Code or as determined by the permit agency authorizing said restoration. The additional Credits shall be rewarded for either caracara restoration at 2 Credits per acre, or for exotic control/burning at 5 Credits per acres, or for flow way restoration at 5 Credits per acre, or for native habitat restoration at 7 Credits per acre. Within the area proposed for restoration, Land Use Layers 1-6 must be removed. The specific process for assignment of additional restoration Credits shall be included in the Stewardship District of the LDC.

2. In certain locations, as generally illustrated in the RLSA Overlay Map, there may be opportunities to create, restore, and enhance a northern panther corridor connection and a southern panther corridor connection. Should a property owner in a federally approved corridor designate the required property for such corridor, 2 Stewardship Credits shall be assigned for each acre of land so designated

~~dedicated~~. Should an owner also complete panther corridor restoration improvements, this shall be rewarded with ~~four~~ 8 additional Credits for each acre of restored land upon demonstration that the restoration met applicable success criteria as determined by the federal permit agency authorizing said restoration. Issuance of the 8 restoration implementation credits may be phased to coincide with a phased implementation process in accordance with the federal permit. The procedures shall be set forth in the LDC

3. In order to address a significant loss in Southwest Florida of seasonal, shallow wetland wading bird foraging habitat, restoration of these unique habitats will be incentivized in the RLSAO. Designation of any area inside an FSA, HSA, or WRA for such seasonal wetland restoration shall be rewarded with 2 additional Credit~~s~~ per acre. Should the landowner successfully complete the restoration, an additional 8 Credits per acre shall be awarded upon demonstration that the restoration met applicable success criteria as determined by the permit agency authorizing said restoration.

4. Only one type of restoration shall be rewarded with these Credits for each acre designated for restoration and in no case shall more than 10 Credits be awarded per acre.

This policy does not preclude other forms of compensation for restoration which may be addressed through public-private partnership agreement such as a developer contribution agreement or stewardship agreement between the parties involved. Also not precluded are various private and publicly funded restoration programs such as the federal Farm Bill conservation programs. The specific process for assignment of additional restoration credits shall be included in the Stewardship District of the LDC.

Policy 3.12
Based on the data and analysis of the Study, FSAs, HSAs, WRAs, and existing public/private conservation land include the land appropriate and necessary to accomplish the Goal pertaining to natural resource protection. To further direct other uses away from and to provide additional incentive for the protection, enhancement and restoration of the Okaloacoochee Slough and Camp Keais Strand, all land within 500 feet of the delineated FSAs that comprise the Slough or Strand that is not otherwise included in a HSA or WRA shall receive the same natural index score (0.6) that a HSA receives if such property is designated as a SSA and retains only agricultural, recreational and/or conservation layers within the matrix.

Policy 3.13
Water Retention Areas (WRAs) as generally depicted on the Overlay Map have been permitted for this purpose and will continue to function for surface water retention, detention, treatment and/or conveyance, in accordance with the South Florida Water Management District (SFWMD) permits applicable to each WRA. WRAs can also be permitted to provide such functions for new uses of land allowed within the Overlay. WRAs may be incorporated into an SRA master plan to provide water management functions for properties within such SRA, but are not required to be designated as a SRA in such instances. However, if the WRA provides stormwater quality treatment for an SRA, the acreage of the WRA used for stormwater quality treatment for the SRA shall be included in the SRA credit calculation. WRA boundaries are understood to be approximate and are subject to refinement in accordance with SFWMD permitting.

Policy 3.14
During permitting to serve new uses, additions and modifications to WRAs may be required or desired, including but not limited to changes to control elevations, discharge rates, storm water pre-treatment,

grading, excavation or fill. Such additions and modifications shall be allowed subject to review and approval by the SFWMD in accordance with best management practices. Such additions and modifications to WRAs shall be designed to ensure that there is no net loss of habitat function within the WRAs unless there is compensating mitigation or restoration in other areas of the Overlay that will provide comparable habitat function. Compensating mitigation or restoration for an impact to a WRA contiguous to the Camp Keais Strand or Okaloacoochee Slough shall be provided within or contiguous to that Strand or Slough.

Policy 3.15
Any development on lands participating in the RLSA Overlay ~~Program~~ shall be compatible with surrounding land uses. ~~Within one year of the effective date of this Policy~~ By [1 year of the date of adoption of the ordinance], LDC regulations shall be initiated for outdoor lighting to protect the nighttime environment, conserve energy, and enhance safety and security.

Group 4 - Policies to enable conversion of rural lands to other uses in appropriate locations, while discouraging urban sprawl, and encouraging development that utilizes creative land use planning techniques by the establishment of Stewardship Receiving Areas.

Policy 4.1
Collier County will encourage and facilitate uses that enable economic prosperity and diversification of the economic base of the RLSA. Collier County will also encourage development that utilizes creative land use planning techniques and facilitates a compact form of development to accommodate population growth by the establishment of Stewardship Receiving Areas (SRAs). Incentives to encourage and support the diversification and vitality of the rural economy such as flexible development regulations, expedited permitting review, and targeted capital improvements shall be incorporated into the LDC Stewardship District.

Policy 4.2
All privately owned lands within the RLSA which meet the criteria set forth herein are eligible for designation as an SRA, except land delineated as a FSA, HSA, WRA or land that has been designated as a Stewardship Sending Area. The exception, consistent with Policy 3.13, is when a WRA provides stormwater quality treatment for an SRA, then the acreage of the WRA used for stormwater quality treatment for the SRA shall be included in the SRA. Land proposed for SRA designation shall meet the suitability criteria and other standards described in Group 4 Policies. Due to the long-term vision of the RLSA Overlay, ~~extending to a horizon year of 2025,~~ and in accordance with the guidelines established in Chapter 163.3177(11) F.S., the specific location, size and composition of each SRA cannot and need not be predetermined in the GMP. In the RLSA Overlay, lands that are eligible to be designated as SRAs generally have similar physical attributes as they consist predominately of agriculture lands which have been cleared or otherwise altered for this purpose. Lands shown on the Overlay Map as eligible for SRA designation include approximately ~~74,500~~ 72,000 acres outside of the ACSC and approximately ~~18,300~~ 15,000 acres within the ACSC. Total SRA designation shall be a maximum of 45,000 acres. ~~Approximately 2% of these lands achieve an Index score greater than 1.2.~~ Because the Overlay requires SRAs to be compact, mixed-use and self sufficient in the provision of services, facilities and infrastructure, traditional locational standards normally applied to determine development suitability are not relevant or applicable to SRAs. Therefore the process for designating a SRA follows the ~~principles of the Rural Lands Stewardship Act as further described~~ procedures set forth herein and the adopted RLSA Zoning Overlay District.

Policy 4.3
Land becomes designated as a SRA upon petition by a property owner to Collier County seeking such designation and the adoption of a resolution by the BCC granting the designation. The petition shall include a SRA master plan as described in Policy 4.5. The basis for approval shall be a finding of consistency with the policies of the Overlay, including required suitability criteria set forth herein, compliance with the LDC Stewardship District, and assurance that the applicant has acquired or will acquire sufficient Stewardship Credits to implement the SRA uses. ~~Within one year from the effective date of this amendment, Collier County shall adopt LDC amendments to establish the procedures and submittal requirements for designation as a SRA, to include provisions for consideration of impacts, including environmental and public infrastructure impacts, and provisions for public notice of and the opportunity for public participation in any consideration by the BCC of such a designation.~~

Policy 4.4
Collier County will update the Overlay Map to delineate the boundaries of each approved SRA. Such updates ~~shall not require an amendment to the Growth Management Plan but~~ shall be retroactively incorporated into the adopted Overlay Map ~~during the EAR based~~ by amendment ~~process when it~~ periodically initiated by the County. ~~occurs.~~

Policy 4.5 (recommended amendment)
To address the specifics of each SRA, a master plan of each SRA will be prepared and submitted to Collier County as a part of the petition for designation as a SRA. The master plan will demonstrate that the SRA complies with all applicable policies of the Overlay and the LDC Stewardship District and is designed so that incompatible land uses are directed away from wetlands and critical habitat identified as FSAs and HSAs on the Overlay Map. The SRA Master Plan shall comply with the County's then-adopted MPO Long Range Transportation Plan (LRTP), ~~the County Build Out Vision Plan as may be amended and referenced in Policy 3.7 of the Transportation Element,~~ and Access Management procedures.

Each SRA master plan shall include a Management Plan with provisions for minimizing human and wildlife interactions. Low intensity land uses (e.g. passive recreation areas, golf courses) and vegetation preservation requirements, including agriculture, shall be used to establish buffer areas between wildlife habitat areas and areas dominated by human activities. Consideration shall be given to the most current Florida Fish and Wildlife Commission guidelines and regulations on techniques to reduce human wildlife conflict. The management plans shall also require the dissemination of information to local residents, businesses and governmental services about the presence of wildlife and practices that enable responsible coexistence with wildlife, while minimizing opportunities for negative interaction, such as appropriate waste disposal practices.

Policy 4.6
SRA characteristics shall be based upon innovative planning and development strategies referenced in Chapter 163.3177 (11), F.S. and 9J-5.006(5)(l). These planning strategies and techniques include urban villages, new towns, satellite communities, area-based allocations, clustering and open space provisions, and mixed-use development that allow the conversion of rural and agricultural lands to other uses while protecting environmentally sensitive areas, maintaining the economic viability of agricultural and other predominantly rural land uses, and providing for the cost-efficient delivery of public facilities and services. The SRA shall also include a mobility plan that includes vehicular, bicycle/pedestrian, public transit, internal circulators, and other modes of travel/movement within and between SRAs and areas of

outside development and land uses. The mobility plan shall provide mobility strategies such as bus subsidies, route sponsorship or other incentives which encourage the use of mass transit services. The development of SRAs shall also consider the needs identified in the ~~County Build Out Vision Plan~~ MPO Long Range Transportation Needs Plan, and plan land uses to accommodate services that would increase internal capture and reduce trip length and long-distance travel. Such development strategies are recognized as methods of discouraging urban sprawl, encouraging alternative modes of transportation, increasing internal capture and reducing vehicle miles traveled.

Policy 4.7
There are ~~four~~ three specific forms of SRA permitted within the Overlay. These are Towns, Villages, ~~Hamlets~~, and Compact Rural Development (CRD). The Characteristics of Towns, Villages, ~~Hamlets,~~ and CRD are set forth in **Attachment C** and are generally described in Policies 4.7.1, 4.7.2, and 4.7.3 ~~and 4.7.4~~. ~~Collier County shall establish more s~~ Specific regulations, guidelines and standards within the LDC Stewardship District ~~to~~ guide the design and development of SRAs to include innovative planning and development strategies as set forth in Chapter 163.3177 (11), F.S. and 9J-5.006(5)(l). The size and base density of each form shall be consistent with the standards set forth on Attachment C. The maximum base residential density as set forth in Attachment C may only be exceeded through the density blending process as set forth in density and intensity blending provision of the Immokalee Area Master Plan or through the affordable-workforce housing density bonus as referenced in the Density Rating System of the Future Land Use Element. The base residential density is calculated by dividing the total number of residential units in a SRA by the overall area therein. The base residential density does not restrict net residential density of parcels within a SRA. The location, size and density of each SRA will be determined on an individual basis during the SRA designation review and approval process.

Policy 4.7.1
Towns are the largest and most diverse form of SRA, with a full range of housing types and mix of uses. Towns have urban level services and infrastructure that support development that is compact, mixed use, human scale, and provides a balance of land uses to reduce automobile trips and increase livability. Towns shall be ~~not less than 1,000~~ greater than 1,500 acres and up to ~~or more than 4,000~~ 5,000 acres and are comprised of several villages and/or neighborhoods that have individual identity and character. Towns shall have a mixed-use town center that will serve as a focal point for community facilities and support services. Towns shall be designed to encourage pedestrian and bicycle circulation by including an interconnected sidewalk and pathway system serving all residential neighborhoods. Towns shall include an internal mobility plan, which shall include a transfer station or park and ride area that is appropriately located within the town to serve the connection point for internal and external public transportation. Towns shall have at least one community park with a minimum size of 200 square feet per dwelling unit in the Town.

Towns shall also have parks or public green spaces within neighborhoods. Towns shall include both community and neighborhood scaled retail and office uses, ~~in a ratio~~ as ~~provided~~ described in Policy ~~4.15~~ 4.15.1. Towns may also include those compatible corporate office, research, development companies, and light industrial uses such as those permitted in the Business Park and Research and Technology Park Subdistricts of the FLUE, and those included in Policy 4.7.4. Towns shall be the preferred location for the full range of schools, and to the extent possible, schools and parks shall be located abutting each other to allow for the sharing of recreational facilities and as provided in Policies 4.15.2 and 4.15.3. Design criteria for Towns are ~~shall be~~ included in the LDC Stewardship District. Towns shall not be located within the ACSC.

Policy 4.7.2 (recommended amendment)
Villages are ~~primarily residential~~ communities with a diversity of housing types and mix of uses appropriate to the scale and character o0f the particular village. Villages shall be not less than ~~100~~ 300 acres, and up to ~~or more than~~ 1,000 acres inside the Area of Critical State Concern and up to ~~not more than~~ 1,500 acres outside the Area of Critical State Concern. Villages are comprised of residential neighborhoods and shall include a mixed-use village center to serve as the focal point for the community's support services and facilities. Villages shall be designed to encourage pedestrian and bicycle circulation by including an interconnected sidewalk and pathway system serving all residential neighborhoods. Villages shall have parks or public green spaces within neighborhoods. Villages shall include neighborhood scaled retail and office uses, in a ratio as provided in Policy 4.15. Appropriately scaled uses described in Policy ~~4.7.4~~ 4.7.3 shall also be permitted in Villages. Villages are an appropriate location for a full range of schools. To the extent possible, schools and parks shall be located adjacent to each other to allow for the sharing of recreational facilities. Design criteria for Villages ~~shall be~~ are included in the LDC Stewardship District. Villages greater than 500 acres shall include an internal mobility plan which shall include a transfer station or park and ride area that is appropriately located within the village to serve the connection point for internal and external public transportation.

~~**Policy 4.7.3**~~
~~Hamlets are small rural residential areas with primarily single-family housing and limited range of convenience-oriented services. Hamlets shall be not less than 40 or more than 100 acres. Hamlets will serve as a more compact alternative to traditional five-acre lot rural subdivisions currently allowed in the baseline standards. Hamlets shall have a public green space for neighborhoods. Hamlets include convenience retail uses, in a ratio as provided in Attachment C. Hamlets may be an appropriate location for pre-K through elementary schools. Design criteria for Hamlets shall be included in the LDC Stewardship District. To maintain a proportion of Hamlets to Villages and Towns, not more than 5 Hamlets, in combination with CRDs of 100 acres or less, may be approved as SRAs prior to the approval of a Village or Town, and thereafter not more than 5 additional Hamlets, in combination with CRDs of 100 acres or less, may be approved for each subsequent Village or Town.~~

Policy ~~4.7.4~~ 4.7.3
Compact Rural Development (CRD) is a form of SRA that ~~will provide flexibility with respect to the mix of uses and design standards but shall otherwise comply with the standards of a Hamlet or Village.~~ shall support and further Collier County's valued attributes of agriculture, natural resources and economic diversity. CRDs shall demonstrate a unique set of uses and support services necessary to further these attributes within the RLSA. Primary CRD uses shall be those associated with and needed to support research, education, convenience retail, tourism or recreation. A CRD may include but is not required to have permanent residential housing~~. and the services and facilities that support permanent residents.~~ and the services that support permanent residents. The number of residential units shall be equivalent with the demand generated by the primary CRD use but shall not exceed the maximum of two units per gross acre. A CRD shall be a maximum size of ~~100~~ 300 acres. ~~An example of a CRD is an ecotourism village that would have a unique set of uses and support services different from a traditional residential village. It would contain transient lodging facilities and services appropriate to eco-tourists, but may not provide for the range of services that are necessary to support permanent residents. Except as described above, a CRD will conform to the characteristics of a Village or Hamlet as set forth on Attachment C based on the size of the CRD. As residential units are not a required use, those goods and services that support residents~~

Text underlined is added; text ~~strike through~~ is deleted.
Rows of Asterisks (** *** **) denotes break in text.

~~such as retail, office, civic, governmental and institutional uses shall also not be required, .~~ ~~H~~however, ~~for any CRD that does include permanent residential housing, the proportionate support services listed above shall be provided in accordance with Attachment C. To maintain a proportion of CRDs of 100 acres or less to Villages and Towns, not more than 5 CRDs of 100 acres or less, in combination with Hamlets, may be approved as SRAs prior to the approval of a Village or Town, and thereafter nor more than 5 additional CRDs of 100 acres or less, in combination with Hamlets, may be approved ofr each subsequent Village or Town.~~ To maintain a proportion of CRDs of ~~100~~ 300 acres or less to Villages and Towns, not more than 5 CRDs of ~~100~~ 300 acres or less may be approved as SRAs prior to the approval of a Village or Town, and thereafter not more than 5 additional CRDs of ~~100~~ 300 acres or less may be approved prior to each subsequent Village or Town. ~~There shall be no more than 5 CRDs of more than 100 acres in size. The appropriateness of this limitation shall be reviewed in 5 years pursuant to Policy 1.22.~~

Policy 4.7.4
Existing urban areas, Towns and Villages shall be the preferred location for business and industry within the RLSA, to further promote economic sustainability and development, diversification and job creation. The business and industry use allowed includes, but is not limited to, those as defined as Florida Qualified Target Industries. The appropriate scale and compatibility of these uses within a Town or Village will be addressed during SRA application process.

Policy 4.7.5
To address the accommodation of Affordable Housing in a Town or Village, the SRA applicant shall utilize one of the following options:

1) Affordable Housing Land Reservation
   a) Reservation of one or more site(s) within the SRA or within a proximal SRA in the RLSAO with densities and development standards that accommodate Affordable Housing residential uses at a minimum density of 10 units per acre, for acquisition by either Collier County, a Community Land Trust, a private developer or any other affordable housing provider.
   b) The aggregate acreage of such site(s) shall be equal to or greater than 2.5% of the gross area of the SRA.
   c) The acreage of land reserved for Affordable Housing will be considered as a Public Benefit Use and not require the consumption of Stewardship Credits but shall be included in the calculation of total SRA acreage.
   d) The County shall verify the site(s) is/are appropriate and approve the site(s) at time of SRA approval, subject to standards to be established in the LDC.
   e) Affordable Housing units shall be excluded from the Traffic Impact Statement or trip cap for the SRA in which they are located.
2) Alternatives proposed by the SRA Applicant
   a) While compliance with the Land Reservation described above shall be deemed to satisfy affordable housing requirements, other options may be proposed by the SRA applicant and approved by the Board of County Commissioners to address housing affordability issues in the subject SRA.
3) The process and procedures to implement this policy shall be set forth in the Rural Lands Stewardship Area Overlay Zoning District.

Policy 4.8
An SRA may be contiguous to an FSA or HSA, but shall not encroach into such areas, and shall buffer such areas as described in Policy 4.13. An SRA may be contiguous to and served by a WRA ~~without requiring the WRA to be designated as an SRA~~ in accordance with Policy 3.12 and 3.13.

Policy 4.9 (recommended amendment)
An SRA must contain sufficient suitable land to accommodate the planned development in an environmentally acceptable manner. The primary means of directing development away from wetlands and critical habitat is the prohibition of locating SRAs in FSAs~~,~~ and HSAs~~, and WRAs~~. To further direct development away from wetlands and critical habitat, residential, commercial, manufacturing/light industrial, group housing, and transient housing, institutional, civic and community service uses within a SRA shall not be sited on lands that receive a Natural Resource Index value of greater than 1.2. In addition, conditional use essential services and governmental essential services, with the exception of those necessary to serve permitted uses and for public safety, shall not be sited on lands that receive a Natural Resource Index value of greater than 1.2. Infrastructure necessary to serve permitted uses may be exempt from this restriction, provided that designs seek to minimize the extent of impacts to any such areas. The Index value of greater than 1.2 represents those areas that have a high natural resource value as measured pursuant to Policy 1.8. Less than 2% of potential SRA land achieves an Index score of greater than 1.2.

Policy 4.10 (recommended amendment)
Within the RLSA Overlay, open space, which by definition shall include public and private conservation lands, underdeveloped areas of designated SSAs, agriculture, water retention and management areas and recreation uses, will continue to be the dominant land use. Therefore, open space adequate to serve the forecasted population and uses within the SRA is provided. To ensure that SRA residents have such areas proximate to their homes, open space shall also comprise a minimum of thirty-five percent of the gross acreage of an individual SRA Town~~,~~ or Village. ~~, or those CRDs exceeding 100 acres.~~ Lands within a SRA greater than one acre with Index values of greater than 1.2 shall be retained as open space~~.~~ except for the allowance of uses described in Policy 4.9. ~~As an incentive to encourage open space, such uses within an SRA, located outside of the ACSC, exceeding the required thirty five percent shall not be required to consume Stewardship Credits but shall be counted as part of the SRA acreage.~~

Policy 4.11
The perimeter of each SRA shall be designed to provide a transition from higher density and intensity uses within the SRA to lower density and intensity uses on adjoining property. The edges of SRAs shall be well defined and designed to be compatible with the character of adjoining property. Techniques such as, but not limited to setbacks, landscape buffers, and recreation/open space placement may be used for this purpose. Where existing agricultural activity adjoins an SRA, the design of the SRA must take this activity into account to allow for the continuation of the agricultural activity and to minimize any conflict between agriculture and SRA uses.

Policy 4.12
Where an SRA adjoins a FSA, HSA, WRA or existing public or private conservation land delineated on the Overlay Map, best management and planning practices shall be applied to minimize adverse impacts to such lands. SRA design shall demonstrate that ground water table draw down or diversion will not adversely impact the adjacent FSA, HSA, WRA or conservation land. Detention and control elevations

shall be established to protect such natural areas and be consistent with surrounding land and project control elevations and water tables.

Policy 4.13
Open space within or contiguous to a SRA shall be used to provide a buffer between the SRA and any adjoining FSA, HSA, or existing public or private conservation land delineated on the Overlay Map. Open space contiguous to or within 300 feet of the boundary of a FSA, HSA, or existing public or private conservation land may include: natural preserves, lakes, golf courses provided no fairways or other turf areas are allowed within the first 200 feet, passive recreational areas and parks, required yard and set-back areas, and other natural or man-made open space. Along the west boundary of the FSAs and HSAs that comprise Camp Keais Strand, i.e., the area south of Immokalee Road, this open space buffer shall be 500 feet wide and shall preclude golf course fairways and other turf areas within the first 300 feet.

Policy 4.14
The SRA must have either direct access to a County collector or arterial road or indirect access via a road provided by the developer that has adequate capacity to accommodate the proposed development in accordance with accepted transportation planning standards. At the time of SRA approval, an SRA proposed to adjoin land designated as an SRA or lands designated as Open Lands shall provide for the opportunity to provide direct vehicular and pedestrian connections from said areas to the County's arterial/collector roadway network as shown on the MPO's LRTP Needs Plan so as to reduce travel time and travel expenses, improve interconnectivity, increase internal capture, and keep the use of county arterial roads to a minimum when traveling between developments in the RLSA.

Public and private roads within an SRA shall be maintained by the SRA it serves. Signalized intersections within or adjacent to an SRA that serves the SRA shall be maintained by the SRA it serves. No SRA shall be approved unless the capacity of County collector or arterial road(s) serving the SRA is demonstrated to be adequate in accordance with the Collier County Concurrency Management System in effect at the time of SRA designation. A transportation impact assessment meeting the requirements of Section 2.7.3 of the LDC, or its successor regulation shall be prepared for each proposed SRA to provide the necessary data and analysis. To the extent required to mitigate an SRA's traffic impacts, actions may be taken to include, but shall not be limited to, provisions for the construction and/or permitting of wildlife crossings, environmental mitigation credits, right of way dedication(s), water management and/or fill material which may be needed to expand the existing or proposed roadway network. Any such actions to offset traffic impacts shall be memorialized in a developer contribution agreement. These actions shall be considered within the area of significant influence of the project traffic on existing or proposed roadways.

Policy 4.15.1
SRAs are intended to be mixed use and shall be allowed the full range of uses permitted by the Urban Designation of the FLUE, as modified by Policies 4.7, 4.7.1, 4.7.2, and 4.7.3~~, 4.7.4~~ and Attachment C. An appropriate mix of retail, office, recreational, civic, governmental, and institutional uses will be available to serve the daily needs and community wide needs of residents of the RLSA. Depending on the size, scale, and character of a SRA, such uses may be provided either within the specific SRA, within other SRAs in the RLSA or within the Immokalee Urban Area provided the capacity of those adjoining area's facilities as described in Attachment C to be utilized by the newly created SRA can demonstrate sufficient capacity exists for their desired uses per the standards of Attachment C. By example, each Village or Town shall provide for neighborhood retail/office uses to serve its population as well as appropriate civic and institutional uses, however, the combined population of several Villages ~~and~~

~~Hamlets~~ may be required to support community scaled retail or office uses in a nearby Town. Standards for the minimum amount of non-residential uses in each category are set forth in Attachment C and shall be also included in the Stewardship LDC District.

Policy 4.15.2
The Board of County Commissioners (BCC) may, as a condition of approval and adoption of an SRA development, require that suitable areas for parks, schools, and other public facilities be set aside, improved, and/or dedicated for public use. When the BCC requires such a set aside for one or more public facilities, the set aside shall be subject to the same provisions of the LDC as are applicable to public facility dedications required as a condition for PUD rezoning.

Policy 4.15.3
Applicants for SRA designation shall coordinate with Collier County School Board staff to allow planning to occur to accommodate any impacts to the public schools as a result of the SRA. As a part of the SRA application, the following information shall be provided:

1. Number of residential units by type;
2. An estimate of the number of school-aged children for each type of school impacted (elementary, middle, high school); and
3. The potential for locating a public educational facility or facilities within the SRA, and the size of any sites that may be dedicated, or otherwise made available for a public educational facility.

Policy 4.16
An SRA shall have adequate infrastructure available to serve the proposed development, or such infrastructure must be provided concurrently with the demand. The level of infrastructure provided will depend on the form of SRA development, accepted civil engineering practices, and LDC requirements. The capacity of <u>essential services and</u> infrastructure necessary to serve the SRA at build-out must be demonstrated during the SRA designation process. Infrastructure to be analyzed includes<u>, but not limited to,</u> transportation, potable water, wastewater, irrigation water, stormwater management, and solid waste. Transportation infrastructure is discussed in Policy 4.14. Centralized or decentralized community water and wastewater utilities are required in Towns <u>and</u>~~,~~ Villages~~, and those CRDs exceeding one hundred (100) acres in size,~~ and may be required in CRDs ~~that are one hundred (100) acres or less in size,~~ depending upon the permitted uses approved within the CRD. Centralized or decentralized community water and wastewater utilities shall be constructed, owned, operated and maintained by a private utility service, the developer, a Community Development District, the Immokalee Water Sewer Service District, Collier County, or other governmental entity. Innovative alternative water and wastewater treatment systems such as decentralized community treatment systems shall not be prohibited by this policy provided that they meet all applicable regulatory criteria. Individual potable water supply wells and septic systems, limited to a maximum of 100 acres of any Town, Village or CRD of 100 acres are permitted on an interim basis until services from a centralized/decentralized community system are available. Individual potable water supply wells and septic systems ~~are permitted in Hamlets and~~ may be permitted in CRDs of 100 acres or less in size.

Policy 4.17

The BCC will review and approve SRA designation applications in accordance with the provisions of Policy 1.~~1.~~2 of the Capital Improvement Element of the GMP and public facilities pursuant to Policy 1.1 of the Capital Improvement Element in addition to the following: jails, law enforcement, emergency medical services, fire service, government buildings and libraries. ~~for Category A public facilities.~~ Final local development orders will be approved within a SRA designated by the BCC in accordance with the Concurrency Management System of the GMP and LDC in effect at the time of final local development order approval.

Policy 4.18
The SRA will be planned and designed to be fiscally neutral or positive to Collier County at the horizon year based on a cost/benefit fiscal impact analysis model acceptable to or as may be adopted by the County. The BCC may grant exceptions to this policy to accommodate affordable-workforce housing, as it deems appropriate. Techniques that may promote fiscal neutrality such as Community Development Districts, and other special districts, shall be encouraged. At a minimum, the analysis shall consider the following public facilities and services: transportation, potable water, wastewater, irrigation water, stormwater management, solid waste, parks, law enforcement, and schools. Development phasing, developer contributions and mitigation, and other public/private partnerships shall address any potential adverse impacts to adopted levels of service standards.

In the event that an SRA development, ~~including any related impacts to Collier County outside of those directly generated by the SRA,~~ generates surplus revenues to Collier County, ~~and~~ Collier County may choose to allocate a portion of such surplus revenues to ensure that sufficient resources are available to allow Collier County to respond expeditiously to economic opportunities and to compete effectively for high-value research, development and commercialization, innovation, and alternative and renewable energy business projects.

Policy 4.19
Eight Credits shall be required for each acre of land included in an SRA, where such Credits were created from a Stewardship Sending Area ~~deemed vested under the eight Credit ratio~~ submitted for review or approved prior to (the adoption date of this Ordinance). Ten Credits per acre shall be required for each acre of land included in an SRA, where such Credits were created from any other Stewardship Sending Area. ~~except for open space in excess of the required thirty-five percent as described in Policy 4.10 or for~~ Land that is designated for a public benefit use described in Policy ~~4.19~~ 4.20 do not require use of Credits. In order to promote compact, mixed use development and provide the necessary support facilities and services to residents of rural areas, the SRA designation entitles a full range of uses, accessory uses and associated uses that provide a mix of services to and are supportive to the residential population of a SRA, as provided for in Policies 4.7, ~~4.15~~ 4.15.1 and Attachment C. Such uses shall be identified, located and quantified in the SRA master plan.

Policy 4.20
The acreage of ~~open space exceeding thirty five percent and~~ public benefit use shall ~~not~~ count toward the maximum acreage limits of an SRA, ~~described in Policy 4.7~~ but shall not count toward the consumption of Stewardship Credits. For the purpose of this policy, public benefit uses include: affordable housing as defined in the LDC, public schools (preK-12) and public or private post secondary institutions, including ancillary uses; community parks exceeding the minimum acreage requirements of Attachment C, municipal golf courses; regional parks; and governmental facilities ~~excluding essential services~~ as defined in the LDC. The location of public schools shall be coordinated with the Collier County School Board,

based on the interlocal agreement 163.3177 F.S. and in a manner consistent with 235.193 F.S. Schools and related ancillary uses shall be encouraged to locate in or proximate to Towns~~,~~ and Villages~~, and Hamlets~~ subject to applicable zoning and permitting requirements.

Policy 4.21
Lands within the ACSC that meet all SRA criteria shall also be restricted such that credits used to entitle a SRA in the ACSC must be generated exclusively from SSAs within the ACSC. Further, the only form of SRA allowed in the ACSC east of the Okaloacoochee Slough shall be ~~Hamlets and~~ CRDs of 100 acres or less and the only form of SRA allowed in the ACSC west of the Okaloacoochee Slough shall be CRDs and Villages ~~and CRDs~~ of not more than 300 acres ~~and Hamlets~~. Provided~~,~~ not more than 1,000 aces of SRA development in the form of Villages or CRDs ~~however, that CRDs or not more than 500 acres each~~, exclusive of any lakes created prior to ~~the effective date of this amendment~~ June 30, 2002 as a result of mining operations, shall be allowed in areas that have a frontage on State Road 29 and that~~, as of the effective date of these amendments,~~ had been predominantly cleared as a result of Ag Group I or Earth Mining or Processing Uses. This policy is intended to assure that the RLSA Overlay is not used to increase the development potential within the ACSC but instead is used to promote a more compact form of development as an alternative to the Baseline Standards already allowed within the ACSC. No policy of the RLSA Overlay shall take precedence over the Big Cypress ACSC regulations and all regulations therein shall apply.

Policy 4.22
When historic or cultural resources are identified within the RLSA through the SRA designation process, the applicant in conjunction with the Florida Division of ~~State and~~ Historic Resources will assess the historic or cultural significance and explore the educational and public awareness opportunities regarding significant resources.

Policy 4.23
Any development on lands participating in the RLS Program shall be compatible with surrounding land uses. Within one year of the effective date of this Policy LDC regulations shall be implemented for outdoor lighting to protect the nighttime environment, conserve energy, and enhance safety and security.

Group 5 - Policies that protect water quality and quantity and the maintaining of the natural water regime and protect listed animal and plant species and their habitats on land that is not voluntarily included in the Rural Lands Stewardship Area program.

Policy 5.1
To protect water quality and quantity and maintenance of the natural water regime in areas mapped as FSAs and designated Restoration Areas as shown on the Overlay Map, prior to the time that they are designated as SSAs under the Stewardship Credit Program, Residential Uses, General Conditional Uses, Earth Mining and Processing Uses, and Recreational Uses (layers 1-4) as listed in the Matrix shall be eliminated. ~~in FSAs.~~ Conditional use essential services and governmental essential services, except those necessary to serve permitted uses or for public safety, shall ~~only~~ not be allowed in FSAs. Infrastructure necessary to serve permitted uses may be exempt from this restriction, provided that designs seek to minimize the extent of impacts to any such areas. ~~with a Natural Resource Stewardship Index value of 1.2 or less.~~ Where practicable, directional-drilling techniques and/or previously cleared or disturbed areas shall be utilized for oil or gas extraction in FSAs in order to minimize impacts to native habitats. Asphaltic and concrete batch making plants shall be prohibited in areas mapped as HSAs. The

opportunity to voluntarily participate in the Stewardship Credit Program, as well as the right to sell conservation easements or a free or lesser interest in the land, shall constitute compensation for the loss of these rights.

Policy 5.2
To protect water quality and quantity and maintenance of the natural water regime and to protect listed animal and plant species and their habitats in areas mapped as FSAs, HSAs, and WRAs on the Overlay Map that are within the ACSC, all ACSC regulatory standards shall apply, including those that strictly limit non-agricultural clearing.

Policy 5.3
To protect water quality and quantity and maintenance of the natural water regime and to protect listed animal and plant species and their habitats in areas mapped as FSAs, HSAs, and WRAs on the Overlay Map that are not within the ACSC, if a property owner proposes to utilize such land for a non-agricultural purpose under the Baseline Standards referenced in Policy 1.5 and does not elect to use the Overlay, these Group 5 policies ~~following regulations are applicable,~~ shall be incorporated into the LDC, and shall supersede any comparable existing County regulations that would otherwise apply. These regulations shall only apply to non-agricultural use of land prior to its inclusion in the Overlay system.

Policy 5.4
Collier County will coordinate with appropriate State and Federal agencies concerning the provision of wildlife crossings at locations determined to be appropriate. A map of these potential crossing locations will be initiated by [12 months of the adoption of this Ordinance], updated periodically, and shall be incorporated into community, cultural and historical, and transportation planning for the RLSA, including all SRAs described in Group 4 Policies.

Policy 5.5
For those lands that are not voluntarily included in the Rural Lands Stewardship program non-agricultural development, excluding individual single family residences, shall be directed away from the listed species and species of special local concern (SSLC), as defined by Florida Fish and Wildlife Commission, and their habitats by complying with the following guidelines and standards. ~~A SSLC is defined as species that have been delisted but for which there remain federal, state and/or local protections and/or management plans specifying guidelines for their protection.~~

1. A wildlife survey shall be required for all parcels when listed species or SSLC are known to inhabit biological communities similar to those existing on site or where listed species or SSLC are utilizing ~~directly observed on~~ the site. The survey shall be conducted in accordance with the requirements of the Florida Fish and Wildlife Conservation Commission (FFWCC) and U.S. Fish and Wildlife Service (USFWS) guidelines. The County shall notify the FFWCC and USFWS of the existence of any listed species or SSLC that may be discovered.
2. Wildlife habitat management plans for listed species or SSLC shall be submitted for County approval. A plan shall be required for all projects where the wildlife survey indicated listed species or SSLC are utilizing the site, or the site is capable of supporting wildlife and can be anticipated to be occupied by listed species or SSLC. These plans shall describe how the project directs incompatible land uses away from listed species or SSLC and their habitats.

a. Management plans shall incorporate proper techniques to protect listed species or SSLC and their habitats from the negative impacts of proposed development. The most current and completed data and local, state, and federal guidelines and regulations shall be utilized to prepare the required management plans. ~~Open space and vegetation preservation requirements shall be used to establish buffer areas between wildlife habitat areas and areas dominated by human activities.~~ Provisions such as fencing, walls, or other obstructions shall be provided to minimize development impacts to the wildlife and to facilitate and encourage wildlife to use wildlife corridors. Appropriate roadway crossings, underpasses and signage shall be used where roads must cross wildlife corridors. Mitigation for impacting listed species or SSLC habitat shall be considered in the management plans, as appropriate.

~~i. The following references shall be used, as appropriate, to prepare the required management plans:~~

~~1 South Florida Multi-Species Recovery Plan, USFWS, 1999.~~

~~2 Habitat Management Guidelines for the Bald Eagle in the Southeast Region, USFWS, 1987.~~

~~3. Ecology and Habitat Protection Needs of Gopher Tortoise (Gopherus polyphemus) Populations found on Lands Slated for Large Scale Development in Florida, Technical Report No. 4, Florida Game and Fresh Water Fish Commission, 1987.~~

~~4 Ecology and Development Related Habitat Requirements of the Florida Scrub Jay (Apelocoma coerulescens), Technical Report No. 8, Florida Game and Fresh Water Fish Commission, 1991.~~

~~5. Ecology and Habitat Protection Needs of the Southeastern American Kestrel (Falco Sparverius Paulus) on Large-scale Development Sites in Florida, Nongame Technical Report No. 13, Florida Game and Fresh Water Fish Commission, 1993.~~

i. ~~ii.~~ The County shall consider any other techniques recommended by the USFWS and FFWCC, subject to the provision of paragraph 3 of this policy.

ii. ~~iii.~~ When listed species or SSLC are utilizing a ~~directly observed on-~~site or indicated by evidence, such as denning, foraging, or other indications, a minimum of 40% of native vegetation on site shall be retained, with the exception of clearing for agricultural purposes. The County shall also consider the recommendation of other agencies, subject to the provisions of paragraph 3 of this policy.

b. Management plans shall include provisions for minimizing human and wildlife interactions. Low intensity land uses (e.g. parks, passive recreation areas, golf courses) and vegetation preservation requirements, including agriculture, shall be used to establish buffer areas between wildlife habitat areas and areas dominated by human activities. Consideration shall be given to the most current Florida Fish and Wildlife Commission guidelines and regulations on techniques to reduce human wildlife conflict. The management plans shall also require the dissemination of information to local residents, businesses and governmental services about the presence of wildlife and practices (such as appropriate waste disposal methods) that enable responsible coexistence with wildlife, while minimizing opportunities for negative interaction, such as appropriate waste disposal practices.

c. The Management Plans shall contain a monitoring program for developments greater than ten acres.

~~b. For parcels containing gopher tortoises (Gopherus polyphemus), priority shall be *given* to protecting the largest most contiguous gopher tortoise habitat with the greatest number of active burrows, and for providing a connection to off site adjacent gopher tortoise preserves.~~

~~c.Habitat preservation for the Florida scrub jay (Aphelocoma coerulescens) shall conform to the guidelines contained in Technical Report No. 8, Florida Game and Fresh Water Fish Commission, 1991. The required management plan shall also provide for a maintenance program and specify an appropriate fire or mechanical protocols to maintain the natural scrub community. The plan shall also outline a public awareness program to educate residents about the on-site preserve and the need to maintain the scrub vegetation. These requirements shall be consistent with the UFWS South Florida Multi-Species Recovery Plan, May 1999, subject to the provisions of paragraph (3) of this policy.~~

~~d.For the bald eagle (Haliaeetus leucocephalus), the required habitat management plans shall establish protective zones around the eagle nest restricting certain activities. The plans shall also address restricting certain types of activities during the nest season. These requirements shall be consistent with the UFWS South Florida Multi-Species Recover Plan, May 1999, subject to the provisions of paragraph (3) of this policy.~~

~~e.For the red-cockaded woodpecker Ipicoides borealis), the required habitat protection plan shall outline measures to avoid adverse impacts to active clusters and to minimize impacts to foraging habitat. Where adverse effects can not be avoided, measures shall be taken to minimize on-site disturbance and compensate or mitigate for impacts that remain. These requirements shall be consistent with the UFWS South Florida Multi-Species Recovery Plan, May 1999, subject to the provision of paragraph 3) of this policy.~~

~~f. In areas where the Florida black bear (Ursus americanus floridanus) may be present, the management plans shall require that garbage be placed in bear-proof containers, at one or more central locations. The management plan shall also identify methods to inform local residents of the concerns related to interaction between black bears and humans. Mitigation for impacting habitat suitable for black bear shall be considered in the management plan.~~

~~g.For projects located in Priority I or Priority II Panther Habitat areas, the management plan shall discourage the destruction of undisturbed, native habitats that are preferred by the Florida panther (Felis concolor coryi) by directing intensive land uses to currently disturbed areas. Preferred habitats include pine flatwoods and hardwood hammocks. In turn, these areas shall be buffered from the most intense land uses of the project by using low intensity land uses (e.g., parks, passive recreational areas, golf courses). Gold courses within the Rural Lands Area shall be designed and managed using standards found within this Overlay. The management plans shall identify appropriate lighting controls for these permitted uses and shall also address the opportunity to utilize prescribed burning to maintain fire-adapted preserved vegetation~~

~~communities and provide browse for white-tailed deer. These requirements shall be consistent with the UFWS South Florida Multi-Species Recover Plan, May 1999, subject to the provisions of paragraph (3) of this policy. The Multi-Species Recovery Plan (1999) shall constitute minimum wildlife protection standards for the RLSAO.~~

~~h. The Management Plans shall contain a monitoring program for developments greater than 10 acres.~~

3. The County shall, consistent with applicable policies of this Overlay, consider and utilize recommendations and letters of technical assistance from the Florida Fish and Wildlife Conservation Commission and recommendations from the US Fish and Wildlife Service in issuing development orders on property ~~containing~~ utilized by listed species or SSLC. It is recognized that these agency recommendations, on a case by case basis, may ~~change~~ strengthen the requirements contained within these wildlife protection policies and any such change shall be deemed consistent with the Growth Management Plan. However, no reduction of the wildlife protection policies of Policy 5.5 will be considered as these shall constitute minimum standards for wildlife protection.

Policy 5.6

For those lands that are not voluntarily included in the Rural Lands Stewardship program, Collier County shall direct non-agricultural land uses away from high functioning wetlands by limiting direct impacts within wetlands. A direct impact is hereby defined as the dredging or filling of a wetland or adversely changing the hydroperiod of a wetland. This policy shall be implemented as follows:

1. There are two (2) major wetlands systems within the RLSA, Camp Keais Strand and the Okaloacoochee Slough. These two systems have been mapped and are designated as FSA's. Policy 5.1 prohibits certain uses within the FSA's, thus preserving and protecting the wetlands functions within those wetland systems.
2. The other significant wetlands within the RLSA are WRA's as described in Policy 3.3.These areas are protected by existing SFWMD ~~wetlands permits~~ Environmental Resource Permit for each area.
3. FSAs, HSAs and WRAs, as provided in Policy 5.3, and the ACSC have stringent site clearing and alteration limitations, nonpermeable surface limitations, and requirements addressing surface water flows which protect wetland functions within the wetlands in those areas. Other wetlands within the RLSA are isolated or seasonal wetlands. These wetlands will be protected based upon the wetland functionality assessment described below, and the final permitting requirements of the South Florida Water Management District.
    a. The County shall apply the vegetation retention, open space and site preservation requirements specified within this Overlay to preserve an appropriate amount of native vegetation on site. Wetlands shall be preserved as part of this vegetation requirement according to the following criteria:
        i. The acreage requirements specified within this Overlay shall be met by preserving wetlands with the highest wetland functionality scores. Wetland functionality assessment scores shall be those described in paragraph b of this policy. The vegetative preservation requirements imposed by Policies 5.3 and 5.5 shall first be met through preservation of wetlands having a functionality assessment score of 0.65 or a Uniform Wetland Mitigation Assessment Method

score of 0.7, or greater. Within one year from the effective date of this Amendment, the County shall develop specific criteria in the LDC to be used to determine those instances in which wetlands with a WRAP functionality assessment score of 0.65 or a Uniform Wetland Mitigation Assessment Method score of 0.7, or greater must be preserved in excess of the preservation required by Policy 5.3.

ii. Wetlands and contiguous upland buffers that are utilized by listed species or SSLC, or serving as corridors for the movement of listed species or SSLC, shall be preserved on site. Wetland flowway functions through the project shall be maintained.

iii. Proposed development shall demonstrate that ground water table drawdowns or diversions will not adversely change the hydoperiod of preserved wetlands on or offsite. Detention and control elevations shall be set to protect surrounding wetlands and be consistent with surrounding land and project control elevations and water tables. In order to meet these requirements, projects shall be designed in accordance with Sections 4.2.2.4., 6.11 and 6.12, of SFWMD's Basis of Review, January 2001, as amended. Upland vegetative communities may be utilized to meet the vegetative, open space and site preservation requirements of this Overlay when the wetland functional assessment score is less than 0.65.

b. In order to assess the values and functions of wetlands at the time of project review, applicants shall rate functionality of wetlands using the South Florida Water Management District's Wetland Rapid Assessment Procedure (WRAP), as described in Technical Publication Reg-001, dated ~~September 1997, and updated~~ August 1999, as amended, andor the Uniform Wetland Mitigation Assessment Method, identified as F.A.C. Chapter 62-345. The applicant shall submit to County staff agency-accepted WRAP scores, or Uniform Wetlands Mitigation Assessment scores. County staff shall review this functionality assessment as part of the County's ~~EIS~~ Environmental Data provisions and shall use the results to direct incompatible land uses away from the highest functioning wetlands according to the requirements found in paragraph 3 above.

c. All direct impacts shall be mitigated for pursuant to the requirements of paragraph (f) of this policy.

d. Single family residences shall follow the requirements contained within Policy 6.2.7 of the Conservation and Coastal Management Element.

e. The County shall separate preserved wetlands from other land uses with appropriate buffering requirements. The County shall require a minimum 50-foot vegetated upland buffer abutting a natural water body, and for other wetlands a minimum 25-foot vegetated upland buffer abutting the wetland. A structural buffer may be used in conjunction with a vegetative buffer that would reduce the vegetative buffer width by 50%. A structural buffer shall be required abutting wetlands where direct impacts are allow~~s~~ed. Wetland buffers shall conform to the following standards:

i. The buffer shall be measured landward from the approved jurisdictional line.

ii. The buffer zone shall consist of preserved native vegetation. Where native vegetation does not exist, native vegetation compatible with the existing soils and expected hydrologic conditions shall be planted.

iii. The buffer shall be maintained free of Category I invasive exotic plants, as defined by the Florida Exotic Pest Plant Council.

iv. The following land uses are considered to be compatible with wetland functions and are allowed within the buffer:

(1) Passive recreational areas, boardwalks and recreational shelters;
(2) Pervious nature trails;
(3) Water management structures;
(4) Mitigation areas;
(5) Any other conservation and related open space activity or use which is comparable in nature with the foregoing uses.

v. A structural buffer may consist of a stem-wall, berm, or vegetative hedge with suitable fencing.

f. Mitigation shall be required for direct impacts to wetland in order to result in no net loss of wetland functions.

Mitigation Requirements:

i. "No net loss of wetland functions" shall mean that the wetland functional score of the proposed mitigation equals or exceeds the wetland functional score of the impacted wetlands. Priority shall be given to mitigation within FSA's and HSA's.

ii. Loss of storage or conveyance volume resulting from direct impacts to wetlands shall be compensated for by providing an equal amount of storage or conveyance capacity on site and within or abutting the impacted wetland.

iii. Protection shall be provided for preserved or created wetland or upland vegetative communities offered as mitigation by placing a conservation easement over the land in perpetuity, providing for initial exotic plant removal (Class I invasive exotic plants defined by the Florida Exotic Plan Council) and continuing exotic plant maintenance, or by appropriate ownership transfer to a state or federal agency along with sufficient funding for perpetual management activities.

iv. Exotics removal or maintenance may be considered acceptable mitigation ~~for the loss of wetlands or listed species habitat if those lands if those lands are placed under a perpetual conservation easement with perpetual maintenance requirements.~~

~~iv~~ v. Prior to issuance of any final development order that authorizes site alteration, the applicant shall demonstrate compliance with paragraphs (f) i, ii, and iii of this policy and SFWMD standards. If agency permits have not provided mitigation consistent with this policy, Collier County will require mitigation exceeding that of the jurisdictional agencies.

g. Wetland preservation, buffer areas, and mitigation areas shall be identified or platted as separate tracts. In the case of a Planned Unit Development (PUD), these areas shall also be depicted on the PUD Master Plan. These areas shall be maintained free from trash and debris and from Category I invasive exotic plants, as defined by the Florida Exotic Pest Plant Council. Land uses allowed in these areas shall be limited to those listed above (3.e.iv.) and shall not include any other activities that are detrimental to drainage, flood, control, water conservation, erosion control or fish and wildlife habitat conservation and preservation.

4. All landowners shall be encouraged to consider participating in any programs that provide incentives, funding or other assistance in facilitating wetland and habitat restoration on private lands including, but not limited to, federal farm bill agricultural conservation

programs, private or public grants, tax incentives, easements, and fee or less than fee sale to conservation programs.

Policy 5.7

Any development ~~on lands~~ not participating in the RLS Program shall be compatible with surrounding land uses. Within one year of the effective date of this Policy, LDC regulations shall be implemented for outdoor lighting ~~using standards modeled from the Dark Sky (www.darksky.org) program~~ to protect the nighttime environment, conserve energy, and enhance safety and security.

Attachment A

Collier County Rural Lands Stewardship Overlay

Stewardship Credit Worksheet

Stewardship Credit Matrix

Land Use Layers	Base Credit	Stewardship Overlay Designation	Proximity	Listed Species Habitat	Soils & Surface Water	Restoration Potential	Land Use Land Cover (FLUCCS)	Total Index Value	Credits (Base Credit X Index Factor)	Layer Eliminated (X)	Stewardship Credits for Land Use Layers Removed
								0.0			
Residential Land Uses	0.2							0.0	0.00		0.00
General Conditional Uses	0.2							0.0	0.00		0.00
Earth Mining and Processing Uses	0.1							0.0	0.00		0.00
Recreational Uses	0.1							0.0	0.00		0.00
Agriculture - Group 1	0.2							0.0	0.00		0.00
Agriculture - Support Uses	0.1							0.0	0.00		0.00
Agriculture - Group 2	0.1							0.0	0.00		0.00
Total of all Layers	1.0						Maximum Total Credits		0.00		0.00

Index Factors

The "base credit" does not change from parcel to parcel once calibrated

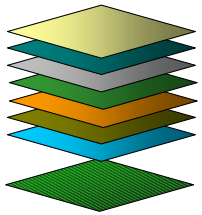
Step #2

The potential maximum number of Stewardship Sending Area Credits per acre granted for each Land Use Rights Layer to be "eliminated" from the owner's land

The cumulative number of Stewardship Sending Area Credits per acre granted for the groups of Land Use Rights Layers "eliminated" from the owner's land

Step #1

Land Use Layers



Residential Land Uses
General Conditional Uses
Earth Mining and Processing Uses
Recreational Uses
Agriculture - Group 1
Agriculture - Support Uses
Agriculture - Group 2

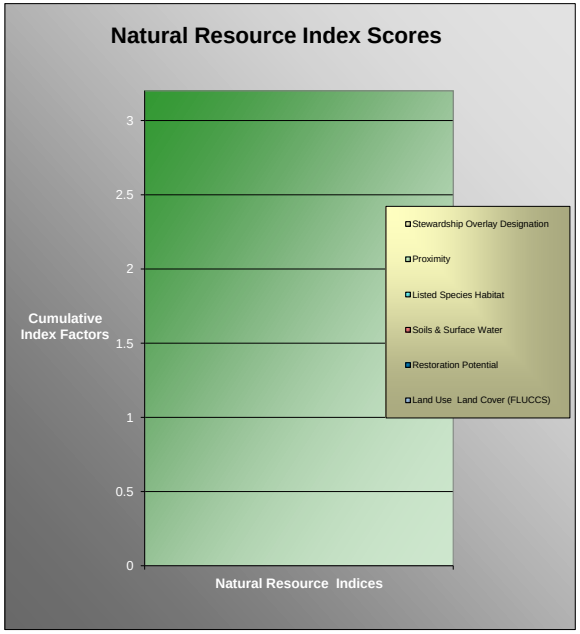
Conservation, Restoration, Natural Resources

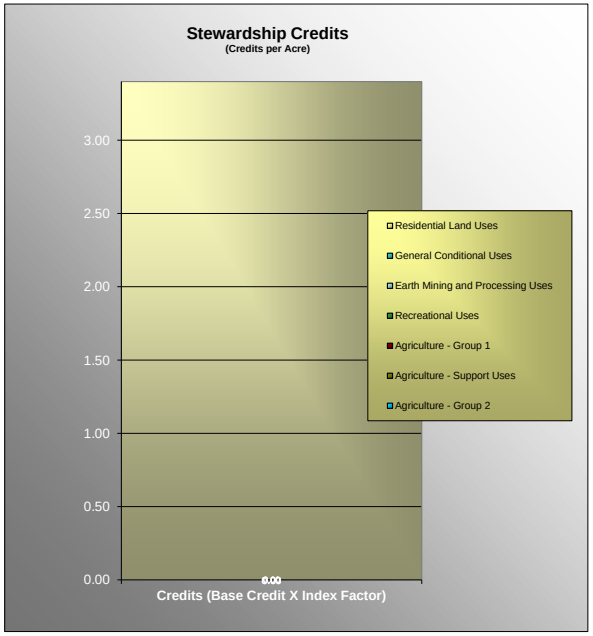
0.00 Credits X Acres = 0 Stewardship Credits

Step #3

Stewardship Natural Resource Index Factors

	Enter X for the Appropriate Factor (Only one for each Index)	
Stewardship Overlay Designation		
Flowway Stewardship Area (FSA)	0.7	
Habitat Stewardship Area (HSA)	0.6	
Water Retention Area (WRA)	0.6	
Area of Critical State Concern (ACSC)	0.4	
None of the above	0.0	
Proximity Indices		
Enclosed by FSA, HSA, or WRA	0.4	
Within 300 feet of FSA or HSA	0.3	
Within 300 feet of public or private preserve land	0.2	
None of the above	0.0	
Listed Species Habitat Indices		
Panther occupied habitat (preferred and tolerated) plus other listed species	0.8	
Panther occupied habitat (preferred and tolerated)	0.5	
Other documented listed species habitat	0.4	
None of the above	0.0	
Soils/Surface Water Indices		
Open Water and Muck Depression soils	0.4	
Sand Depression soils	0.3	
Flats (Transitional) soils	0.2	
Non-hydric soils	0.0	
Restoration Potential Indices		
Large mammal corridor restoration areas	0.5	
Connector wetlands and flowway restoration areas	0.5	
Wading bird restoration areas	0.4	
Other listed species restoration areas	0.3	
None of the above	0.0	
Land Use - Land Cover Indices		
FLUCCS Code Group 1	0.4	
FLUCCS Code Group 2	0.3	
FLUCCS Code Group 3	0.2	
FLUCCS Code Group 4	0.0	





WORKSHEET INSTRUCTIONS

1. Select a parcel with a single homogeneous land cover-type to be analyzed and select one appropriate factor from each category in the list of Natural Resource Index Factors (i.e., Stewardship Overlay Designation, Proximity Indices, etc.).
2. Select the individual Land Use Layers (**X**) to be eliminated from the parcel to yield the Stewardship Credits to be granted for each layer removed.
3. Enter the number of acres being analyzed. The worksheet multiply the total Credits per acre by the number of acres in the parcel to yield the total Stewardship Credits.

Attachment B
Collier County Rural Lands Stewardship Overlay
Land Use Matrix

Residential Land Uses	General Conditional Uses	Earth Mining and Processing Uses	Recreational Uses	Agriculture Group 1	Agricultural Support Uses	Agricultural Group 2	Conservation, Restoration and Natural Resources
Single-family dwelling (P)	Family care facilities (P)	Excavation, extraction or earthmining and related processing and production (CU)	Golf courses and/or golf driving ranges (CU)	Crop raising, horticulture; fruit and nut production; groves; nurseries; improved pasture (P)	Farm labor housing (A)	Unimproved pasture and grazing; forestry (P)	Wildlife management, plant and wildlife conservancies, refuges and sanctuaries (P)
Mobile homes (P in MH Overlay; A as temporary use)	Collection and transfer sites for resource recovery (CU)	Asphaltic and concrete batch making plants (CU)	Sports instructional schools and camps (CU)	Animal breeding (other than livestock), raising, training, stabling or kenneling (CU)	Retail sale of fresh, unprocessed agricultural products, grown primarily on the property (A)	Ranching; livestock raising (P) (CU)	Water management, groundwater recharge (P)
Private boathouses and docks on lake, canal or waterway lots (A)	Veterinary clinic (CU)		Sporting and recreational camps (CU)	Dairying; poultry and egg production; milk production (P) (CU)	Retail plant nurseries (CU)	Hunting cabins (CU)	Restoration, mitigation (P)
Recreational facilities integral to residential development, e.g. golf course, clubhouse, community center building and tennis facilities, parks, playgrounds and playfields (A)	Child care centers and adult day care centers (CU)			Aquaculture for native species (P) and non-native species (CU)	Packinghouse or similar agricultural processing of farm products produced on the property (A)	Cultural, educational, or recreational facilities and their related modes of transporting participants, viewers or patrons; tour operations, such as, but not limited to airboats, swamp buggies, horses and similar modes of transportation (CU)	Water supply, wellfields (P); oil and gas exploration (P)
Guesthouses (A)	Zoo, Aquarium, aviary, botanical garden, or other similar uses (CU)			The commercial production, raising or breeding of exotic animals (CU)	Sawmills (CU)	Excavation and related processing incidental to Ag (A)	Boardwalks, nature trails (P)
	Churches and other places of worship (CU)			Wholesale reptile breeding and raising – non-venomous (P) and venomous (CU)			Natural resources not otherwise listed (P)
	Communication towers (P) (CU)			Beekeeping (P)			Essential services (P and CU)
	Social and fraternal organizations (CU)						Oil and gas field development and production (CU)
	Private landing strips for general aviation (CU)						
	Cemeteries (CU)						
	Schools (CU)						
	Group care facilities, ALF (CU)						

Uses as listed in the Collier County Land Development Code – A, Rural Agricultural District; specific restrictions, conditions or limitations are set forth in the Land Development Code. (P) Principal Use, (A) Accessory Use, (CU) Conditional Use.

Collier County RLSA Overlay: Attachment B Proposed

Land Use Matrix

Layer 1 Residential Land Uses	Layer 2 General Conditional Uses	Layer 3 Earth Mining and Processing Uses	Layer 4 Recreational Uses	Layer 5 Agriculture Group 1	Layer 6 Agriculture - Support Uses	Layer 7 Agriculture Group 2	Layer 8 Conservation, Restoration and Natural Resources
Single-family dwelling, incl. mobile home (P)	Family care facilities (P)	Excavation, extraction or earthmining and related processing and production (CU)	Golf courses and/or golf driving ranges (CU)	Crop raising; horticulture; fruit and nut production; groves; nurseries, improved pasture	Farm labor housing (A)	Unimproved pasture and grazing, forestry	Wildlife management, plant and wildlife conservencies, refuges and sanctuaries
Mobile homes (P in MH Overlay; A as temporary use)	Collection and transfer sites for resource recovery (CU)	Asphaltic and concrete batch making plants (CU)	Sports instructional schools and camps (CU)	Animal breeding (other than livestock), raising, training, stabling or kenneling	Retail sale of fresh, unprocessed agricultural products; grown primarily on the property (A)	Ranching; livestock raising	Water management, groundwater recharge
Private boathouses and docks on lake, canal or waterway lots (A)	Veterinary clinic (CU)		Sporting and recreational camps (CU)	Dairying; beekeeping; poultry and egg production; milk production	Retail plant nurseries (CU)	Hunting cabins (CU)	Restoration, mitigation
Recreational facilities integral to residential development, e.g., golf course, clubhouse, community center building and tennis facilities, parks, playgrounds and playfields (A)	Child care centers and adult day care centers (CU)			~~Aquaculture for native species (P) and non-native species (CU)~~	Packinghouse or similar agricultural processing of farm products produced on the property (A)	Cultural, educational, or recreational facilities and their related modes of transporting participants, viewers or patrons;tour operations, such as, but not limited to airboats, swamp buggies, horses and similar modes of transportation (CU)	Water supply, wellfields; oil and gas exploration
Guesthouses (A)	Zoo, aquarium, aviary, botanical garden, or other similar uses (CU)			The commercial production, raising or breeding of exotic animals (CU)	Sawmills (CU)	Excavation and related processing incidental to Ag (A)	Boardwalks, nature trails
	Churches and other places of worship (CU)			Wholesale reptile breeding and raising - non-venomous (P) and venomous (CU)			Natural resources not otherwise listed
	Communications towers (P) (CU)						Essential services (P and CU)
	Social and fraternal organizations (CU)						Oil and gas field development and
	Private landing strips for general aviation (CU)						
	Cemeteries (CU)						
	Schools (CU)						
	Group care facilities, ALF (CU)						

Uses as listed in Collier County Land Development Code - Rural Agricultural District
(P) Prinicpal Use, (A) Accessory Use, (CU) Conditional Use

Attachment C

Collier County RLSA Overlay

Stewardship Receiving Area Characteristics

Typical Characteristics	Town*	Village	Hamlet	Compact Rural Development	
Size (Gross Acres)	1,000-4,000 acres	100-1,000 acres**	40-100 acres**	**100 Acres or less****	**Greater Than 100 Acres****
Residential Units (DUs) per gross acre base density	1-4 DUs per gross acre***	1-4 DUs per gross acre***	1/2 -2 DU per gross acre***	1/2 -2 DU per gross acre***	1-4 DUs per gross acre***
Residential Housing Styles	Full range of single family and multi-family housing types, styles, lot sizes	Diversity of single family and multi-family housing types, styles, lot sizes	Single Family and limited multi-family	Single Family and limited multi-family ****	Single Family and limited multi-family ****
Maximum Floor Area Ratio or Intensity	Retail & Office - .5 Civic/Governmental/Institution - .6 Manufacturing/Light Industrial - .45 Group Housing - .45 Transient Lodging - 26 upa net	Retail & Office - .5 Civic/Governmental/Institution - .6 Group Housing - .45 Transient Lodging - 26 upa net	Retail & Office - .5 Civic/Governmental/Institution - .6 Group Housing - .45 Transient Lodging - 26 upa net	Retail & Office - .5 Civic/Governmental/Institution - .6 Group Housing - .45 Transient Lodging - 26 upa net	Retail & Office - .5 Civic/Governmental/Institution - .6 Group Housing - .45 Transient Lodging - 26 upa net
Goods and Services	Town Center with Community and Neighborhood Goods and Services in Town and Village Centers: Minimum 65 SF gross building area per DU; Corporate Office, Manufacturing and Light Industrial	Village Center with Neighborhood Goods and Services in Village Centers: Minimum 25 SF gross building area per DU	Convenience Goods and Services: Minimum 10 SF gross building area per DU	Convenience Goods and Services: Minimum 10 SF gross building area per DU	Village Center with Neighborhood Goods and Services in Village Centers: Minimum 25 SF gross building area per DU
Water and Wastewater	Centralized or decentralized community treatment system Interim Well and Septic	Centralized or decentralized community treatment systems Interim Well and Septic	Individual Well and Septic System; Centralized or decentralized community treatment system	Individual Well and Septic System; Centralized or decentralized community treatment system	Centralized or decentralized community treatment systems Interim Well and Septic
Recreation and Open Spaces	Community Parks (200 SF/DU) Parks & Public Green Spaces w/n Neighborhoods Active Recreation/Golf Courses Lakes Open Space Minimum 35% of SRA	Parks & Public Green Spaces w/n Neighborhoods (minimum 1% of gross acres) Active Recreation/Golf Courses Lakes Open Space Minimum 35% of SRA	Public Green Space for Neighborhoods (minimum 1% of gross acres)	Public Green Space for Neighborhoods (minimum 1% of gross acres)	Parks & Public Green Spaces w/n Neighborhoods (minimum 1% of gross acres) Active Recreation/Golf Courses Lakes Open Space Minimum 35% of SRA
Civic, Governmental and Institutional Services	Wide Range of Services - minimum 15 SF/DU Full Range of Schools	Moderate Range of Services - minimum 10 SF/DU; Full Range of Schools	Limited Services Pre-K through Elementary Schools	Limited Services Pre-K through Elementary Schools	Moderate Range of Services - minimum 10 SF/DU Pre-K through Elementary Schools
Transportation	Auto - interconnected system of collector and local roads; required connection to collector or arterial Interconnected sidewalk and pathway system County Transit Access	Auto - interconnected system of collector and local roads; required connection to collector or arterial Interconnected sidewalk and pathway system Equestrian Trails County Transit Access	Auto - interconnected system of local roads Pedestrian Pathways Equestrian Trails	Auto - interconnected system of local roads Pedestrian Pathways Equestrian Trails	Auto - interconnected system of collector and local roads; required connection to collector or arterial Interconnected sidewalk and pathway system Equestrian Trails County Transit Access

* - Towns are prohibited within the ACSC, per policy 4.7.1 of the Goals, Objectives, and Policies.
** - Villages, Hamlets, and Compact Rural Developments within the ACSC are subject to location and size limitations, per policy 4.21, and are subject to Chapter 28-25, FAC.
*** - Density can be increased beyond the base density through the Affordable Housing Density Bonus or through the density blending provision, per policy 4.7.
**** Those CRDs that include single or multi-family residential uses shall include proportaionate support services.
Underlined uses are not required uses.

Attachment C

Collier County RLSA Overlay: Attachment C Proposed

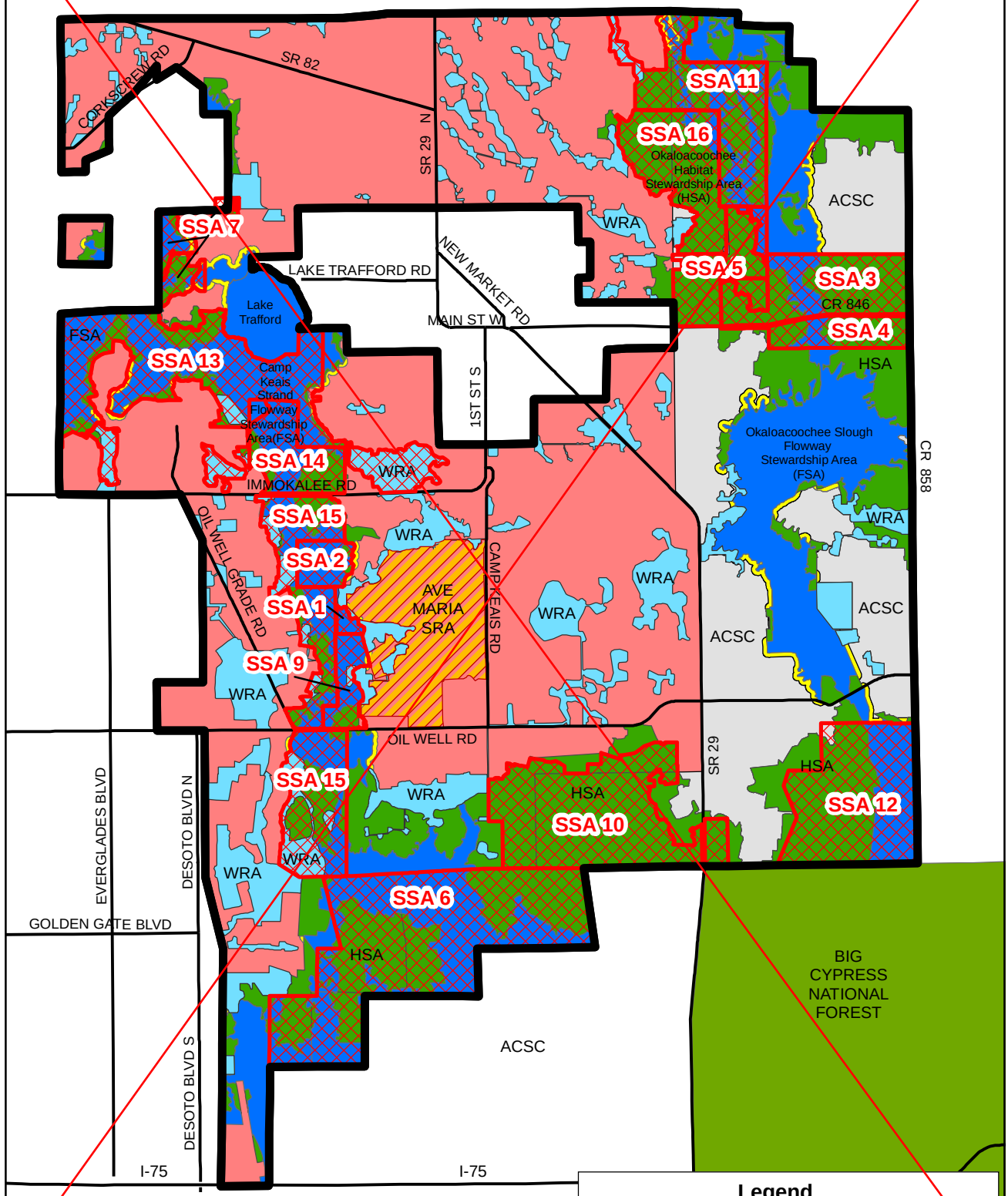
Stewardship Receiving Area Characteristics

Typical Characteristics	Town*	Village	~~Hamlet~~	Compact Rural Development	
Size (Gross Acres)	~~1,000-4,000 acres~~ 1,500 - 5,000 acres	~~100-1,000~~ 300-1,500 acres**	~~40-100 acres**~~	**~~100~~ 300 Acres or less****	**~~Greater Than 100 Acres**~~**
Residential Units (DUs) per gross acre base density	1-4 DUs per gross acre***	1-4 DUs per gross acre***	~~1/2 -2 DU per gross acre***~~	1/2 -2 DU per gross acre***	~~1-4 DUs per gross acre***~~
Residential Housing Styles	Full range of single family and multi-family housing types, styles, lot sizes	Diversity of single family and multi-family housing types, styles, lot sizes	~~Single Family and limited multi-family~~	*Single Family and limited multi-family****	~~Single Family and limited multi-family~~
Maximum Floor Area Ratio or Intensity	Retail & Office - .5 Civic/Governmental/Institution - .6 *Manufacturing/Light Industrial - .45* *Group Housing* - .45 *Transient Lodging* - 26 upa net	Retail & Office - .5 Civic/Governmental/Institution - .6 *Group Housing* - .45 *Transient Lodging - 26 upa net*	~~Retail & Office - .5~~ ~~Civic/Governmental/Institution - .6~~ ~~Group Housing - .45~~ ~~Transient Lodging - 26 upa net~~	Retail & Office - .5 *Civic/Governmental/Institution* - .6 *Group Housing* - .45 *Transient Lodging* - 26 upa net	~~Retail & Office - .5~~ ~~Civic/Governmental/Institution - .6~~ ~~Group Housing - .45~~ ~~Transient Lodging - 26 upa net~~
Goods and Services	Town Center with Community and Neighborhood Goods and Services in Town and Village Centers: Minimum ~~65~~ 170 SF gross building area per DU; *Corporate Office, Manufacturing, Research and Light Industrial*	Village Center with Neighborhood Goods and Services in Village Centers: Minimum ~~25~~ 53 SF gross building area per DU	~~Convenience Goods and Services: Minimum 10 SF gross building area per DU~~	Convenience Goods and Services: Minimum 10 SF gross building area per DU; research, education, toursim/recreation	~~Village Center with Neighborhood Goods and Services in Village Centers: Minimum 25 SF gross building area per DU~~
Water and Wastewater	Centralized or decentralized community treatment system *Interim Well and Septic*	Centralized or decentralized community treatment systems *Interim Well and Septic*	~~Individual Well and Septic System; Centralized or decentralized community treatment system~~	Individual Well and Septic System; *Centralized or decentralized community treatment system*	~~Centralized or decentralized community treatment systems~~ ~~Interim Well and Septic~~
Recreation and Open Spaces	Community Parks (~~200~~ 358 SF/DU) Parks & Public Green Spaces w/n Neighborhoods *Active Recreation/Golf Courses* Lakes Open Space Minimum 35% of SRA	Parks & Public Green Spaces w/n Neighborhoods (minimum 1% of gross acres) *Active Recreation/Golf Courses* Lakes Open Space Minimum 35% of SRA	~~Public Green Space for Neighborhoods (minimum 1% of gross acres)~~	Public Green Space for Neighborhoods (minimum 1% of gross acres)	~~Parks & Public Green Spaces w/n Neighborhoods (minimum 1% of gross acres)~~ ~~Active Recreation/Golf Courses~~ ~~Lakes~~ ~~Open Space Minimum 35% of SRA~~
Civic, Governmental and Institutional Services	Wide Range of Services - minimum 15 SF of gross land area /DU *Full Range of Schools*	Moderate Range of Services - minimum 10 SF/DU; *Full Range of Schools*	~~Limited Services~~ ~~Pre-K through Elementary Schools~~	*Limited Services* *Pre-K through Elementary Schools*	~~Moderate Range of Services - minimum 10 SF/DU~~ ~~Pre-K through Elementary Schools~~
Transportation	Auto - interconnected system of collector and local roads; required connection to collector or arterial Interconnected sidewalk and pathway system County Transit ~~Access~~ Station or Park and Ride Facility	Auto - interconnected system of collector and local roads; required connection to collector or arterial Interconnected sidewalk and pathway system *Equestrian Trails* County Transit ~~Access~~ Station or Park and Ride Facility	~~Auto - interconnected system of local roads~~ ~~Pedestrian Pathways~~ ~~Equestrian Trails~~	Auto - interconnected system of local roads Pedestrian Pathways *Equestrian Trails* County Transit Access	~~Auto - interconnected system of collector and local roads; required connection to collector or arterial~~ ~~Interconnected sidewalk and pathway system~~ ~~Equestrian Trails~~ ~~County Transit Access~~

* - Towns are prohibited within the ACSC, per policy 4.7 of the Goals, Objectives, and Policies.
** - Villages, ~~Hamlets,~~ and Compact Rural Developments located within the ACSC shall be no greater than 10% of the total site size and are subject to Chapter 28-25, FAC.
*** - Density can be increased through the Affordable Housing Density Bonus or through the density blending provisions.
**** - Those CRDs that include single or multi-family residentail uses shall include proportionate support services.
~~Underlined~~ *Italizied* uses are not required uses.

Text underlined is added, text in ~~strikethrough~~ is deleted.

COLLIER COUNTY RURAL & AGRICULTURAL AREA ASSESSMENT
(STEWARDSHIP OVERLAY MAP)



AMENDED - JANUARY 25, 2007 (Ord. No. 2007-18)
AMENDED - OCTOBER 14, 2008 (Ord. No. 2008-59)
AMENDED - SEPTEMBER 13, 2011 (Ord. No. 2011-26)
AMENDED - JUNE 13, 2017 (Ord. No. 2017-22)
08/03/2020

0 1 2 4 Miles

GIS Mapping: Bonnie Dilkes
Growth Management Department
File: Collier County Rural and Agricultural Area Assessment Map.mxd

Legend

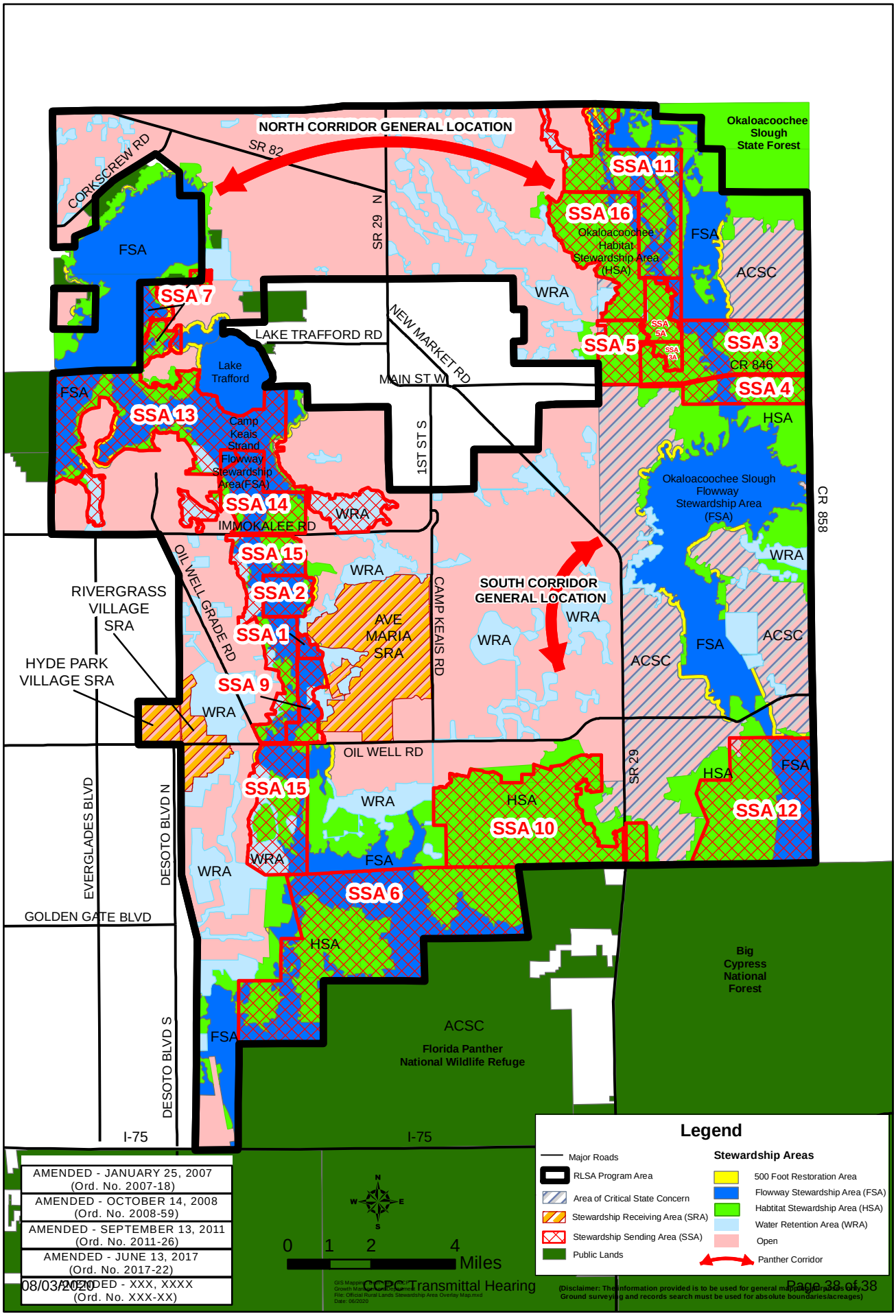
- Major Roads
- RLSA Program Area
- Area of Critical State Concern
- Stewardship Receiving Area (SRA)
- Stewardship Sending Area (SSA)
- Big Cypress National Forest

Stewardship Areas

- 500 Foot Restoration Area
- Flowway Stewardship Area (FSA)
- Habtitat Stewardship Area (HSA)
- Water Retention Area (WRA)
- Open

Proposed Draft

RURAL LANDS STEWARDSHIP AREA OVERLAY MAP



Note: The official designated titles of SSAs can be found within SSA Credit Agreements.

[EXTERNAL] RE: Wildlife Conflict Mitigation Measures- Collier HCP

Meredith Budd <meredithb@fwfonline.org>

Mon 8/3/2020 6:45 PM

To: Kelso, Charles <charles_kelso@fws.gov>
Cc: Shindle, David B <david_shindle@fws.gov>; Elizabeth Flemning <EFleming@defenders.org>; Brad Cornell (millercornell@mindspring.com) <millercornell@mindspring.com>; Daniel.Smith@ucf.edu <Daniel.Smith@ucf.edu>

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Chuck,

Thank you for the call back this morning. I uploaded the relevant documents that have been provided to the county regarding the three proposed villages in the HCP area: Rivergrass, Longwater, and Bellmar. For each I uploaded the Stewardship Receiving Area (SRA) Narrative, the Master plans, and the SRA documents. These should be helpful in your review.

If possible, I would like to schedule a call with you and others from the Service that are working on this that can include Brad Cornell and Elizabeth Fleming and Dan Smith (cc'd here). I have cc'd Dave Shindle here. The rubber is meeting the road with these villages moving forward at the county level and there seems to be a disconnect between what is expected from the HCP at the landscape level and what is required for county permitting at the site level. Also- it has become very apparent that many areas of the Stewardship Sending Areas (SSAs)—in particular, SSA 17- that, even though they are preserved, the placement of the development surrounding the SSA and the associated fencing being required by the county renders those areas not-viable for panther use—so it begs the question whether we are really getting the conservation lift from these SRA/SSA designations. Please let me know if/when you and your team have availability to chat!

Thank you!

--
Meredith Budd
Regional Policy Director
Florida Wildlife Federation
Office: 239-302-1767
www.fwfonline.org

SIERRA CLUB

February 20, 2020

Public Comments Processing
Attn: FWS–R4–ES–2018–0079
U.S. Fish and Wildlife Service Headquarters,
JAO/1N
5275 Leesburg Pike
Falls Church, VA 22041–3803

RE: Comment on ITP application of Gargiulo, Inc. relying on "Eastern Collier Property Owners" HCP

Submitted electronically to Docket No. FWS-R4-ES-2018-0079 on www.regulations.gov.

Dear Deputy Regional Director Oetker,

The Conservancy of Southwest Florida,Center for Biological Diversity, and Sierra Club write in regards to the Incidental Take Permit (ITP) application of Gargiulo, Inc.[1] and the proposed Eastern Collier Multiple Species Habitat Conservation Plan (HCP).

There is additional information that may not have been reviewed by the US Fish and Wildlife Service (USFWS) during the prior public comment period on the HCP that closed December 3, 2018.[2] Please include this letter in the adminsitative record as it relates to the Gargiulo ITP application, as well as to supplement our prior comments regarding the HCP as a whole.

Additional Development That Poses Unacceptable Cumulative Impacts

There are new development proposals in or around the HCP area that the USFWS should consider in its decision-making on the proposed ITPs.

The Immokalee Road Rural Village (IRRV) MPUD is 2,787.27 acres in size (578.90 of sending designated lands, 1,997.59 acres of receiving lands, and 210.78 acres of neutral designated lands under the Collier County Rural Fringe-Mixed Use District program). It is proposed to be located

[1] 85 Fed. Reg. 3,941. (January 23, 2020).
[2] 83 Fed. Reg. 53,079 (Oct. 19, 2018).

on Immokalee Road near the Corkscrew Swamp Sanctuary (Exhibit A, B) and is close to the Rural Lands Stewardship Area (RLSA)/HCP area.

According to the October 2018 environmental report submitted to Collier County[3], the IRRV site has documented American alligator, gopher tortoise, Audubon's crested caracara, Florida burrowing owl, sandhill crane, tri-colored heron, and little blue heron on the site, as well as rare or listed plants. Other wildlife that the report states may occur on the site include eastern indigo snake, roseate spoonbill, wood stork, red-cockaded woodpecker, Everglade snail kite, Southeastern American kestrel, least tern, Florida bonneted bat, Everglades mink, Florida panther, and Big Cypress fox squirrel.

Further, the IRRV project is located directly adjacent to a documented "orange" panther-vehicle collision hotspot as identified by the Florida Panther Recovery Implementation Team Transportation Subteam[4] (Exhibit C).

Hyde Park (AKA "Collier Lakes" or "Winchester Lakes") is a proposed 642+ acre development that is within the RLSA/HCP area (Exhibit D). It is located on a parcel that is directly adjacent to the Rural Lands West/Rivergrass development, and is labeled as "Eligible for HCP Inclusion (Non-ECPO lands)" on Figure 2-1 of the August 2018 HCP[5] (Exhibit E). These 654+ acres make up part of the over 20,000 acres of non-ECPO private property that are within the RLSA/HCP area. To our knowledge, the owners of the Hyde Park property are not participants of the HCP.

HCP Applicant is Moving Forward with Local Applications

One of the Eastern Collier HCP applicants, Collier Enterprises, has submitted three applications for development to the local level at Collier County. One of those proposals, Rivergrass, was recently approved by the Collier County Board of County Commissioners.

The project Rivergrass is located on a portion of the lands that the applicant has previously submitted Biological Assessments for under the name Rural Lands West, and prior to that, called Town of Big Cypress. To our knowledge, Rural Lands West is still active at the Army Corps of Engineers and has not been modified to reflect any change in footprint or land ownership. Some of the lands within the Rural Lands West footprint are now owned by Gargiulo and are the subject of this ITP application federal register notice. Lands within the Rural Lands West footprint that are now owned by Gargiulo are indicated as Covered Activities in the August 2018 version of the HCP.

We have submitted comments regarding Town of Big Cypress, Rural Lands West, and Rivergrass to the USFWS, expressing concerns about how this development threatens listed species, particularly the Florida panther. The Rivergrass site contains approximately 700 acres of

[3] October 2018 Immokalee Road Rural village Growth Management Plan Amendment Collier County Environmental Data Report.
[4] Southwest Florida Road Hot Spots Based on Documented Florida Panther Vehicle Mortalities and Injuries as of December 31, 2017. IRRV is adjacent to the segment indicated as hotspot "F."
[5] Eastern Collier Property Owners, 2018. Eastern Collier Multiple Species Habitat Conservation Plan, Revised August 2018. Prepared by Stantec Consulting Services.

Primary Zone habitat. These letters have been submitted as part of the administrative record for the HCP. We are enclosing an additional letter, dated August 5, 2019, regarding the newer Rivergrass footprint, and we ask that you include these as part of the record as well.

Further, Collier Enterprises has also submitted applications with Collier County for two other developments: Longwater and Bellmar (Exhibit F). Bellmar Village would consist of 2,750 homes and approximately 68,750-85,000 square feet of commercial uses; whereas, Longwater Village would consist of approximately 2,600 homes and 65,000-80,000 square feet of commercial uses. Both of these proposals are completely within the Primary Zone habitat of the Florida panther and also have a substantial amount of Adult Breeding Habitat as well (Exhibit G).

New Study Shows Importance of Alico's Lost Grove Mine to Wildlife Corridor

In 2019, a study concerning the need for safe crossing locations on Corkscrew Road and Keri Road was finalized.[6] It is enclosed with this letter.

This study analyzed movement patterns and potential road crossings of the panther and other wildlife. The study documented 205 photo events of panthers crossing or near Corkscrew Road. There are four different segments of Corkscrew Road that are considered hot spots for panther-vehicle collisions (Exhibit C).

Dr. Smith's study revealed that there are two distinct landscape linkages along the Corkscrew Road corridor. On the Collier County segment of this road, the most important linkage points were adjacent to Corkscrew Regional Ecosystem Watershed (CREW) and a portion of the HCP-identified Covered Activities area owned by Alico (for the project known as Lost Grove Mine) (Exhibit E, H).

The study indicates that a location with an existing culvert that could be modified to allow passage from CREW safety across this problematic segment of roadway, with hopes of allowing improved access to the wildlife ledges that are planned as part of the Florida Department of Transportation's widening of SR82 (as a part of their project, they are planning to install wildlife ledges at two locations, Panther Creek and Under Canal).

However, the current HCP shows the Lost Grove Mine site as largely Covered Activities area, without any wildlife corridor through the property to make these necessary linkages.

Gargiulo Lands Are Essential Habitat for the Covered Species

The federal register notice identifies that a new landowner, Gargiulo, Inc. has applied for an ITP. The notice mentions approximately 5,000 acres that were purchased by Gargiulo from Collier Enterprises. No map of these lands were provided as part of the federal register notice, however, we were able to obtain more information about the land transfer via the South Florida Water

[6] Smith, 2019. Assessing the Value of Current Movements Pathways of Florida Panthers that Intersect Keri and Corkscrew Roads: Identifying Location and Need for Safe Crossing Measures, Final Report. Presented to Florida Wildlife Federation. August 19, 2019 revised.

Management District and digitize it on ArcGIS (Exhibit I). The Gargiulo lands appear to be a mixture of Covered Activities areas and Preserve/Plan-wide Activities areas (Exhibit E). Much of these Gargiulo lands are within the area of Camp Keais Strand.

In our December 2018 submittal, we provided a report by Dr. Robert Frakes that showed the impact of Covered Activities to significantly narrow and shorten the corridor and flowway of the Camp Keais Strand.[7] Dr. Frakes states in his report that "the portion of the CA [Covered Activities] known as Rural Lands West was especially damaging to the adjacent north-south habitat corridor (Camp Keais Strand).[8] The Gargiulo property contains a portion of the Rural Lands West footprint (Exhibit I, J). Thus, the concerns that we have expressed to the USFWS regarding the Rural Lands West property would continue to be relevant, despite the change in land ownership.

In those prior letters, we have cited a study by Smith et al., 2006, as well as the Panther Review Team report, 2009, that portions of the Gargiulo property that is depicted as Covered Activities areas should be preserved and not intensified (see the Conservancy of Southwest Florida's April 25, 2016 letter). Our previous letters also showed that the Gargiulo property falling within the Covered Activities areas is also considered Primary Zone panther habitat and/or Adult Breeding Habitat.

Based on our prior knowledge of the Rural Lands West project, we are aware of a crested caracara nest and a bald eagle nest that are located on the Gargiulo property (Exhibit K).

<u>The HCP Likely Contains Florida Bonneted Bat Critical Habitat</u>

The Florida bonneted bat was listed as endangered under the Endangered Species Act in 2012.[9] The USFWS has agreed to proposed critical habitat for this species by August 13, 2020. The bonneted bat is listed as one of the Covered Species in the HCP.[10] All of Collier County is within the current consultation area for this species.[11] Florida bonneted bat calls have been detected within the HCP Covered Activities Areas, including within lands owned now by Gargiulo.[12] Once critical habitat is designated, consultation will need to be reinitiated, if it has concluded prior to the date of designation.

In light of this pending critical habitat designation, FWS must specifically ensure that the terms of any ITPs and HCPs issued for areas within the habitat of this species expressly reserve authority for FWS to prevent impacts to critical habitat designated after issuance of the

[7] Frakes, 2018. Impacts to Panther Habitat From the Proposed Eastern Collier Multiple Species Habitat Conservation Plan: A Quantitative Analysis. October 7, 2018.
[8] *Ibid*. P. 16.
[9] 77 Fed. Reg. 60,750. (October 4, 2012).
[10] Eastern Collier Property Owners, 2018. Eastern Collier Multiple Species Habitat Conservation Plan, Revised August 2018. Prepared by Stantec Consulting Services.
[11] US Fish and Wildlife Service, 2019. Letter to Army Corps of Engineers, Consultation Key for the Florida Bonneted Bat. October 22, 2019.
[12] Collier Enterprises, 2017. Rural Lands West Biological Assessment, Revised June 27, 2017. Florida bonneted bat calls were recorded at Acoustic Stations 4, 6, 7, and 11 which are now owned by Gargiulo.

ITPs. Further, the terms and conditions imposed under both ESA section 7 and 10 should expressly require that *all* on the ground activities by permittees stop pending completion of the reinitiated consultation to address the critical habitat designation.

Panther Population Potentially At Risk from New Disorder

In August 2019, the Florida Fish and Wildlife Conservation Commission (FWC), issued a press release regarding a mysterious disorder affecting panthers and other wildlife.[13] FWC first began to see signs of the disorder –now called feline leukomyelopathy- in spring 2018. In 2019, additional reports and review of archival information, showed that this disorder was a broader issue that could have grave impacts on the panther population. It is unknown how many panthers are affected by the condition. At least three panthers have been removed from the wild, so far, due to this disorder.[14] Despite a nationwide appeal to experts, neither FWC nor USFWS have been able to determine the cause of the disorder.

Because of the serious nature of this disorder and its unknown effects in the short and long term to the panther population, USFWS should not issue Gargiulo's requested ITP, nor the requested ITPs of the other 11 applicants to the Eastern Collier HCP.

The requested ITP is for a 50-year term, and a decision now to award the ITP despite the lack of understanding of this new grave threat to the limited existing population would jeopardize the survival and recovery of the panther.

Conclusion

Thank you for considering our comments, which add to our prior communications on the HCP and the individual projects related to the HCP area. If you have any questions about our letter or would like to discuss further, please contact us.

Sincerely,
Amber Crooks
Environmental Policy Manager
Conservancy of Southwest Florida
(239) 262-0304 ext. 286
amberc@conservncy.org

Jaclyn Lopez
Florida Director
Center for Biological Diversity
(727) 490-9190
jlopez@biologicaldiversity.org

[13] Florida Fish and Wildlife Conservation Commission, 2019. Disorder Impacting Panthers and Bobcats. Accessed at https://myfwc.com/wildlifehabitats/wildlife/panther/disorder.
[14] Gillis, 2020. Panther Kittens That Lost Their Mother To a Neurological Disorder Will Prepare for Next Phase of Life in Captivity. Fort Myers News-Press. Published January 17, 2020.

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Cc:
Larry Williams, USFWS
Roxanna Hinzman, USFWS
Constance Cassler, USFWS
Chuck Kelso, USFWS
Ken MacDonald, USFWS

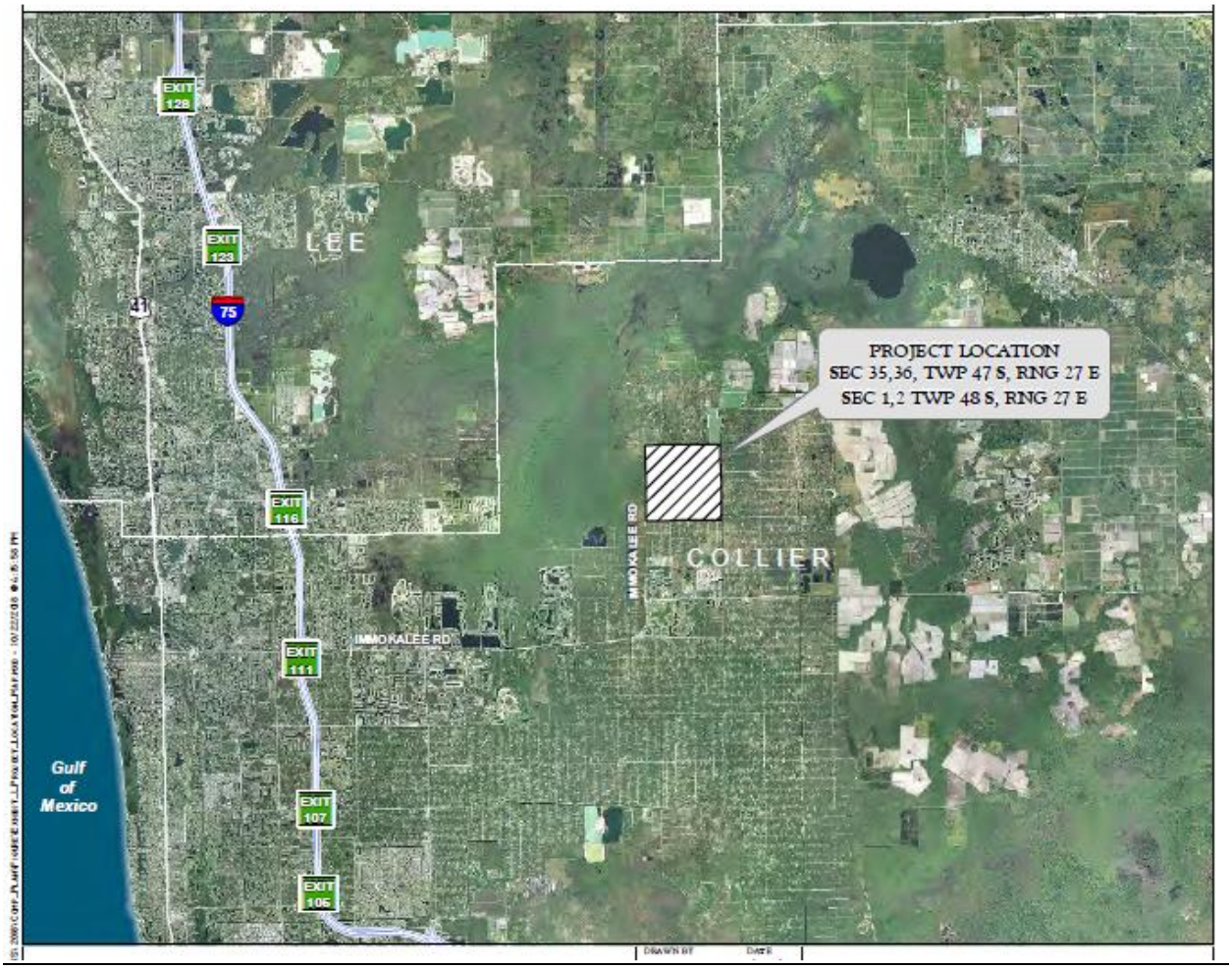
Enclosures:

1. Conservancy of Southwest Florida letter dated August 5, 2019 regarding Rivergrass Village SRA Application #PL2019000044.
2. Smith, 2019. Assessing the Value of Current Movements Pathways of Florida Panthers that Intersect Keri and Corkscrew Roads: Identifying Location and Need for Safe Crossing Measures, Final Report. Presented to Florida Wildlife Federation. August 19, 2019 revised.

Attachment A[15]

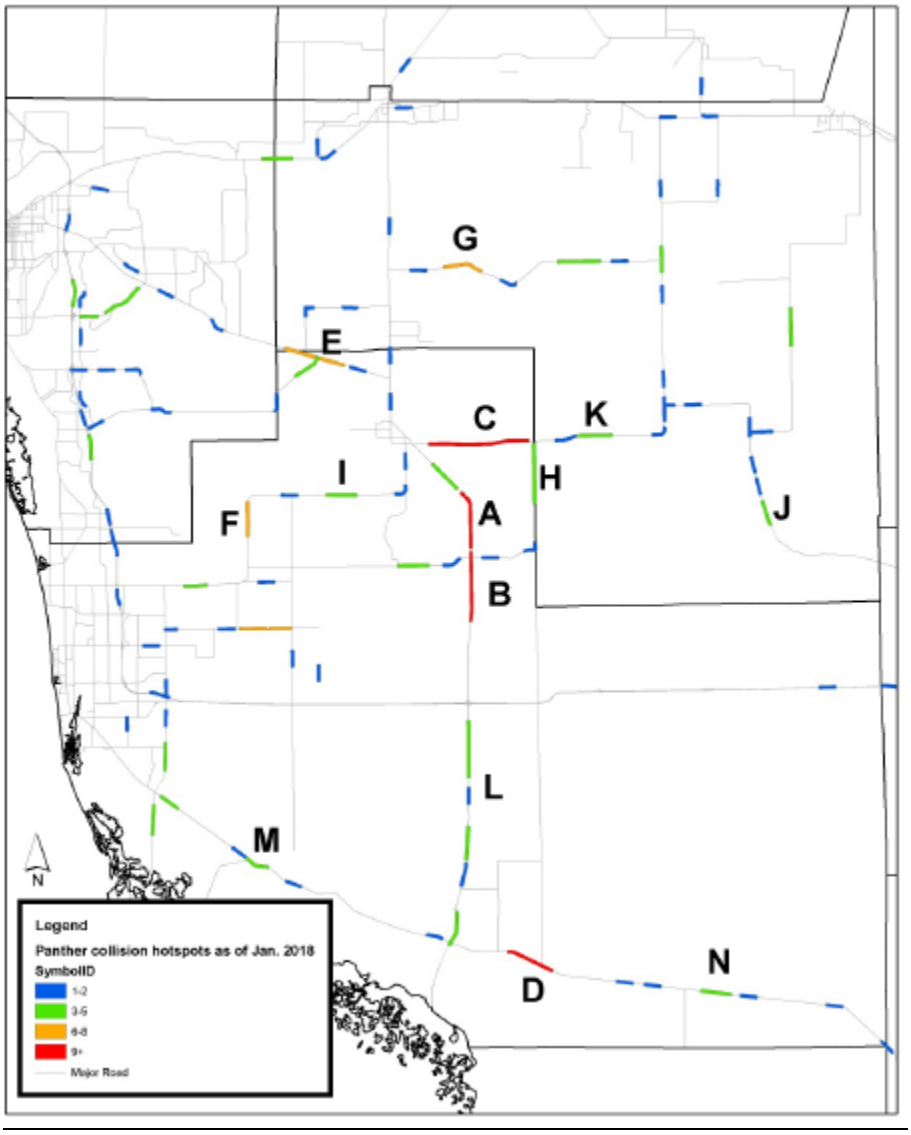
[15] Map from April 9, 2019 letter to Collier County Re: Immokalee Road Rural Village (GMPA & MPUD).

Exhibit B[16]



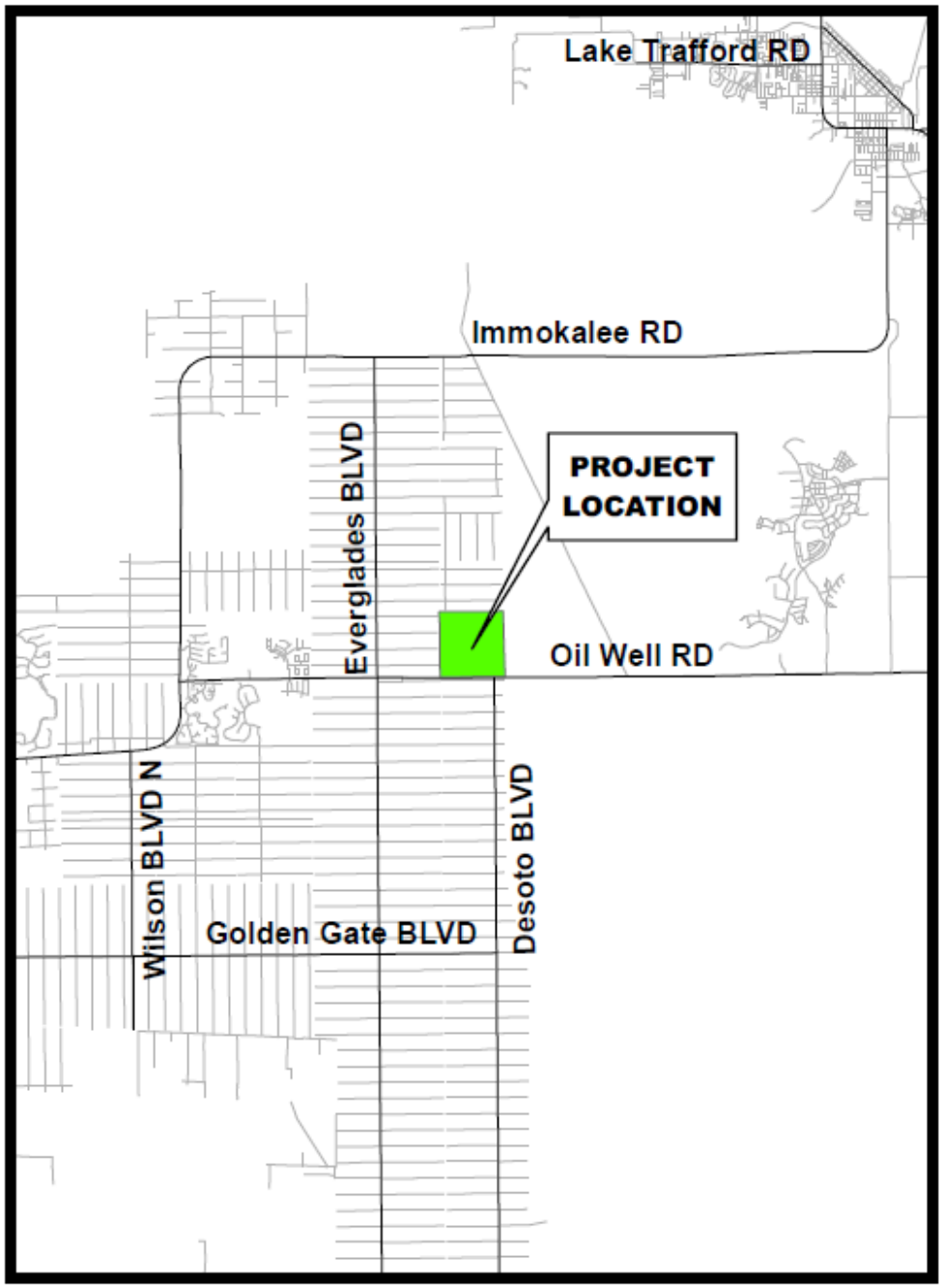
[16] Map from October 2018 Immokalee Road Rural village Growth Management Plan Amendment Collier County Environmental Data Report.

Exhibit C[17]



[17] Southwest Florida Road Hot Spots Based on Documented Florida Panther Vehicle Mortalities and Injuries as of December 31, 2017.

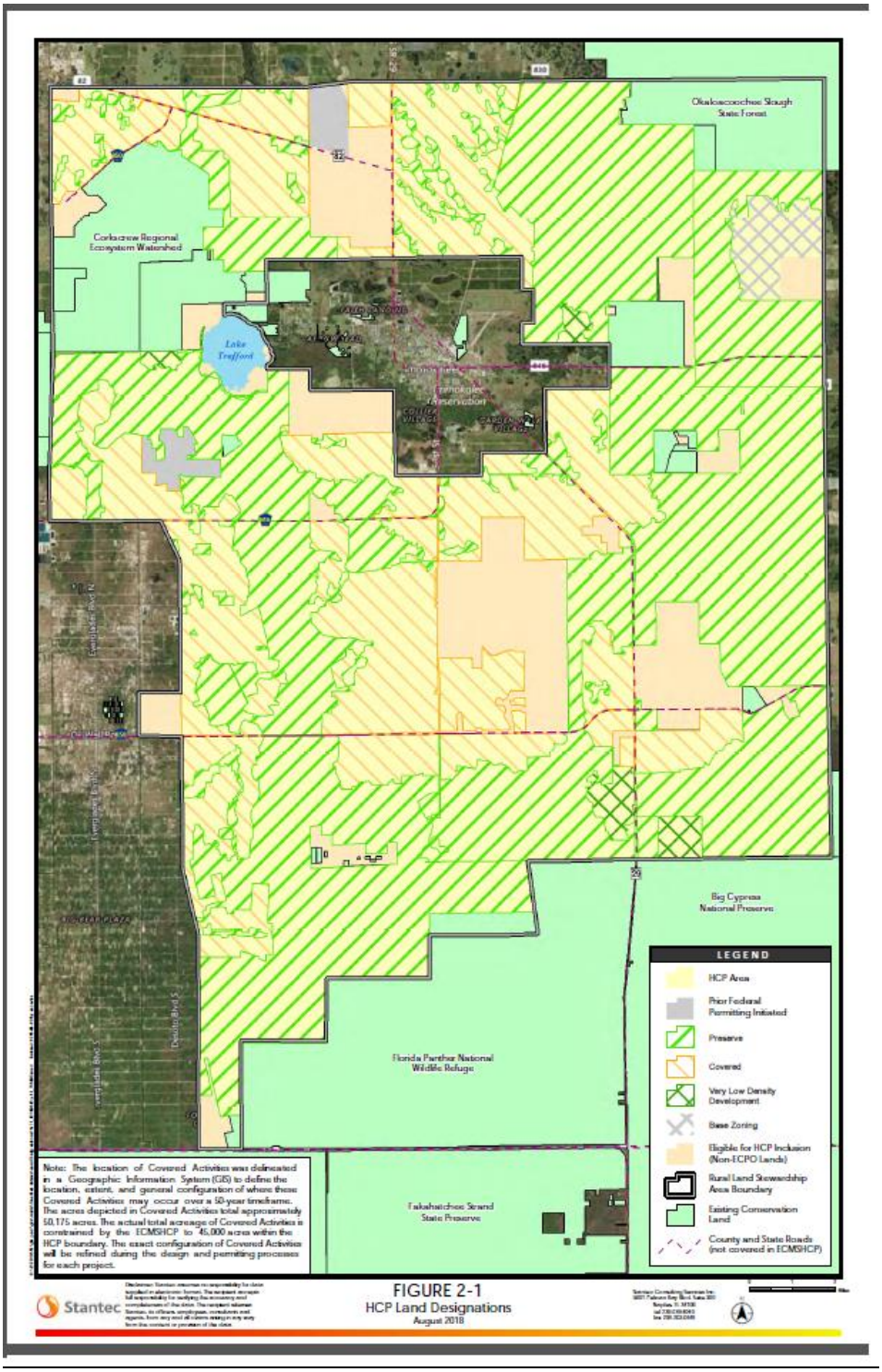
Exhibit D[18]



Location Map

[18] Site Location Map Submittal to Collier County.

Exhibit E[19]



[19] Eastern Collier Property Owners, 2018. Eastern Collier Multiple Species Habitat Conservation Plan, Revised August 2018. Prepared by Stantec Consulting Services.

Exhibit F

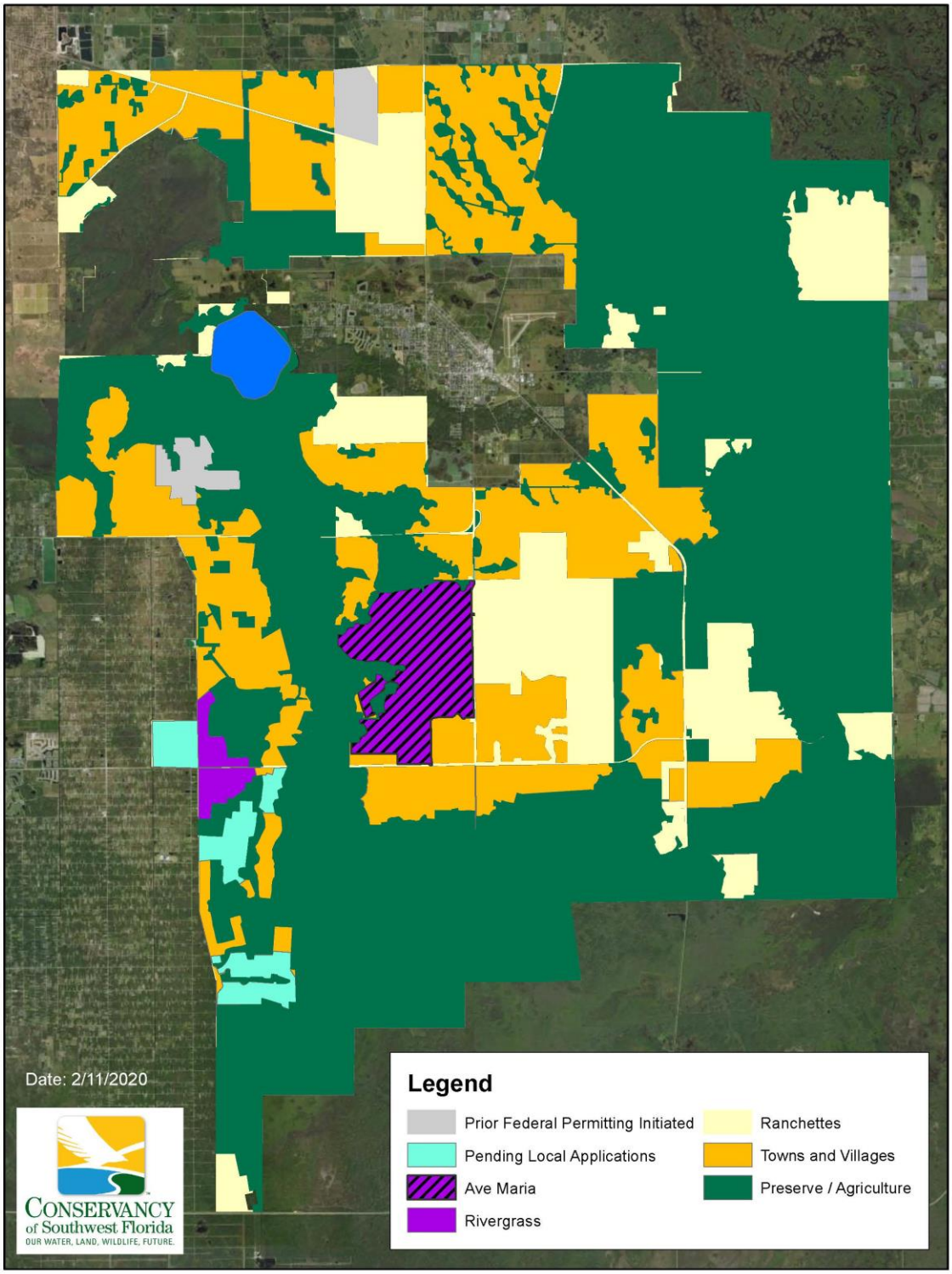
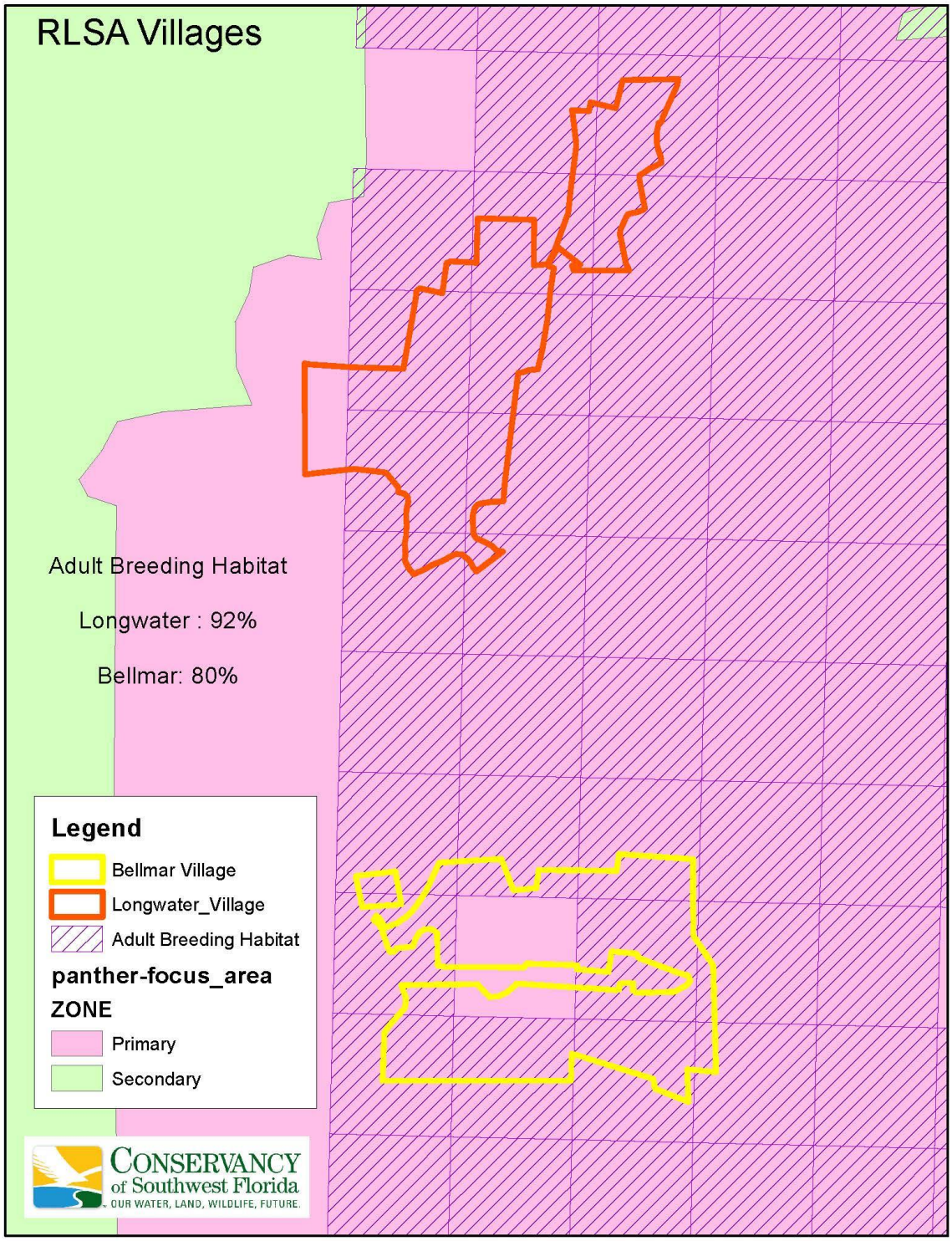

Date: 2/11/2020
CONSERVANCY of Southwest Florida
OUR WATER, LAND, WILDLIFE, FUTURE.
Legend
Prior Federal Permitting Initiated
Pending Local Applications
Ave Maria
Rivergrass
Ranchettes
Towns and Villages
Preserve / Agriculture

Exhibit G



Date: 9/4/2019

Exhibit H[20]

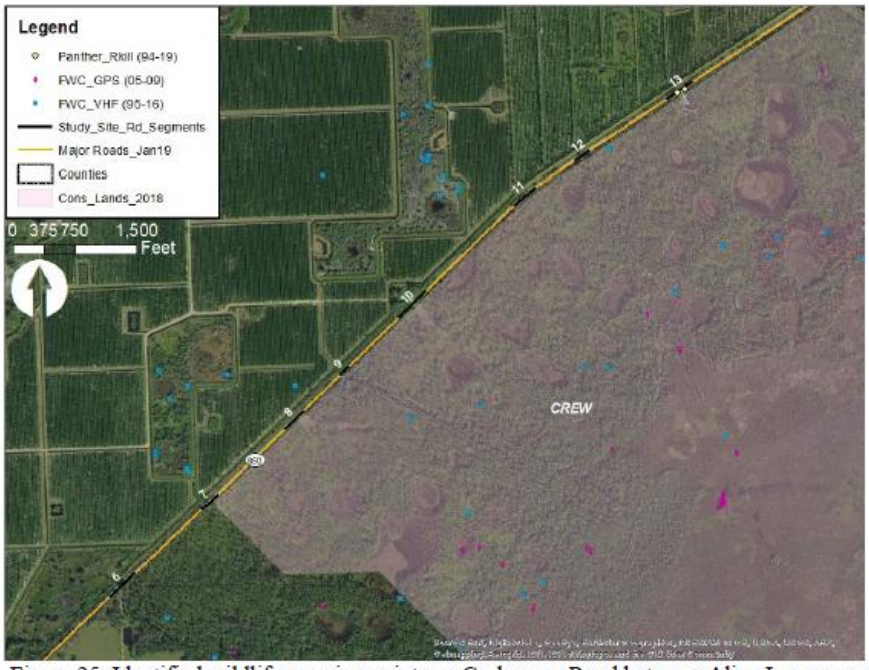


Figure 25. Identified wildlife crossing points on Corkscrew Road between Alico Inc. groves and CREW. Road segment nos. 10 and 11 were the only sites where access roads allowed dry crossing opportunities over the border irrigation canal within the groves. Telemetry locations (in blue) show panther use of internal natural areas within the groves.

Figure 26. Identified wildlife crossing points at road segment nos. 14 and 15 on Corkscrew Road. Road segment no. 14 includes a large culvert for a canal that crosses under Corkscrew Road. This canal continues north to SR 82 where FDOT is constructing ledges under the road for wildlife passage. The blue star indicates the location of the existing culvert for the canal.

[20] Smith, 2019. Assessing the Value of Current Movements Pathways of Florida Panthers that Intersect Keri and Corkscrew Roads: Identifying Location and Need for Safe Crossing Measures, Final Report. Presented to Florida Wildlife Federation. August 19, 2019 revised

Exhibit I

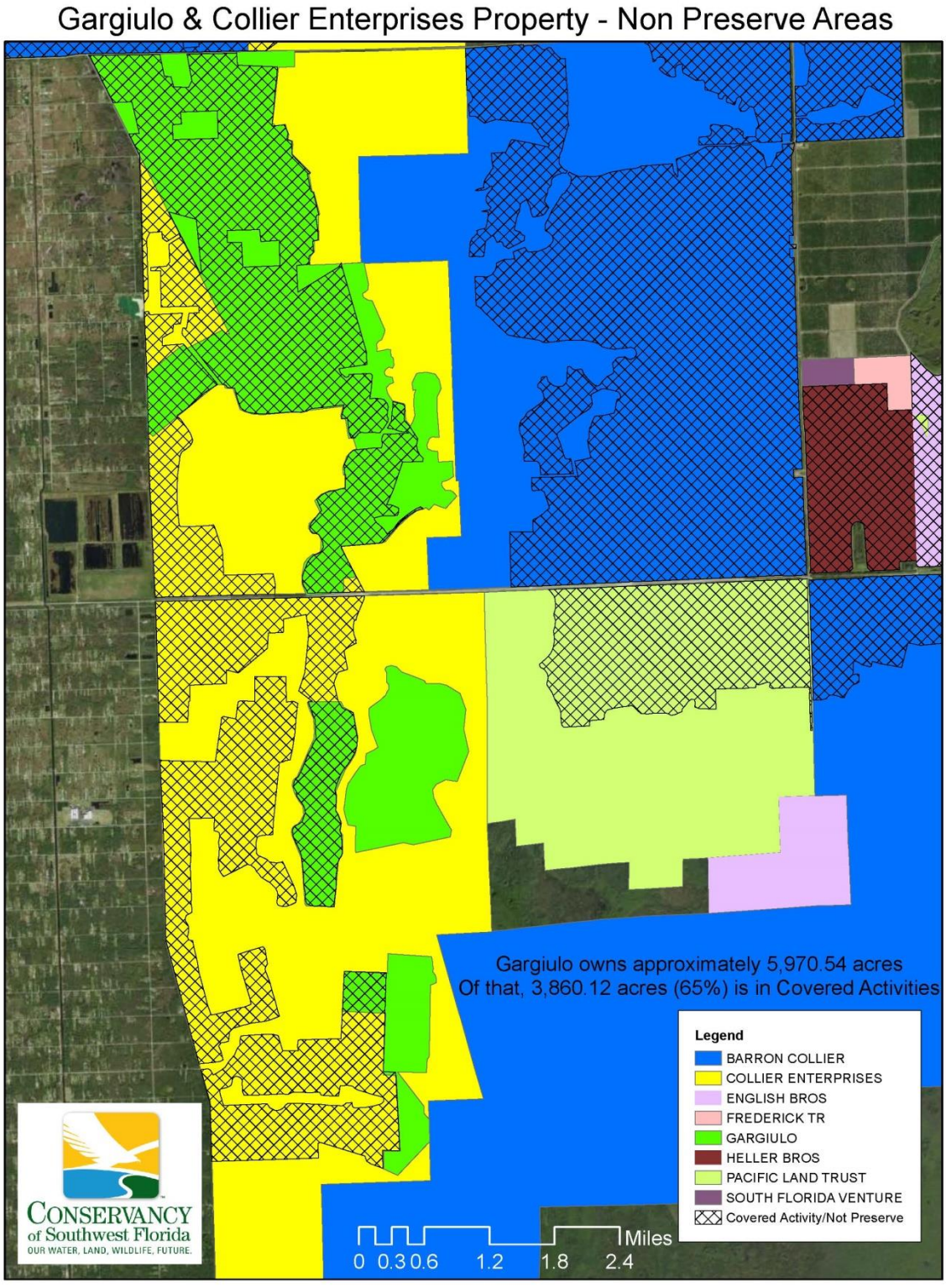
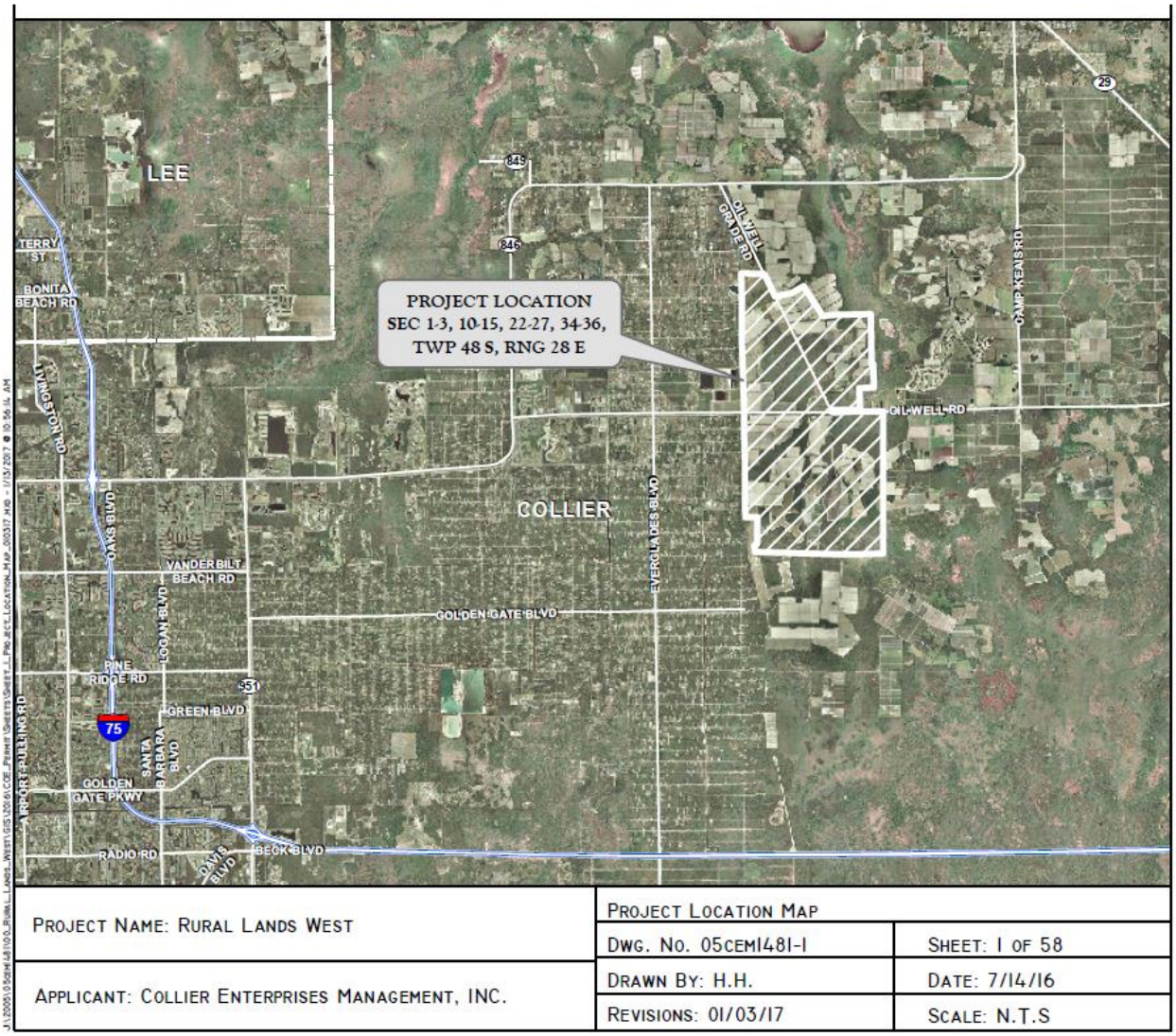

Gargiulo & Collier Enterprises Property - Non Preserve Areas
Gargiulo owns approximately 5,970.54 acres
Of that, 3,860.12 acres (65%) is in Covered Activities
Legend
BARRON COLLIER
COLLIER ENTERPRISES
ENGLISH BROS
FREDERICK TR
GARGIULO
HELLER BROS
PACIFIC LAND TRUST
SOUTH FLORIDA VENTURE
Covered Activity/Not Preserve
0 0.30.6 1.2 1.8 2.4
Miles
CONSERVANCY of Southwest Florida
OUR WATER, LAND, WILDLIFE, FUTURE.

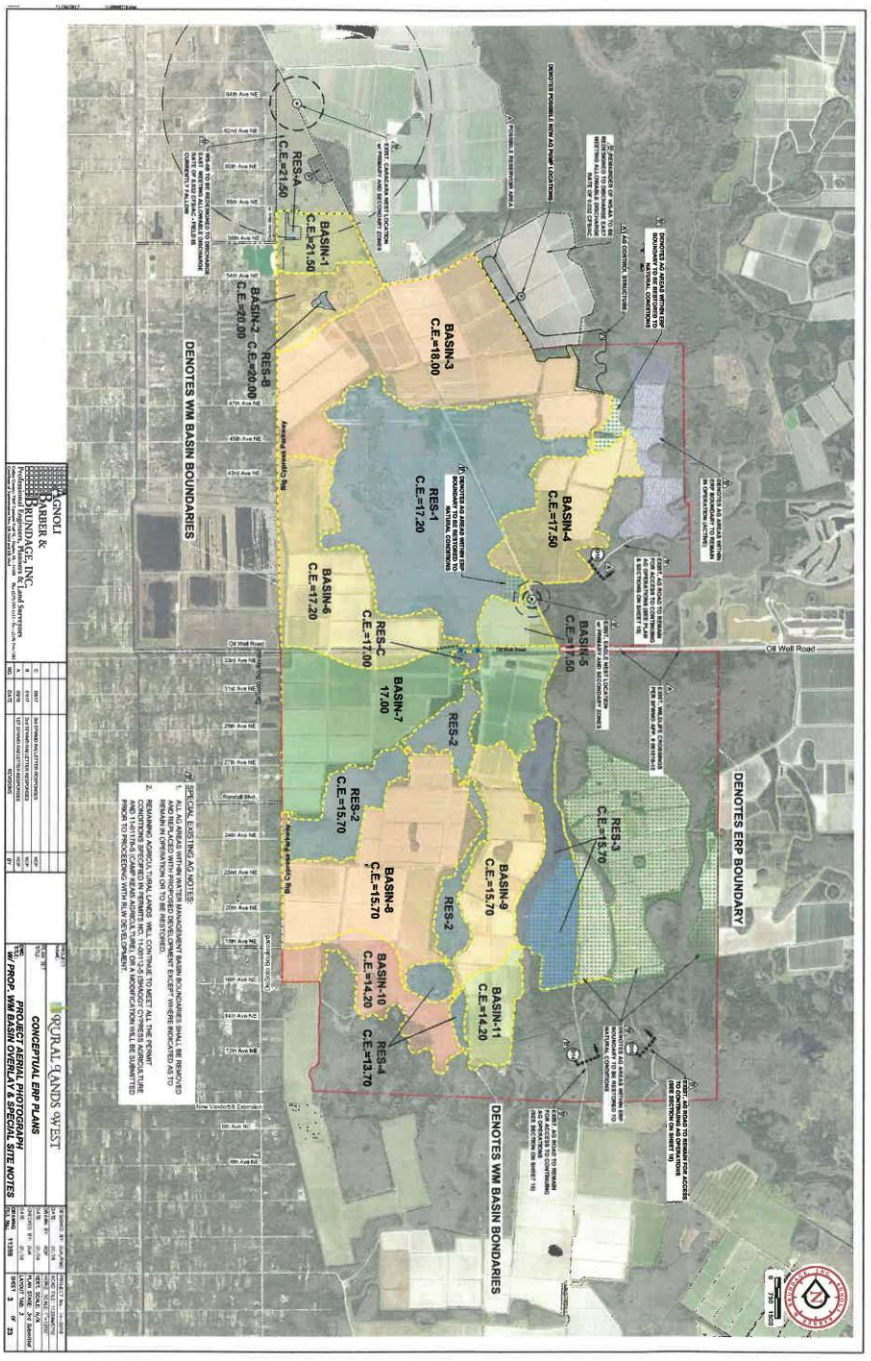
Exhibit J[21]



PROJECT NAME: RURAL LANDS WEST	PROJECT LOCATION MAP	
	DWG. NO. 05CEMI481-I	SHEET: I OF 58
APPLICANT: COLLIER ENTERPRISES MANAGEMENT, INC.	DRAWN BY: H.H.	DATE: 7/14/16
	REVISIONS: 01/03/17	SCALE: N.T.S

[21] Army Corps of Engineers, 2017. Public Notice for Rural Lands West SAJ-2008-00210 (SP-RMT). Posted July 25, 2017.

Exhibit K[22]



[22] Map from Rural Lands West submittal to South Florida Water Management District Conceptual ERP Plans. Map dated 2016.

CONSERVANCY of Southwest Florida
OUR WATER, LAND, WILDLIFE, FUTURE.

Protecting Southwest Florida's unique natural environment and quality of life ... now and forever.

August 5, 2019

Nancy Gundlach, AICP, Principal Planner
Corby Schmidt, AICP, Principal Planner
Kirsten Wilkie, Environmental Services Manager
Craig Brown, Sr. Environmental Specialist
Michael Sawyer, Principal Planner
Collier County Growth Management Department
2800 North Horseshoe Drive
Naples, FL 34104

RE: Rivergrass Village SRA Application #PL20190000044

Dear Ms. Gundlach, Mr. Schmidt, Ms. Wilkie, Mr. Brown, and Mr. Sawyer:

On behalf of the Conservancy of Southwest Florida (Conservancy) and our over 7,000 supporting families, we are writing this letter to express our concerns regarding the proposed Rivergrass Village Stewardship Receiving Area (SRA). Plans for Rivergrass Village and many of the proposed deviations are inconsistent with the guiding principles of the RLSA Overlay[1] and Final Order[2] and are contrary to several provisions of the land development code (LDC). Furthermore, development plans for Rivergrass Village are antithetical to the design standards provided in Collier County's Community Character Plan,[3] which is the community's vision for how Collier County should grow. We are concerned that if this project is approved without significant modifications, a precedent would be set, paving the way for approval of other projects in the RLSA that are not within the public interest and that would have unacceptable impacts to natural resources.

We respectfully ask that you consider these issues during your review and evaluation of Rivergrass Village SRA application. This letter provides our analysis regarding why the project should be denied and where the plan violates the provisions of the Overlay, the LDC, the Final Order, and the Community Character Plan. Also, because the Conservancy strives to always offer solutions for a more sustainable plan, we provide an alternative footprint that would bring the applicant into compliance with the RLSA Overlay goal and the Final Order, by directing development away from listed species and their habitat.

---

[1] Collier County Future Land Use Element Rural Lands Stewardship Area (RLSA) Overlay
https://www.colliercountyfl.gov/home/showdocument?id=77306
[2] State of Florida Administrative Commission Final Order No. AC-99-002 (1999, June 22).
[3] Dover, Kohl & Partners for Collier County (2001, April) "Toward Better Places, The Community Character Plan for Collier County, Florida,"
https://www.colliercountyfl.gov/home/showdocument?id=72825

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1495 Smith Preserve Way | Naples, Florida 34102 | 239.262.0304 | Fax 239.262.0672 | www.conservancy.org

Our main concerns of Rivergrass Village include the following and will be addressed in this order:

ISSUE 1: Rivergrass Village would jeopardize the survival of the endangered Florida panther.

ISSUE 2: The design of Rivergrass Village is contrary to the Overlay's design requirements for a compact walkable village.

ISSUE 1

RIVERGRASS VILLAGE WOULD JEOPARDIZE THE SURVIVAL OF THE ENDANGERED FLORIDA PANTHER

A. Incompatible Site Location

Over 70% of the proposed site for Rivergrass Village is within Primary Zone[4] habitat of the endangered Florida panther **(Figure 1)**. In addition, 34% of the village's site would impact Adult Breeding Habitat[5] of the panther **(Figure 2)**. Allowing over 700 acres of residential neighborhoods, roads, and a golf course and clubhouse to be built within habitat that is essential to the Florida panther is irresponsible, egregious, and would directly threaten the species' recovery and survival. Furthermore, locating Rivergrass Village within habitat of the endangered Florida panther also conflicts with the underlying principles of the Rural Lands Stewardship Area Overlay (RLSA). Here is why:

Directing development away from important natural resources, including listed species habitat, has been a primary objective of the RLSA since the program's inception. In fact, the impetus for the program was a 1999 Final Order,[6] in which the State of Florida mandated that Collier County do a better job of protecting natural resources. The Final Order included several provisions, one of which required the county to create a plan that would **"direct incompatible uses away from wetlands and upland habitat in order to protect water quality and quantity and maintain the natural water regime as well as protect listed animal and plant species and their habitat."**[7] Three years later, in 2002, the RLSA Overlay and policies were adopted to meet the requirements of the Final Order. Language in the RLSA mirrored that of the Final Order by stating that one of the goals of the program is to **"direct incompatible uses away from wetlands and upland habitat."**[8] Even Florida's Rural Lands Stewardship Act, which was enacted around the same time of Collier County's program, states that receiving areas should **"avoid conflict with significant environmentally sensitive areas, resources, and habitats."**[9] Based on the language from those three documents, it is obvious that the intent of the RLSA program was to encourage development patterns in an environmentally sustainable manner by directing development and intensification to locations that do not conflict with protection of listed species and their habitat. However, plans for Rivergrass Village would do the opposite as the applicant chooses to directly impact over 700 acres of habitat for the endangered panther.

The following points substantiate the need to protect all Primary Zone habitat and Adult Breeding Habitat for the endangered Florida panther:

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[4] Kautz, et al. (2006) How much is enough? Landscape–scale conservation for the Florida panther. *Biological Conservation 130, p. 118-133*
[5] Frakes RA, Beldon RC, Wood BE, James FE. (2015). Landscape Analysis of Adult Florida Panther Habitat. *PLoS ONE*, 10(7).
[6] Final Order AC-99-002 State of Florida Administrative Commission
[7] State of Florida Administrative Commission Final Order No. AC-99-002 (1999, June 22) p. 11
[8] Collier County Future Land Use Element RLSA Overlay Goal
[9] FLA STAT § 163.3177(11)(d), July 1, 2001.

B. Importance of Protecting Primary Zone Panther Habitat (Figure 1)

- Habitat of the Florida panther is extremely limited as the panther is restricted to less than 5% of its historic range[10], all of which is located in south Florida. Primary Zone habitat is an essential part of the Florida panther's range.
- Kautz et al. (2006)[11] describes Primary Zone panther habitat as the minimum space needed to support a population that is barely viable as long the habitat base remains the same.
- The U.S. Fish and Wildlife Service (FWS) states the following in their Florida Panther Recovery Plan: "To prevent further loss of population viability, habitat conservation efforts should focus on maintaining the total available area, quality, and spatial extent of habitat within the Primary Zone."[12]
- During the five year review process of the RLSA, the Environmental Advisory Council (EAC) of Collier County stated in a report that "It is the obligation of the County to protect primary panther habitat and to direct development away from this area."[13] The EAC referenced Kautz et al. (2006) as best available science and that Primary Zone habitat should be protected.
- Because the Primary Zone habitat is so vital to the endangered Florida panthers' survival and because the Overlay requires protection of listed species habitat, all Rivergrass Village lands within Primary Zone panther habitat should be retained in its current agricultural use and not be allowed to intensify to development.

[10] Frakes RA, Beldon RC, Wood BE, James FE. (2015). Landscape Analysis of Adult Florida Panther Habitat. *PLoS ONE*, 10(7).
[11] Kautz, et al. (2006) How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation 130, p. 118-133*
[12] U.S. Fish and Wildlife Service (2008) Florida Panther Recovery Plan. 3rd Revision. p.89
[13] Collier County (2009, March 10). Comments of the Environmental Advisory Council (EAC) and RLSA Committee Responses. (Comments by the EAC related to their review of the January, 2009 report of the RLSA Advisory Committee and report entitled "Five Year Review of the Rural Lands Stewardship Program"), p. 2

Figure 1 Rivergrass - Panther Zones

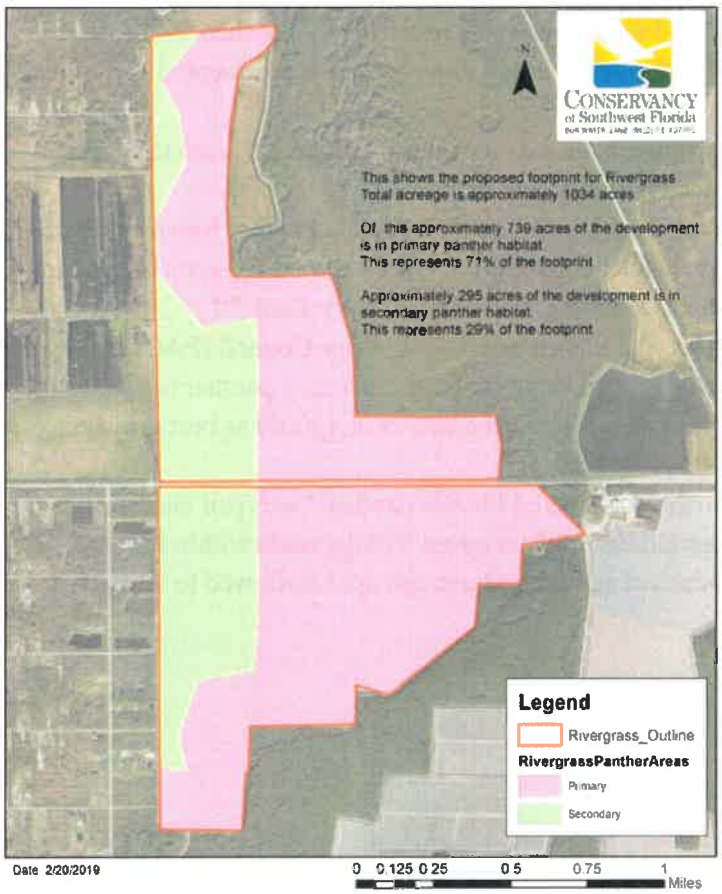
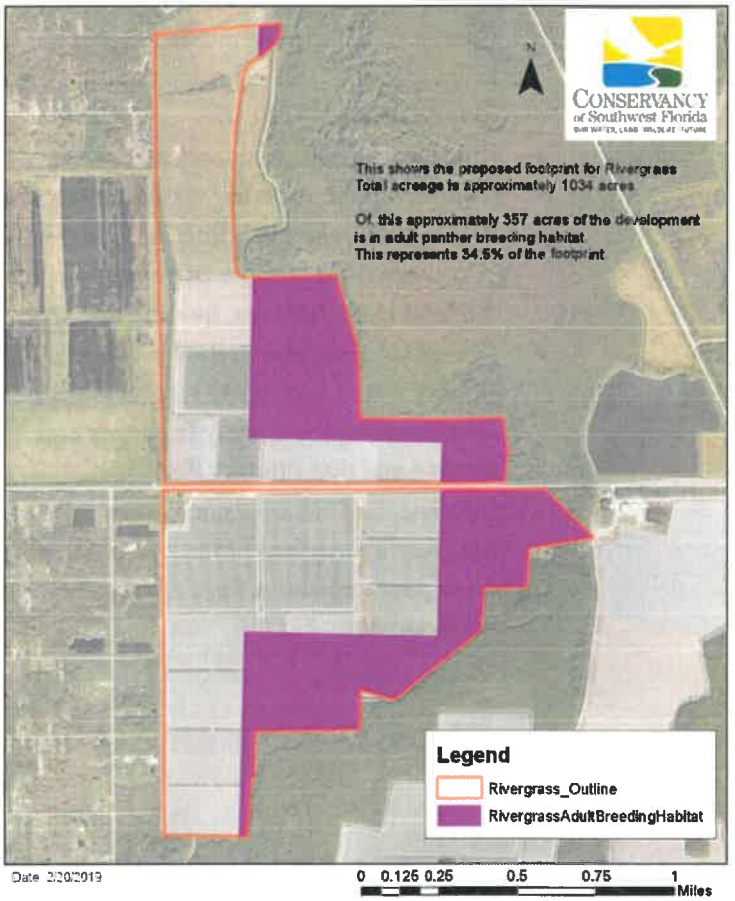


Figure 2 Rivergrass - Adult Breeding Habitat



C. Importance of Protecting Adult Breeding Habitat within Rivergrass Village (Figure 2)

- The Florida panther has one breeding population in southern Florida.[14]
- About 93.8% of Adult Breeding Habitat is contained with Primary Zone.[15]
- Frakes et al. (2015) recommends that *all* breeding habitat in south Florida is maintained.[16]
- Over a third of lands within the proposed Rivergrass Village are within Adult Breeding Habitat of the Florida panther **(Figure 2)**.
- Development in Rivergrass Village should be directed away from all Adult Breeding Habitat.

D. The RLSA Program is Outdated

Although the SRA boundary for Rivergrass Village is within the "Open" areas of the RLSA Overlay Map and not within the Habitat Stewardship Area (HSA) boundaries, this does not preclude the project from complying with the requirement of the Overlay and Final Order to direct development away from listed species habitat. In fact, the RLSA program is flawed because the program is woefully outdated since Collier County has not

[14] Frakes RA, Beldon RC, Wood BE, James FE. (2015). Landscape Analysis of Adult Florida Panther Habitat. *PLoS ONE*, 10(7).
[15] *Ibid.* p.15
[16] *Ibid.* p. 15-16

updated the data and land cover maps with current best available science. Data collected in the year 2000 for WilsonMiller's Stage 1 Report of the Immokalee Area Study[17] (Report) was used to determine the Natural Resource Index Map, Listed Species Habitat Indices, and HSAs. It was the intent of the Overlay to be periodically updated with new data and to incorporate findings from recent studies. The Report states:

> *"The analysis involving panther habitat for the Study will be complemented by ongoing computer modeling of potential habitat and development of an updated panther recovery plan by interagency committees led by the U.S. Fish and Wildlife Service."*[18]

However, the data and land cover that is the basis for the RLSA program is now nearly 20 years old. As previously stated, U.S. Fish and Wildlife Service ***did*** determine in their panther recovery plan that conservation efforts should concentrate on protecting Primary Zone panther habitat.[19] Yet the RLSA program ignores this fact. The Overlay must be updated so that future projects are reviewed using the current best available science for all listed species.

E. The Applicant Proposes to Receive Stewardship Credits for Impacting Areas of SSA17

As part of the stormwater management system for Rivergrass Village, the applicant proposes to build water management ponds within the adjacent water retention area (WRA).[20] Rivergrass' Public Facilities Report states, "Areas of the WRA will be excavated to form parts of the internal buffer lake system. . . . The only fill areas within WRA's will be berms associated with the surface management system." [21] This poses a problem because the WRA that is adjacent to Rivergrass is also a pending Stewardship Sending Area (SSA17), consisting of 2,716 acres of an ecologically important wetland system, called Shaggy Cypress, which provides habitat for 12 listed species, including the Florida panther.[22]

The RLSA Overlay clearly defines the purpose of Stewardship Sending Areas as areas that are to be protected. Landowners are granted Stewardship Credits for protecting those areas. Policy 1.21 of the Overlay states: "The incentive based Stewardship Credit system relies on the projected demand for Credits as the primary basis for permanent protection of flowways, habitats and water retention areas." It would logically follow that the applicant should not be allowed to earn Stewardship credits on the very lands within the SSA that are impacted by excavation and construction of the lake system.

LDC 4.08.06.4.b clearly states that if WRAs are modified to serve an SRA that the modifications shall not impact habitat of listed species (highlights added):

> *"During permitting to serve new uses within an SRA, additions and modifications to WRAs may be required, including but not limited to changes to control elevations, discharge rates, storm water pre-treatment, grading, excavation or fill. Such additions and modifications shall be allowed subject to review and approval by the SFWMD in accordance with best management practices. Such additions and modifications to WRAs shall be designed to ensure that there is no net loss of habitat function within the WRAs unless there is compensating mitigation or restoration in other areas of the RLSA District that will provide comparable habitat function. Compensating mitigation or restoration for an impact to a WRA contiguous to the Camp Keais Strand or Okaloacoochee Slough shall be provided within or contiguous to that Strand or Slough."*

---

[17] WilsonMiller (2000, December) The Immokalee Area Study I Report
[18] WilsonMiller (2000, December) The Immokalee Area Study I Report, p. 14
[19] U.S. Fish and Wildlife Service (2008) Florida Panther Recovery Plan. 3rd Revision. p.89
[20] Email July 8, 2019 from Agnoli Barber & Brundage confirmed that excavation and fill will be placed in SSA17.
[21] Rivergrass' Public Facilities Report, p. 3 of 12, 6-5-2019
[22] Passarella and Associates. Stewardship Sending Area 17 Application (January 2016).

In response to the design requirements provided in LDC 4.08.06.4.b, the applicant's consultant states the following in the Public Facilities Report:

> *"Several alterations to the WRA adjacent to the Village were proposed and approved by SFWMD with the Conceptual Approval Permit. Stormwater management/buffer lakes and their associated containment berms have been permitted in select locations in the existing WRA's. These modifications were confined to areas of the WRA that exhibited heavy exotic infestation and had no habitat function. All of these alterations have mitigation identified in the permit which will be made upon implementation of the impact."*[23]

Not only does the applicant fail to provide compensating mitigation for loss of panther habitat to SSA17 as the LDC requires, but the applicant incorrectly asserts that "confined areas of the WRA had no habitat function." **Figure 3** shows that all areas of SSA17, which is the WRA in question, are within Primary Zone panther habitat and the majority of SSA17 consists of Adult Breeding Habitat. Therefore, construction of the buffer lakes within SSA17 would directly impact those habitat areas. Not only should the applicant be prohibited from earning Stewardship Credits for impacting those areas, but no construction should occur at all within the important habitat areas of the endangered Florida panther.

Also, lands within SSA 17 (WRA) consist of high quality Cypress strands with a high natural resource value ranging between 1.7 and 2.6.[24] It is unclear how hydroperiods within the Shaggy Cypress system would be affected if the applicant is allowed to discharge stormwater from surrounding lakes into the wetland system.

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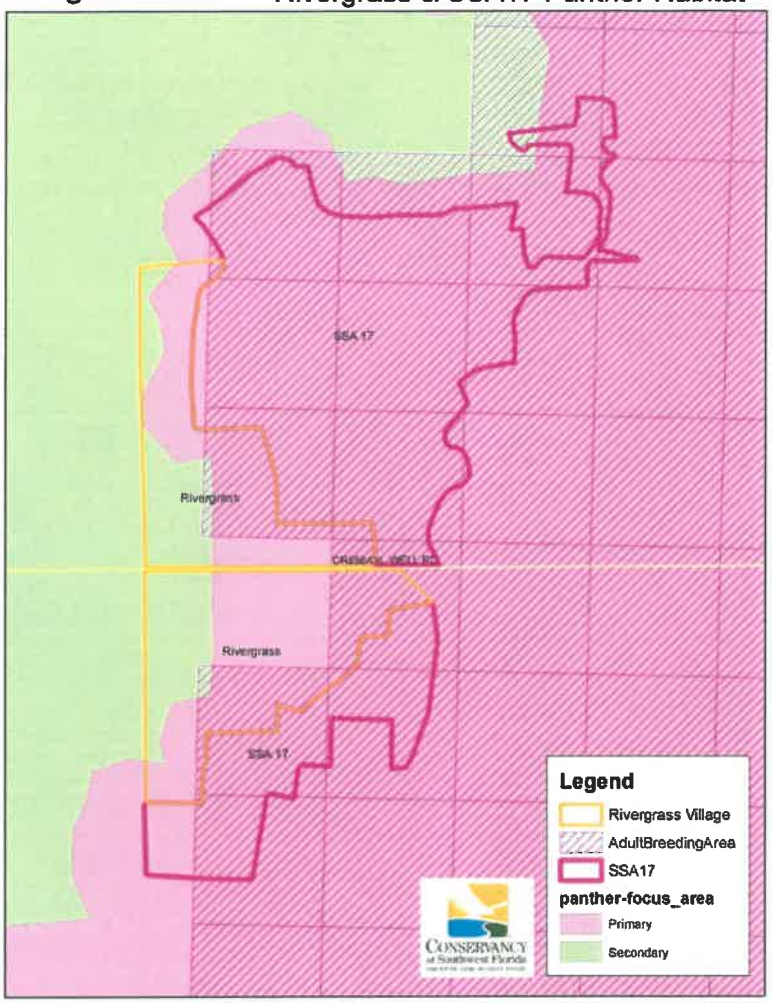
[23] Rivergrass SRA Public Facilities Impact Assessment 6-5-19, p. 3 of 12. (The consultant cites LDC Policy 4.08.04.A.4.b, but that policy does not exist. The correct policy that refers to impacts to WRAs is 4.08.06.A.4.b.

[24] Passarella and Associates. Stewardship Sending Area 17 Application (January 2016). 2015 NRI Scores, Exhibit 3-8.

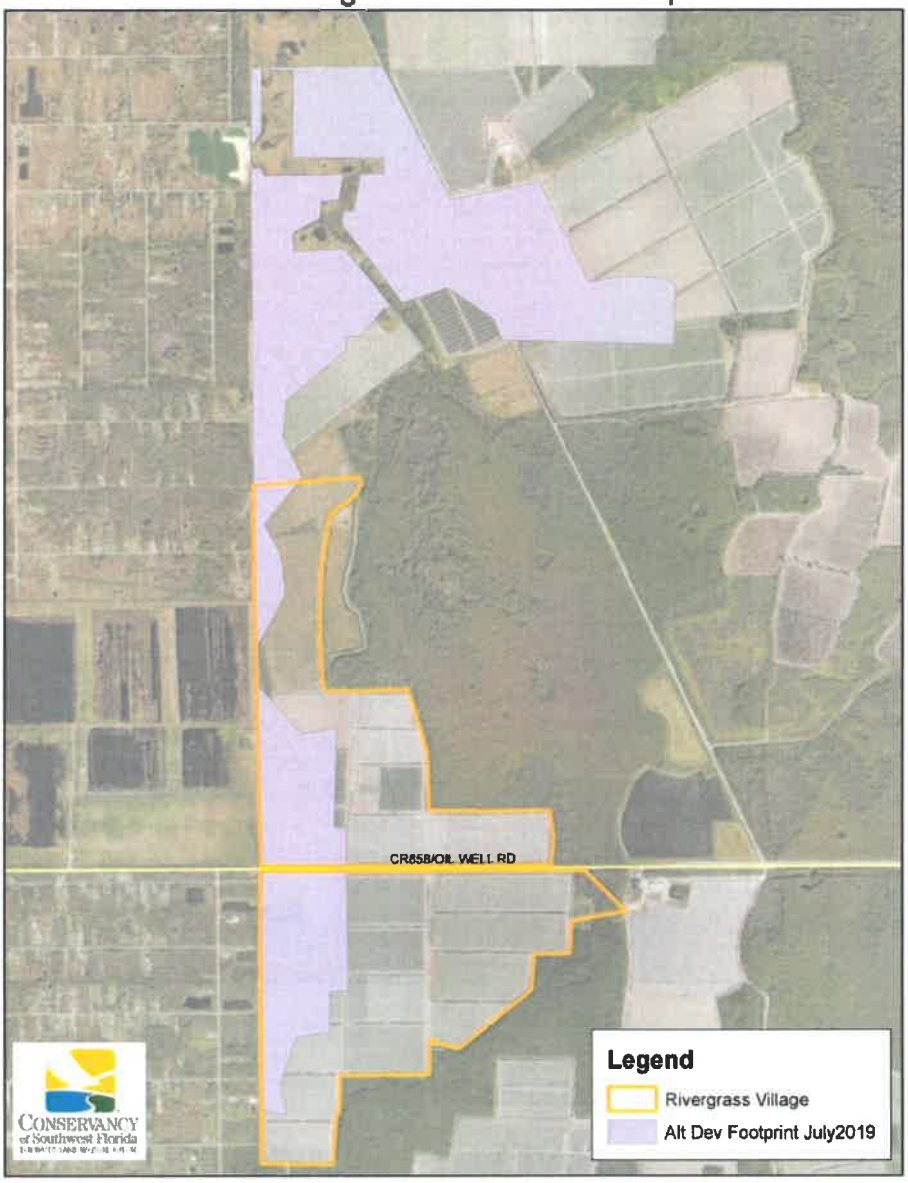
Figure 3 Rivergrass & SSA17 Panther Habitat



F. SOLUTION: Rivergrass Alternative Footprint

Impacts to essential panther habitat are both avoidable and unnecessary. The applicant has other options – by shifting the site plan north of the proposed Rivergrass site to other acreage owned by the same landowner, impacts to Primary Zone and Adult Breeding panther habitat could be avoided. The **Conservancy's Rivergrass Village Alternative Footprint Map (Figure 4)** provides an alternative site location which would protect 739 acres of primary zone habitat and 357 acres of adult breeding habitat, and is within acreage owned by the applicant. Although the alternative site is slightly smaller, by about 100 acres, the applicant could still build the same number of homes or even more. As currently planned, the SRA would average only 2.5 dwelling units per acre, which could easily be increased to four units per acre per the program. If so, the applicant could increase the total dwelling units from 2,500 to 3,600 homes and sell approximately 1,100 more homes.

Figure 4 Rivergrass Alternative Footprint - 900 acres



ISSUE 2

THE DESIGN OF RIVERGRASS VILLAGE IS CONTRARY TO THE OVERLAY'S DESIGN REQUIREMENTS FOR A COMPACT WALKABLE VILLAGE

One of the goals of the RLSA Overlay is to discourage urban sprawl. One of the primary methods in which the overlay achieves this objective is to require that all SRAs are designed to be compact, include mixed-use development, have an interconnected street system, and encourage pedestrian and bicycle circulation.[25] **Policy 1.2** of the RLSA Overlay states, "The Overlay protects natural resources and retains viable agriculture by promoting compact rural mixed-use development as an alternative to low-density single use development."

[25] Collier County FLUE RLSA Overlay Group 4 Policies and LDC 4.08.07.J(3) Village Design Criteria.

Policy 4.7.2 states, "Villages shall be designed to encourage pedestrian and bicycle circulation by including an interconnected sidewalk and pathway system serving all residential neighborhoods." Even though these are essential requirements of the program, the design of Rivergrass Village contradicts even these basic design principles of the program.

Rivergrass Village also contradicts fundamental design requirements provided in Collier County's Community Character Plan. The main objective of the county's community character plan is to stop the spread of low-density, gated PUDs, and cul-de-sac subdivisions which are ubiquitous and begin to build traditional neighborhood development consisting of walkable tree-lined streets, similar to what is found in downtown Naples. The authors of Collier County's Community Character Plan state:

> *"The most successful neighborhoods generally exhibit design conventions that are absent in conventional sprawl. These include: a legible center and edge to the neighborhood, an integrated network of walkable streets, an overall size to the neighborhood suitable for walking, buildings set close enough to the streets to spatially define the streets as public spaces, and opportunities for shopping and workplaces close to home."*[26]

Nonetheless, the design of Rivergrass Village lacks most of these design conventions that would counter sprawl. The following sections describe in greater detail how the design of the project contradicts both the RLSA program and the Community Character Plan.

A. The design of Rivergrass Village is dangerous for pedestrians and bicyclists

The Master Plan for Rivergrass Village shows that the village would be bisected by Oil Well Road with the Village Center located along the south side of Oil Well Road (shown in yellow in **Figure 7**). Oil Well Road is one of a few roads that are designated a "freight distribution route" by the Metropolitan Planning Organization.[27] Currently 800 trucks a day travel through Oil Well Road carrying petroleum, coal, mining materials, agricultural products, and Arthrex medical products.[28] Examples of other freight distribution routes include segments of SR29, US41, Collier Blvd (SR951 & CR951), Immokalee Road, Golden Gate Blvd, Pine Ridge Road, and Old 41.

The segment of Oil Well Road that would divide Rivergrass Village is located between Everglades Boulevard and Oil Well Grade Road. Currently that facility consists of two lanes and allows traffic to travel at 55-mph.[29] However, Collier County has definite plans to widen that section of Oil Well Road from two to six lanes.[30] That means pedestrians and bicyclists who reside north of Oil Well Road *must* cross the six lane freight road to get to the Village Center. Not only is it completely irresponsible to plan a village around a 6-lane freight distribution route as it poses extreme danger to pedestrians and bicyclists, but the design is completely contrary to several RLSA policies which require that SRAs are designed to facilitate safe travel for pedestrians and bicyclists. The following provides a list of policies within the LDC and Future Land Use Element (FLUE) that state SRAs must accommodate pedestrian and bicycle travel throughout the community:

(1) Village Design Criteria. General Criteria. *"Villages shall be designed in a compact, pedestrian-friendly form."* (LDC 4.08.07.J.3.a.ii);

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[26] Dover, Kohl & Partners for Collier County (2001, April) "Toward Better Places, The Community Character Plan for Collier County, Florida" p 2.6 https://www.colliercountyfl.gov/home/showdocument?id=72825

[27] Collier County MPO Technical Memorandum: Freight Congestion Considerations for the Collier 2040 Long Range Transportation Plan

[28] *Ibid.* p. 13 of 20

[29] Traffic Impact Statement for Rivergrass Village Stewardship Receiving Area, p 20. "The Oil Well Road from Desoto Boulevard to Oil Well Grade Road is currently a 2-lane undivided facility with a 55mph posted speed in the vicinity of proposed project."

[30] Attachment D of Collier County's 2019-2023 5-Year Work Program, p. 12 of 138; and Department of the Army- Jacksonville District Corp of Engineers Permit Application No. SAJ-2006-7018 (SP-GEC) (2019, July 2). Applicant: Collier County Board of Commissioners.

(2) Forms of SRA Developments. "*Villages are comprised of residential neighborhoods and shall include a mixed-use* ***village center*** *to serve as the focal point for the community's support services and facilities. Villages shall be designed to encourage pedestrian and bicycle circulation by including an interconnected* ***sidewalk*** *and* ***pathway*** *system serving all residential neighborhoods."* (LDC 4.08.07.C.2);

(3) Transportation Network. *"The transportation network shall provide for a high level of mobility for all residents through a design that respects the pedestrian and accommodates the automobile."*[31] (LDC4.08.07.J.3.b.i);

(4) *"Villages shall be designed to encourage pedestrian and bicycle circulation by including an interconnected sidewalk and pathway system serving all residential neighborhoods."* (RLSA Policy 4.7.2);

(5) *"To plan for, develop and operate a safe, efficient, and cost effective transportation system that provides for both the motorized and non-motorized movement of people and goods throughout Collier County."* (Goal of Transportation Element);

(6) *"Encourage safe and efficient mobility for the rural public that remains consistent with the character of the rural areas of Collier County."* (Objective 10 Transportation Element); and

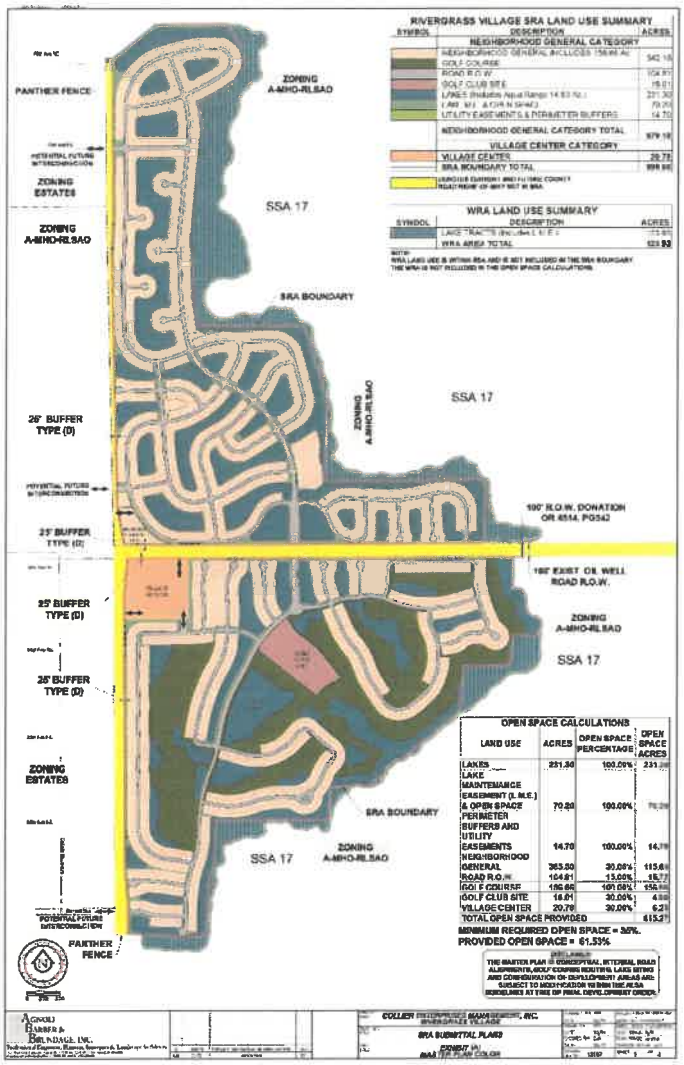
(7) *"Develop and adopt standards for safe and efficient ingress and egress to adjoining properties and encourage safe and convenient on-site traffic circulation through the development process."* (Objective 7 of Transportation Element).

To make matters worse, traffic volumes are expected to rise dramatically along Oil Well Road. The segment of Oil Well Road that is accessed directly by the project is located just east of Everglades Blvd, between DeSoto Blvd and Oil Well Grade Road. Currently, the peak direction/peak hour volume of traffic on Oil Well Road between Desoto Blvd and Oil Well Grade Rd is 350 cars.[32] According to the applicant's consultant, by 2030 that number will increase to 1,089 vehicles peak direction/peak hour volume (in the westbound direction).[33] This equates to an average of 18 cars per minute that will be passing by the Village Center just in the westbound direction during the peak hour of the day, making it even more difficult for residents who live north of Oil Well Road to get to the Village Center to buy groceries, do errands or get to work. As bad as those numbers sound, Collier County Transportation Reviewer stated in their review of Rivergrass that "the impact of the project's traffic on Oil Well Road is being underestimated/under-represented in the TIS [traffic impact statement]."[34] Staff further states that it appears that the portion of Oil Well Road between Desoto Blvd and the project entrance, "will operate at an unacceptable level of service in 2030 due to the project."[35]

[31] LDC 4.08.07.J.3.b states that the transportation network for a Village shall adhere to the same standards provided for within a Town).

[32] Traffic Impact Statement for Rivergrass Village Stewardship Receiving Area, p 12 . Table 4A Background Traffic without Project (2018-2013).
[33] Traffic Impact Statement for Rivergrass Village Stewardship Receiving Area, p 18, Table 6A Roadway Link Level of Service (LOS) – With Project in the Year 2030.
[34] Review Comments from Staff, July 8, 2019, RE: Stewardship Receiving Area Determination of Completeness, p. 11 of 20.
[35] Ibid. p. 11 of 20

Figure 7: Master Plan Rivergrass Village



Collier County staff seems to agree that the design poses safety risks to pedestrians. The transportation reviewer for the county stated (highlights added):

> *"The single interconnection proposed for the Village Center to the residential areas is not acceptable. Using Oil Well as an internal access road between your only commercial area and most of your residential areas/units is not acceptable. Better interconnection must be provided, or your internal capture needs to be greatly reduced. "This is also a safety concern due to high potential short trip use conflicts on a major arterial-freight roadway. This item is not sufficient."*[36]

Even though the applicant added one more connection to the future Big Cypress Parkway, there is still no safe connection for pedestrians and bicyclists coming from neighborhoods in upper half of the project. They must still cross a dangerous street to get to the Village Center.

[36]Submittal 2- Response Letter dated June 5, 2019. P. 12

B. <u>The design lacks rural to urban continuum</u>

A fundamental design requirement for both villages and towns within the RLSA is that development must be designed in a progressive rural to urban continuum where there is a gradient of densities. According to the RLSA the densities must be highest in the core and centers and gradually reduce to the lowest densities within the neighborhood edge. Dover Kohl, planners for the Community Character Plan calls this a "transect" **(Figure 6).**

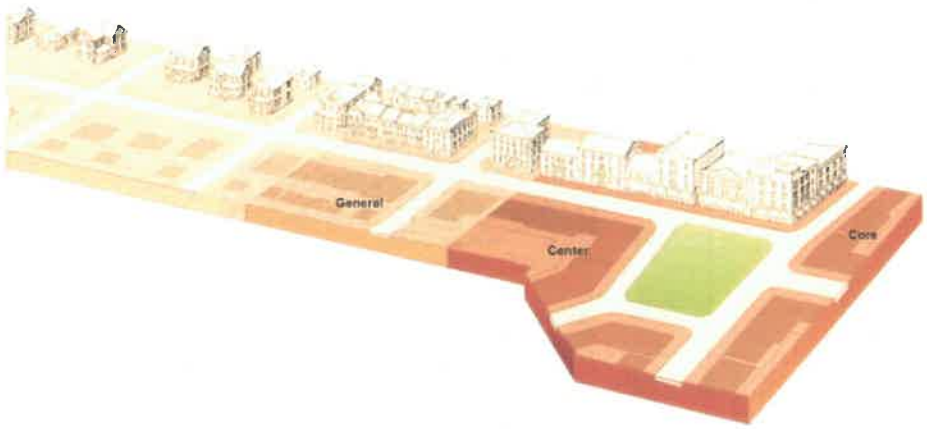


Figure 6: Gradient of densities (Transect). Source: Dover Kohl's *Toward Better Places: The Community Character Plan for Collier County Florida*

The following policies from the RLSA Overlay and the LDC require this type of design:

> *"The perimeter of each SRA shall be designed to provide a transition from higher density and intensity uses within the SRA to lower density and intensity uses on adjoining property. The edges of SRAs shall be well defined and designed to be compatible with the character of adjoining property. Techniques such as, but not limited to setbacks, landscape buffers, and recreation/open space placement may be used for this purpose. Where existing agricultural activity adjoins a SRA, the design of the SRA must take this activity into account to allow for the continuation of the agricultural activity and to minimize any conflict between agriculture and SRA uses."* (RLSA Policy 4.11); and
>
> Village Design Criteria. General Criteria: *"[Villages] Be developed in a progressive rural to urban continuum with the greatest **density** , intensity and diversity occurring within the **village center** , to the least **density** , intensity and diversity occurring within the Neighborhood Edge"* (LDC 4.08.07.J.3.a.v)

Even though the policies clearly state there must be a continuum of densities, the Master Concept Plan for Rivergrass Village provides ***no*** continuum of densities and ***no*** information regarding location of housing types. The plan only provides information that there will be two context zones (Neighborhood General and Mixed-Use Village Center)[37] and that the Neighborhood General south of Oil Well Road would be surrounded by an 18-hole golf course.[38]

Conservancy staff attended the June 6, 2019 Neighborhood Information Meeting (NIM) for Rivergrass Village. At the meeting the Conservancy staff asked the consultants for Rivergrass Village if their plan would include higher densities toward the town center and a variety of housing types that are walkable to the town center. The

[37] Rivergrass Village SRA Development Document (Submittal 2), p. 3
[38] Rivergrass SRA Submittal Plans Exhibit (A) Master Plan – Submittal 2 - May, 2019.

consultant for the applicant stated that they had not decided what types of housing and densities will be located and in which location. This is very concerning, because as previously stated a rural to urban continuum is a fundamental requirement of both RLSA policies and the Community Character Plan.

Rather than abiding by this fundamental design requirement for a continuum of densities within SRAs, the applicant requests a deviation from LDC 4.08.07.J.3.a.v (Deviation 7.1.1). The applicant's justification for the deviation is stated as follows:

> *"The Village Center is located in the middle of the development along Oil Well Road. Locating the Village Center at the intersection of Oil Well Road is the only location that makes sense to ensure a viable market condition for these uses. Easy access for nearby residents from the surrounding neighborhood and for pass-by traffic on Oil Well Road is critical."*[39]

The applicant's justification makes no sense. First of all, they provide no justification for failing to provide a continuum of densities within the SRA. Second, the applicant's argument that the village must be located on Oil Well Road to ensure marketability is not justified because Policy 4.2 states the following (highlights added):

> *"The Overlay requires SRAs to be compact, mixed-use and self-sufficient in the provision of services, facilities and infrastructure, traditional locational standards normally applied to determine development suitability are not relevant or applicable to SRAs."*

Therefore, the "need" to place the Village Center along a six-lane road due to marketability is not a valid excuse. As Policy 4.2 states "traditional locational standards" do not apply for SRAs.

Furthermore, the applicant's request for this deviation does not conform to the Overlay's "Request for Deviations Policy" (LDC 4.08.07.J.8), which states that requests for deviations ***must*** adhere to the following:

a. *"The deviations are consistent with the RLSA Overlay; and*
b. *It can be demonstrated that the proposed deviation(s) further enhance the tools, techniques and strategies based on principles of innovative planning and **development** strategies, as set forth in §§ 163.3177 (11), F.S."* (now 163.3248)

The applicant's request for the deviation is ***not*** consistent with the RLSA Overlay, as the policy requires, for the many reasons provided in the preceding sections. Also, the deviation fails to comply with the following section of Florida Statute§§ 163.3248, as the LDC requires: (highlights added):

> *"(5)(a) Criteria for the designation of receiving areas which shall, at a minimum, provide for the following: adequacy of suitable land to accommodate development so as to avoid conflict with significant environmentally sensitive areas, resources, and habitats; compatibility between and transition from higher density uses to lower intensity rural uses; and the establishment of receiving area service boundaries that provide for a transition from receiving areas and other land uses within the rural land stewardship area through limitations on the extension of services.*[40]

Another example of how Deviation 7.1.1 fails to comply with Florida Statute§§ 163.3248 is provided in provision (5)(d) that states:

> *"The plan amendment or amendments designating a rural land stewardship area are subject to review pursuant to s. 163.3184 and shall provide for the following: (5)(d) A mix of densities and intensities that would not be characterized as urban sprawl through the use of innovative strategies and creative land use techniques."*

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[39] Rivergrass Village SRA Deviations and Justifications Submittal 2
[40] Florida Statute §§ 163.3248

Finally, the plan exhibits several primary indicators of the proliferation of sprawl as listed in Florida Statute §§163.3177 including the following:

1. *"Promotes, allows, or designates for development substantial areas of the jurisdiction to develop as low-intensity, low-density, or single-use development or uses"*;
2. *"Fails to provide a clear separation between rural and urban uses"*; and
3. *"Results in poor accessibility among linked or related land uses."*[41]

Therefore, it is unquestionable that Deviation 7.1.1 ***must*** be denied.

C. Rivergrass Village Mobility Plan fails to achieve compliance with RLSA policies

The RLSA program requires that all SRAs include an interconnected street system consisting of short walkable blocks, ample sidewalks and pathways, and limited cul-de-sacs. The program's requirement for a well-connected street system is important for several reasons. First, as Dover Kohl argues, a well-connected street system "spreads traffic over an immense mileage of streets."[42] Therefore, there are multiple traffic routes to daily destinations such as to work, shopping, restaurants, and schools. This alleviates traffic congestion that seems to be worsening in Collier County. Second, "a well-connected network of local streets is one of the most effective measures that can be taken to accommodate travel by walking, bicycling, and transit."[43]

Below are some of the numerous policies within the RLSA Overlay, LDC and FLUE that illustrate this requirement for a highly interconnected street system, which includes sidewalks and paths (highlights added):

> *(1) "Villages are primarily residential communities with a diversity of housing types and mix of uses appropriate to the scale and character of the particular village. Villages shall be not less than 100 acres or more than 1,000 acres. Villages are comprised of residential neighborhoods and shall include a mixed-use village center to serve as the focal point for the community's support services and facilities. **Villages shall be designed to encourage pedestrian and bicycle circulation by including an interconnected sidewalk and pathway system serving all residential neighborhoods. Villages shall have** parks or public green spaces within neighborhoods. Villages shall include neighborhood scaled retail and office uses, in a ratio as provided in Policy 4.15. Villages are an appropriate location for a full range of schools. To the extent possible, schools and parks shall be located adjacent to each other to allow for the sharing of recreational facilities. Design criteria for Villages shall be included in the LDC Stewardship District."* (RLSA Policy 4.7.2)
>
> (2) Village Design Criteria. General Criteria. *"Villages shall be designed in a compact, pedestrian-friendly form."* (LDC 4.08.07.J.3.a.ii)
>
> (3) Village Design Criteria. General Criteria. *"Create an interconnected **street** system designed to disperse and reduce the length of automobile trips."* (LDC 4.08.07.J.3.a.iii)
>
> (4) Transportation Network. *"The transportation network shall be designed in an interconnected system of **streets, sidewalks**, and **pathways.**"* (LDC 4.08.07.J.3.b)
>
> (5) Village Characteristics Table B. Transportation. Required Uses. *"Auto - interconnected system of collector and local roads; required connection to collector or arterial."* And *"Interconnected sidewalk and pathway system."* (LDC 4.08.07J.1.a)

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[41] Florida Statute §§ 163.3177
[42] Dover, Kohl & Partners for Collier County (2001, April) "Toward Better Places, The Community Character Plan for Collier County, Florida" p 3.9
[43] *Ibid.*

(6) The County shall encourage developers and property owners to connect their properties to fronting collector and arterial roads, except where no such connection can be made without violating intersection spacing requirements of the Land Development Code." (Smart Growth Policy 7.1)

(7) *"All new and existing developments shall be encouraged to connect their local streets and/or interconnection points with adjoining neighborhoods or other developments regardless of land use type. The interconnection of local streets between developments is also addressed in Policy 9.3 of the Transportation Element."* (Smart Growth Policy 7.3)

(8) *"The County shall encourage new developments to provide walkable communities with a blend of densities, common open spaces, civic facilities and a range of housing prices and types."* (Smart Growth Policy 7.4)

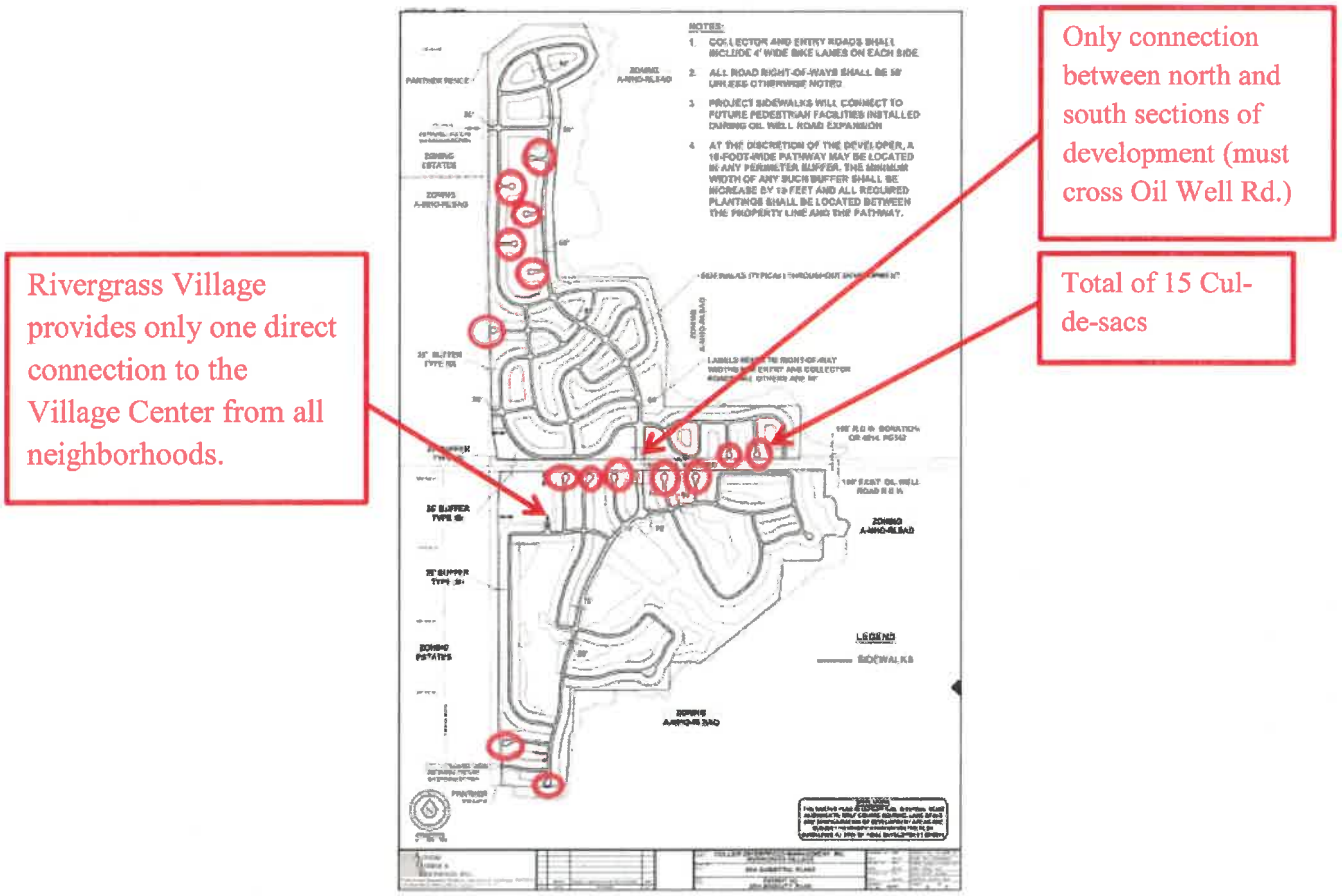
(9) *"The County shall require, wherever feasible, the interconnection of local streets between developments to facilitate convenient movement throughout the road network. The LDC shall identify the circumstances and conditions that would require the interconnection of neighboring developments, and shall also develop standards and criteria for the safe interconnection of such local streets."* (Transportation Element Policy 9.3)

When comparing Rivergrass' Mobility Plan to a street network in downtown Naples, it becomes abundantly clear that Rivergrass does not meet the standards of the RLSA program. **Figure 8** shows an aerial photo of a well-connected street network in downtown Naples that offers a variety of traffic routes.

Figure 8: Naples, Florida. Example well-connect street network

However, when we look at plans for Rivergrass Village we see a very different street pattern consisting of fifteen dead-end cul-de-sacs and only ***one*** connection to the Village Center from all of the "Neighborhood General" areas (**Figure 9**). Furthermore, the project spans two and half miles, yet offers only one potential connection between neighborhoods north and south of Oil Well Road.

Figure 9: Rivergrass Village Mobility Plan



Bicycle and pedestrian circulation throughout the development would be difficult for a few reasons. First, the bicycle paths and sidewalks are not well connected in many places as there are multiple dead-end cul-de-sacs. Second, as mentioned previously, the development would be severed by Oil Well Road, making pedestrian and bicycle travel between the two halves difficult and dangerous.

County staff seems to agree that Rivergrass does not offer enough connections. In their response letter dated March 8, 2019, they state:

> *"The single interconnection proposed for the Village Center to the residential areas is not acceptable. Using Oil Well as an internal access road between your only commercial area and most of your residential areas/units is not acceptable. Better interconnection must be provided or your internal caputure needs to be reduced."*[44]

And from the Review Comment Letter dated July 8, 2019:[45]

> *"Please show additional interconnections with your proposed Village Center and your residential developments. A single access internal is not adequate, as noted above."*

And another comment from staff supports our point that Rivergrass' mobility plan is inadequate:

> *"Reference, Exhibit A, Mobility Plan. SRA's are required as part of the transportation network... '...shall provide a high level of mobility for all residents through a design that respects the pedestrian and accommodates the automobile...shall be designed in an*

[44] Collier County Review comment letter re: Stewardship Receiving Area Determination of Completeness Rivergrass Village SRA (March 8, 2019).
[45] Collier County Review comment letter re: Stewardship Receiving Area Determination of Completeness Rivergrass Village SRA (July 8, 2019).

> *interconnection system of streets, sidewalks, and pathways.' It is not clear how a standardized series of roads, sidewalks, and the single proposed CAT bus stop meets this "high level of mobility." Again, perhaps staff simply does not understand the intent or higher level of interconnection proposed...however, Oil Well Road does present a challenge as noted above regarding access to the Village Center. Also, demonstrate how the proposed layout currently is consistent with Community Character Mobility recommendations, including but not limited to connected neighborhoods and roadway networks. See additional comments regarding walkability, interconnections, and walkability."*[46]

This final comment from staff's review letter also supports our point that the project lacks a connected street network:

> *"There appear to be 3 potential interconnections, all located along the eastern edge of the development, and none appear to actually connect with your proposed internal road system. Additionally, there are no provisions to provide additional interconnection opportunities along any of the other three sides of the development. There are abundant undeveloped parcels surrounding this development. The SRA provisions of the LDC require that this development address effects of new roadway facilities planned as part of the SRA Master Plan on the surrounding transportation system."*[47]

In fact, the applicant has requested a deviation from LDC 6.06.01.J to allow cul-de-sacs to exceed the 1,000 feet maximum to extend up to 1,200 feet in length (Deviation 7.3.1). This deviation should be denied not only to deter the use of cul-de-sacs as they impede the flow of traffic and connectivity, but because the 1,000 foot length is already too long to promote walkability. Florida Department of Transportation (FDOT) recommends that block lenghts should not exceed 600 feet in order to be considered easy walking environments.[48]

For the many reasons stated above, Rivergrass' mobility plan is blatantly inconsistent with RLSA policies and the Community Character Plan, thus the application should be denied.

D. The Plan Needlessly Converts Agricultural Lands to Golf Courses

In addition to protection of listed species and their habitat, the RLSA Overlay goal also aims to prevent the "premature conversion of agricultural land to non-agricultural uses" because agricultural lands are being converted to development in Florida and Collier County at alarming rates. The RLSA White Paper states that farmland in Collier County has decreased 46% in just 10 years from 2002 to 2012.[49] Loss of farmland is not just a local issue. The Florida 2070 Report shows that if development trends in Florida continue on the same path of low-density sprawl development, Florida will lose 5.37 million acres of natural and working lands by 2070.[50] That is an average loss of 10 acres of natural and working lands lost to development an hour![51]

Although the RLSA program allows golf courses, the county should rethink its position on this. Agriculture is integral to Collier County's economy. Agriculture provides a $4 billion economic impact per year to Collier

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[46] Collier County Review comment letter re: Stewardship Receiving Area Determination of Completeness Rivergrass Village SRA (July 8, 2019).
[47] *Ibid.* p. 4
[48] State of Florida Department of Transportation office of Roadway Design (2011). "Traditional Neighborhood Development Handbook". p. 14
[49] Collier County (2019, May 21). Rural Lands Stewardship Area Overlay Restudy White Paper. Prepared by the Growth Management Department, Community Planning Staff. p. 37 of 89.
[50] Thousand Friends of Florida. (2016, November) Mapping Florida's Future – Alternative Patterns of Development in 2070, p 6. http://1000friendsofflorida.org/florida2070/wp-content/uploads/2016/09/florida2070summaryfinal.pdf
[51] *Ibid.* (2070 trend of development minus 2010 baseline year shows increase of 5.37 million acres developed. 5.37M / 60 years / 365 / 24 = 10.2 acres per hour. p. 6 of 18.)

County.[52] In addition to contributing to the local economy, farmlands are important for providing long term food security for the region, employment, water recharge, flood risk reduction, and habitat connections. Once farmlands are converted to homes, business, and roads they are gone forever.

Unfortunately, the applicant for Rivergrass Village does not consider the importance of farm lands as they propose to needlessly convert approximately 150 acres of agricultural lands to golf course acreage.[53] Not only is this a waste of agricultural lands but it is a waste of essential habitat for the Florida panther. With over 75 golf courses in Collier County[54] and Ave Maria's public golf course only a little over two miles away, there is no need for another golf course at Rivergrass Village. Not only is there a sufficient supply of golf courses in the county, but data suggests golf memberships are declining.[55]

To make matters worse, even though the development would convert over 150 acres of agricultural lands and listed species habitat to golf courses, the applicant is not required to apply Stewardship Credits toward the golf course acreage. That is because Policy 4.10 of the Overlay states that any open space within an SRA which exceeds 35% "shall not be required to consume credits."[56] The golf course for Rivergrass Village is acreage above and beyond the 35% requirement.[57] This is an unfortunate policy because the applicant is not required to apply Stewardship credits toward the golf course acreage even though conversion to the golf course will destroy Primary Zone habitat and Adult Breeding Habitat of the endangered Florida panther and the lands will be taken out of agricultural production.

Conclusion

The Conservancy of Southwest Florida urges you to recommend denial of the SRA Application for Rivergrass Village as the project contradicts the fundamental goals of the RLSA Overlay to protect listed species habitat and to prevent sprawl. The proposed location of the development within 700 acres of essential habitat for the endangered Florida panther flies in the face of responsible environmental and rural land stewardship. Moreover, the design of the project—bisected by a 6 lane arterial-freight roadway—not only poses grave dangers to pedestrians and bicyclists, but defies smart growth design principles which are a fundamental element of the overlay. If approved, the project will set a precedent that low-density sprawling golf course communities located within listed species habitat are business-as-usual in the RLSA.

We urge you to require the applicant go back to the drawing board to drastically modify the development footprint and the design of the project in order to uphold the principles of the Overlay. If you have any questions or if you would like to discuss these matters further, you may reach me at (239) 262-0304, Ext 250 or AprilO@Conservancy.org.

Sincerely,

April Olson
Senior Environmental Planning Specialist

[52] Collier County (2019, May 21). Rural Lands Stewardship Area Overlay Restudy White Paper. Prepared by the Growth Management Department, Community Planning Staff. (Quote from 2015 UF/IFAS study by Alan W. Hodges) p. 37 of 89.
[53] Rivergrass SRA Submittal Plans Exhibit (A) Master Plan – Submittal 2 - May, 2019. (Total Golf Course Acreage within Rivergrass = 156.66)
[54] Collier County (2016). Collier County Golf Courses. Accessed July 10, 2019: https://www.colliercountyfl.gov/home/showdocument?id=70243
[55] Eidukot, John (2018, July). Golf Operator Magazine. "The Decline of Golf in 2018 – The Perfect Storm for Most Golf Clubs."
[56] Collier County Future Land Use Element (FLUE) as of Ordinance No. 2017-48.
[57] Rivergrass Village SRA Development Document (Submittal 2), p. 3 provides open space calculations.

Assessing the Value of Current Movement Pathways of Florida Panthers that Intersect Keri and Corkscrew Roads: Identifying Location and Need for Safe Crossing Measures

Final Report

Presented to –

Florida Wildlife Federation

Principal Investigator –

Daniel J. Smith, Ph.D., A.I.C.P.
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June 30, 2019
July 22, 2019 (revised)
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Sponsoring Organization

Florida Wildlife Federation
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Project Supporters

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EXECUTIVE SUMMARY

This study examined movement patterns and potential road crossing locations of Florida panthers and other wildlife on two county roads that subdivide important panther habitat areas and exhibit multiple panther-vehicle collisions, Keri Road (Hendry County Road 832) and Corkscrew Road (Collier/Lee County Road 850). The objectives of the study were to: 1) evaluate the importance of local movement pathways within key panther habitat areas, their deficiencies and road conflicts, and, 2) identify specific need for safe road-crossing measures and provide recommendations to improve habitat connectivity and reduce panther-vehicle conflicts.

Keri Road essentially divides the Okaloacoochee Slough State Forest into two separate habitat areas and accommodates about 450 vehicles per day. Seven panthers have died from vehicle collisions since 2004. Corkscrew Road passes through two distinct study areas characterized by public conservation lands on one side of the road and commercial agriculture and rural residential on the opposite side of the road. Traffic ranges from 4,400 to 7,800 vehicles per day. Five panther deaths have occurred on Corkscrew Road since 2009.

We deployed a total of 99 cameras along 29 road segments on Keri and Corkscrew roads. We recorded a total of 6,199 and 2,259 photo events of wildlife adjacent to Keri and Corkscrew roads, respectively between December 2017 and May 2019. Photo event count data (for target species: FL panther, black bear, bobcat, and whitetail deer) were assessed using R by fitting an N- mixture model using the package “unmarked” which fits hierarchical models to models of measures of wildlife occurrence and abundance. The number of active camera days at each site was a significant factor in the detection process and affected relative abundance estimates. Eight state process covariates (4 numerical and 4 categorical) were also evaluated.

The road segments on Keri Road where the target species were most abundant (in relative terms only) as measured by Bayesian posterior abundance estimates differed; abundance estimates for FL panthers and bobcats were highest in road segments 1, 4 and 9, black bear abundance was greatest in road segments 0, 1 and 4, while estimates for whitetail deer were highest in road segments 2, 3, and 10.

On Corkscrew Road, the top two measures of relative abundance for panthers and bobcats were both associated with road segments 11 and 14. Black bears were highest in road segment 14. Deer were most abundant in road segments 9, 10 and 12.

Recommendations regarding need and type of mitigation to address wildlife-vehicle conflicts were discussed for each individual road segment for both Keri and Corkscrew roads. Types of mitigation discussed included lighted warning signage, enhanced speed enforcement, wildlife fencing, “crosswalk” animal detection/warning systems and wildlife underpasses.

INTRODUCTION

Roads are one of the greatest threats to wildlife worldwide (van der Ree et al. 2015, Trombulak and Frissell 2000). Wildlife crossing structures are needed at carefully selected locations along roads in order to allow wildlife to successfully cross highways and maintain connectivity and gene flow within and among populations (Forman et al. 2003). Several studies have discussed methods for determining appropriate locations for crossing structures. For example, GIS-based habitat models and least-cost path analysis for species of interest, data on roadkill locations, radio telemetry, remote camera imagery, known migratory paths of animals, and animal signs such as tracks, can identify suitable sites for highway crossing structures (Smith et al. 2015, Smith and van der Ree 2015, Clevenger et al. 2002/2003, Henke et al. 2002, Lyren and Crooks 2002, Foster and Humphrey 1995). Decisions regarding the correct placement of crossing structures benefits from data on unsuccessful crossing locations (i.e., roadkills), but whenever possible should be combined with data on successful crossing locations (i.e., from radio-tracking and camera traps or tracking stations) and a broader look at the landscape context of the crossing, including the adjacent topography, vegetation, and land use. Concentrations of roadkills represent unsuccessful crossings, however, it may also represent areas where many individuals are also crossing successfully.

While many Florida panther road crossing locations in southwest Florida have been retrofitted with crossing structures to provide safe passage, many secondary roads are yet to be addressed. A previous study (Smith et al. 2006) conducted for the Florida Wildlife Federation identified additional needs on several county roads in NW Collier County, some of which have subsequently been mitigated. Several other roads in Hendry and Lee Counties also warrant such examination based on the number of road-kills, telemetry data, proximity to public conservation lands, and/or within an identified panther movement corridor. The following study examined movement patterns and potential road crossing locations of panthers and other wildlife on two county roads that subdivide important panther habitat areas and exhibit multiple panther-vehicle collisions, Keri Road (Hendry County Road 832) and Corkscrew Road (Collier/Lee County Road 850).

Study Objectives:

1) To evaluate the importance of local movement pathways within key panther habitat areas, their deficiencies and road conflicts, and
2) To identify specific need for safe road-crossing measures and provide recommendations to improve habitat connectivity/reduce panther-vehicle conflicts.

Study Areas:

Keri Road, Hendry County. Keri Road (County Road 832) essentially divides the Okaloacoochee Slough State Forest (OKSSF)(32,370 ac) into two separate habitat areas (fig. 1). Traffic volume is on avg 450 vehicle per day (FDOT Traffic Online 2019), but traffic speed on this rural road often exceeds its posted limit of 55 mph. Eight panther-vehicle collisions (7 since 2004) have resulted from high speed and other contributing factors to present a significant risk to panthers and other wildlife that regularly cross this road.

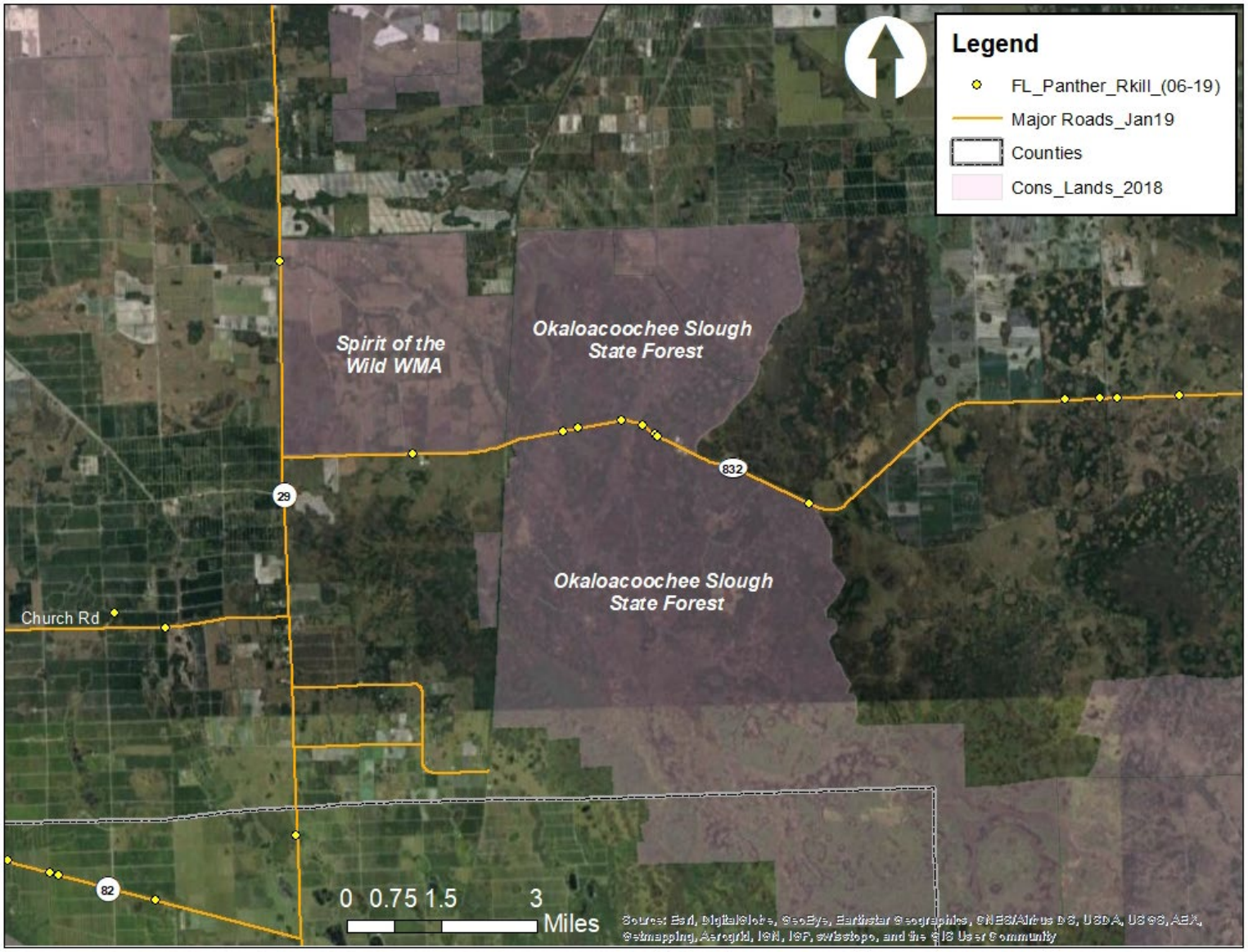

Figure 1. Keri Road (Hendry County Road 832) study area through the Okaloacoochee Slough State Forest. Florida panther road mortality locations are shown in yellow.

Adjacent to OKSSF is the 7,646 ac Spirit of the Wild WMA (SW). The OKSSF/SW conservation area is primary habitat for Florida panther and other wildlife and is a major stepping-stone for panthers to expand their range from the core of Big Cypress National Preserve (BCNP)/Florida Panther National Wildlife Refuge (FPNWR) to other substantially large conservation areas north of the Caloosahatchee River. This is illustrated in fig. 2 that shows general spatial patterns from panther telemetry- and road mortality- composite data since the mid-90s.

Land use in the study area is mostly for conservation and agriculture. The few buildings present in the area along Keri Road serve as work facilities or on-site housing for conservation land management and large cattle ranch operations. Land cover for OKSSF, SW and the Alico Ranch consists of a diverse mosaic of habitat types (fig. 3). Most commonly used land cover types were forested uplands and wetlands, followed by dry prairie and successional shrub-brush lands and semi-natural pasture areas. Common pathways used by panthers in this landscape appear to be in forested habitats along the margins of open marsh and slough habitats.

Corkscrew Road, Collier and Lee Counties. Corkscrew Road (County Road 850) passes through two distinct study areas in eastern Lee/NW Collier counties. The Lee County section is oriented from east to west and ends where it intersects Alico Road, and the Collier County section is oriented south to north terminating at State Road 82 (fig. 4). Traffic volume for the Lee County section is on avg 7,800 vehicles per day, while the Collier County section exhibits about 4,400 vehicle per day (FDOT Traffic Online 2019). Like Keri Road, traffic speed often exceeds the 55/45 mph (day/night) posted limit. These are contributing factors resulting in six panther-vehicle collisions (5 since 2009) on the Collier County section. In Lee County, two panther deaths occurred in 2006-07 near the current wildlife underpass prior to the extension of the wildlife fencing that leads to the crossing structure. High-volume, fast-moving traffic presents a significant risk to panthers and other wildlife that attempt to cross this road.

To the south and along the eastern boundary of Corkscrew Road, the Corkscrew Regional Ecosystem Watershed (CREW) and the Corkscrew Swamp Sanctuary represent the largest conservation areas in this study area, 28,175 ac and 13,440 ac, respectively (fig 4). Several other smaller conservation lands, mitigation banks and easements are located along the Lee County section of Corkscrew Road (fig. 5). This area is designated by Lee County as the Density Reduction/Groundwater Resource Area, a special planning district established to protect groundwater and address surface water storage needs.

Development proposals within the area that included creation of conservation linkages connecting the Airport/Corkscrew Mitigation Banks and Corkscrew Swamp Sanctuary (see fig. 5) were a driving factor for inclusion of this location in the panther movement/road crossing study. Panther movements and area usage in reference to these conservation areas is provided in fig. 6. The greatest concentration of panther telemetry positions is within the major protected conservation areas including the linkage across Corkscrew Road where the existing wildlife underpass is located.

Land cover consisted of a complex arrangement of habitat types and land uses (fig. 7). Land use in the study area is primarily a mix of conservation, agriculture, mining and low-density

residential and rural development. Most commonly used land cover types by panthers were forested uplands and wetlands, followed by successional shrub-brush lands and semi-natural pasture areas. Most of the agriculture along Corkscrew Road consists of citrus groves—these were used with less frequency by collared panthers.

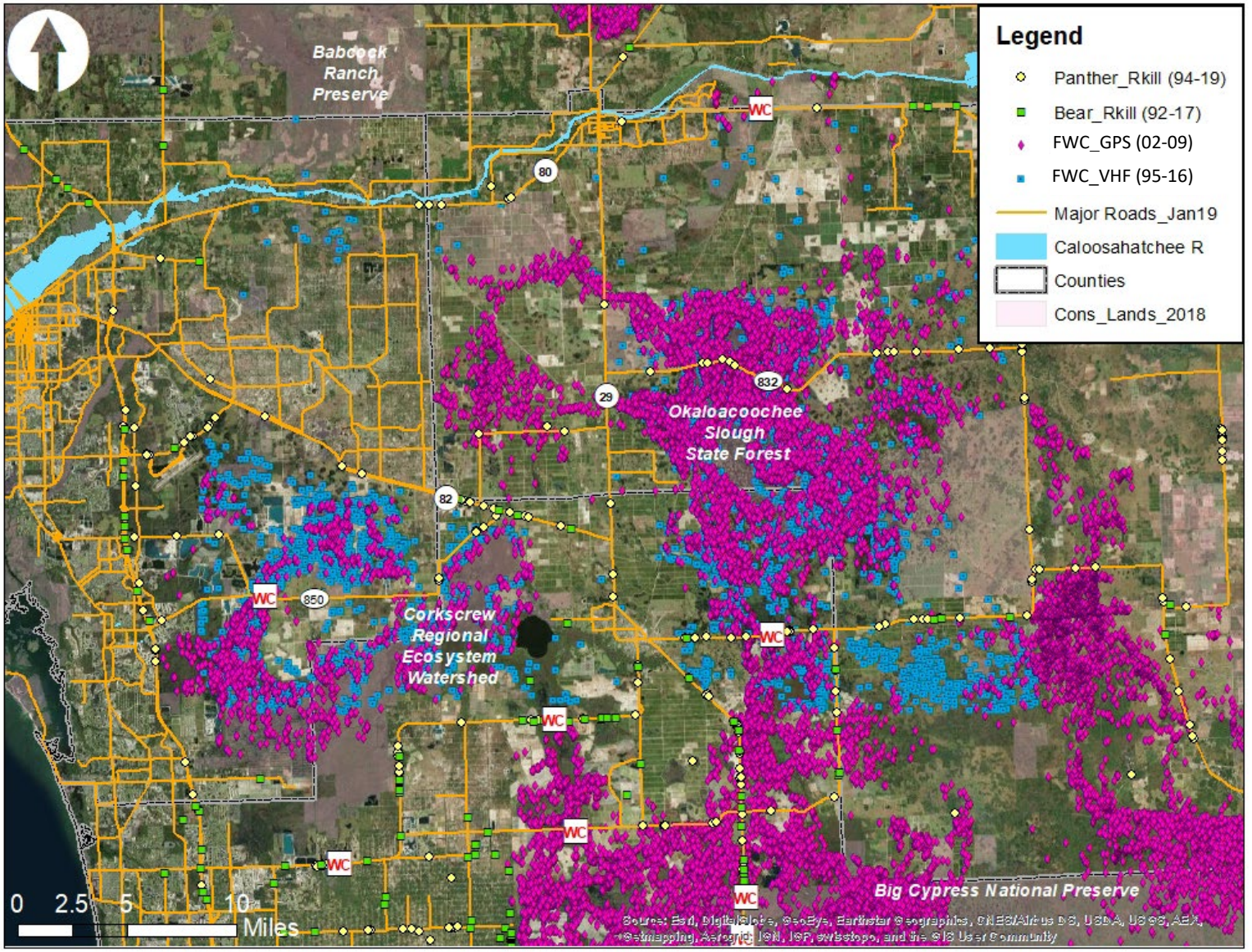

Figure 2. Telemetry concentrations and road mortalities of Florida panthers between Big Cypress National Preserve and the Caloosahatchee River (panther and bear location data provided by FWC). Constructed wildlife crossings are designated by WC.

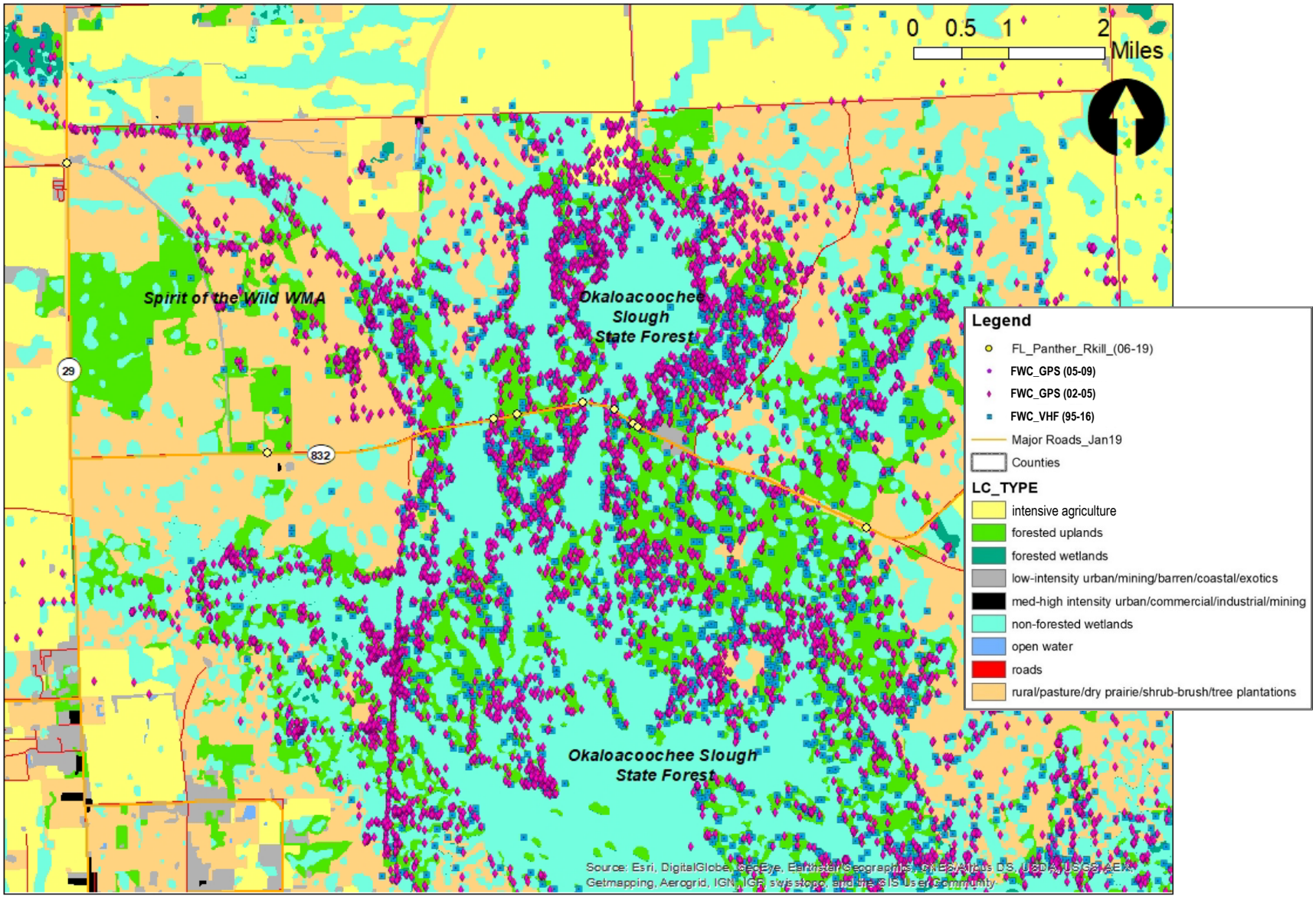

Figure 3. Land cover for the Keri Road (OKSSF/SW) study area (data: FWC 2018). For display purposes, land cover was condensed into 9 basic categories. Panther telemetry and roadkill locations are overlaid to illustrate relative use of different habitat types.

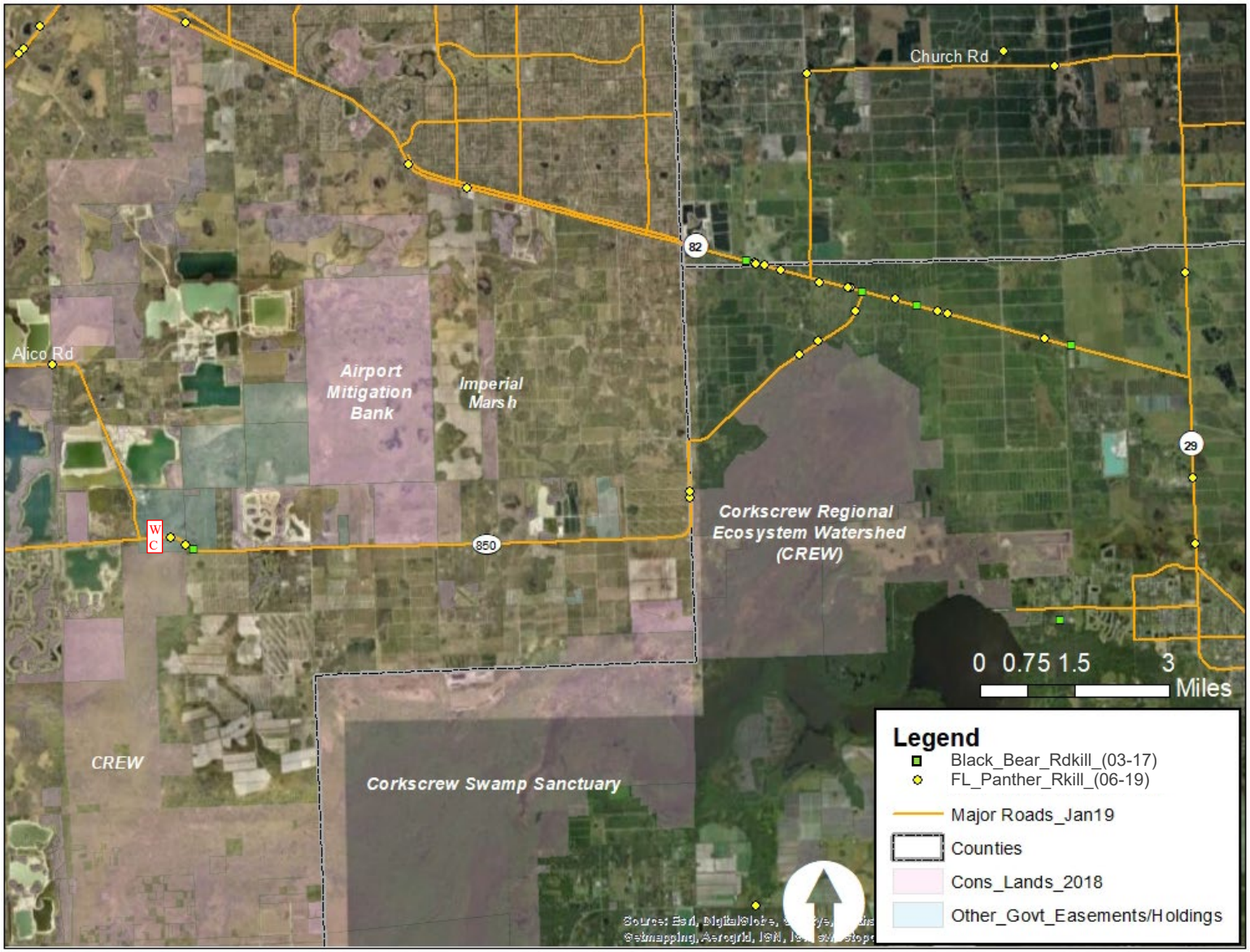

Figure 4. Corkscrew Road (Road 850) study area through the Corkscrew Regional Ecosystem Watershed. Florida panther and black bear road mortality locations are shown in yellow and green, respectively. The "WC" symbol represents a wildlife underpass.

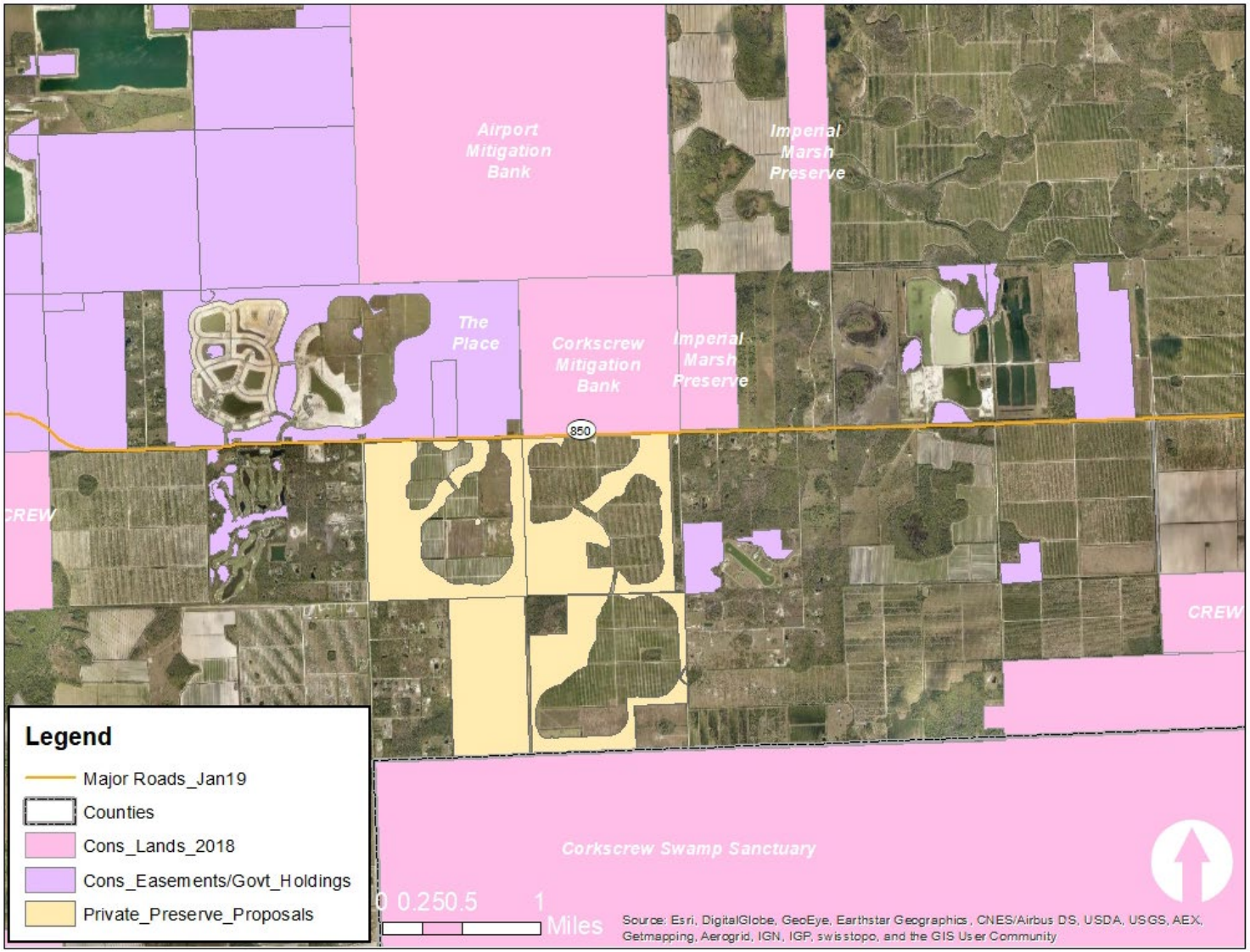

Figure 5. Public and private conservation lands along the east-west segment of Corkscrew Road. Included among the areas highlighted are conservation easements created as part of development and mining permits. Other local government land holdings are also shown. Noteworthy, is a network of conservation linkages (in yellow) planned as part of two development proposals that would connect the conservation areas north of Corkscrew Road to the Corkscrew Swamp Sanctuary to the south.

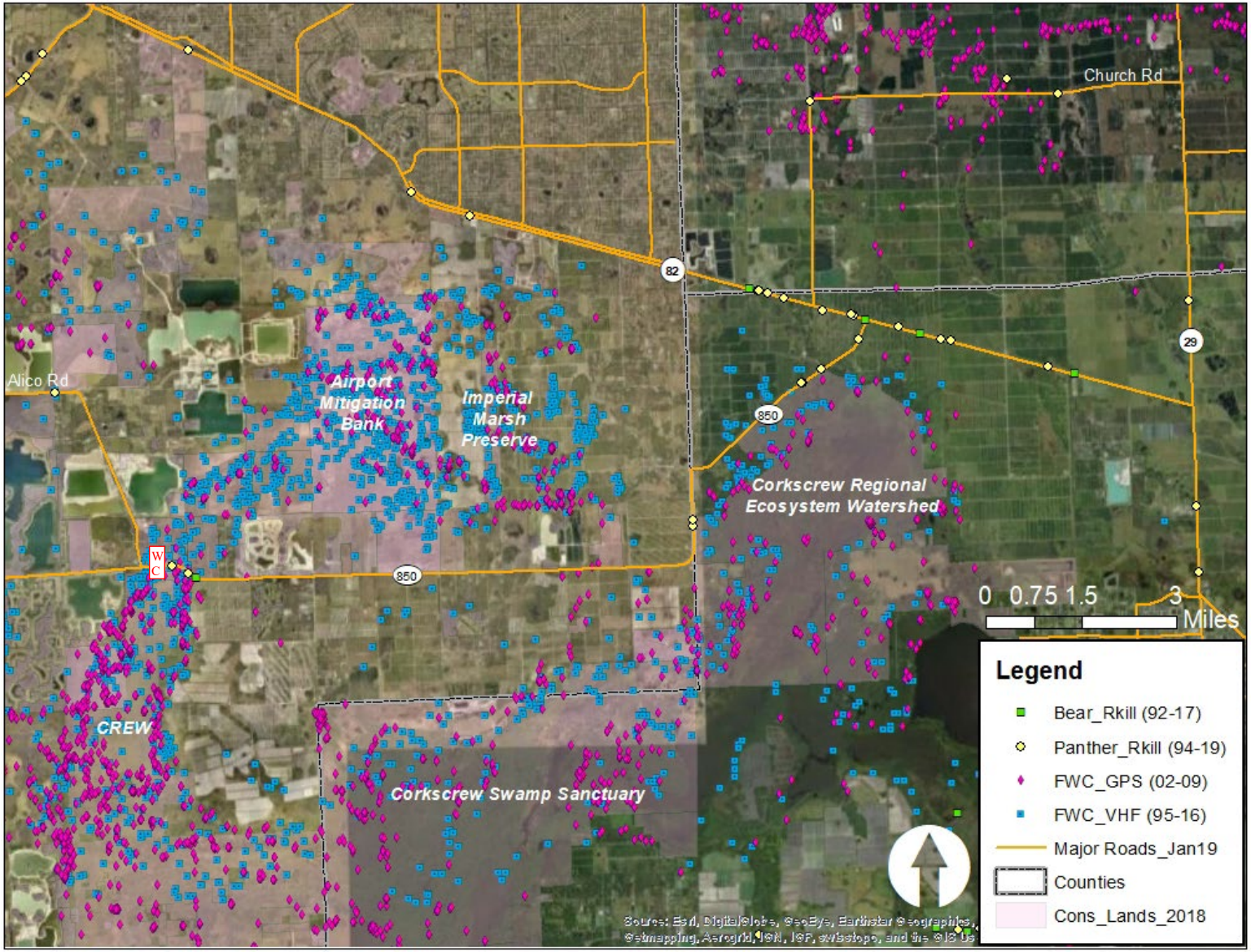

Figure 6. Telemetry concentrations and road mortalities of Florida panthers within the Corkscrew Regional Ecosystem Watershed (panther and bear location data provided by FWC). Constructed wildlife crossings are designated by WC.

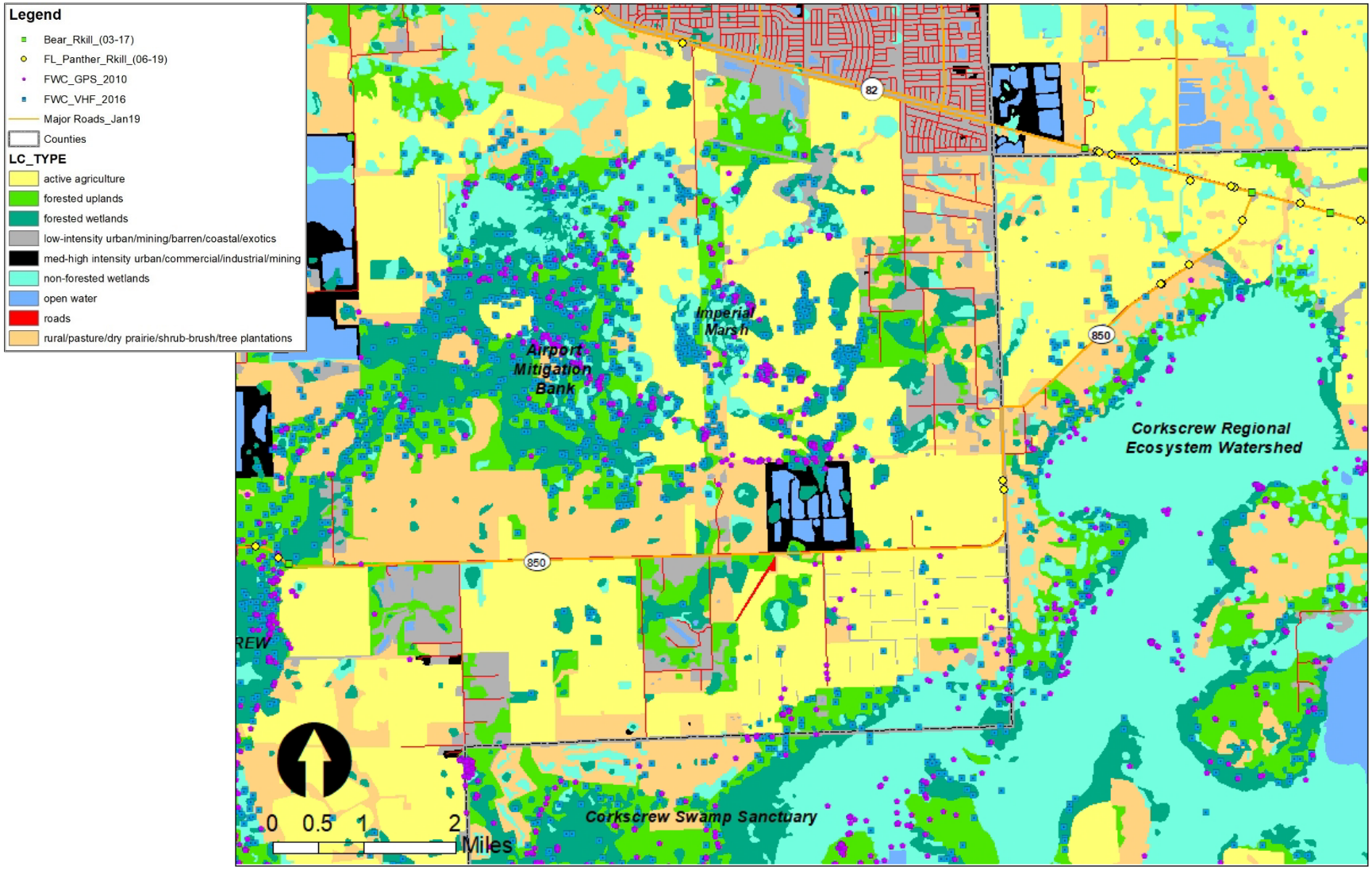

Figure 7. Land cover for the Corkscrew Road study area (data: FWC 2018). For display purposes, land cover was condensed into 9 basic categories. Panther telemetry and roadkill locations are overlaid to illustrate relative use of different habitat types.

METHODS

Field Activities:

We used camera trap arrays to capture panther activity along Keri and Corkscrew Roads in the general study areas (see figs. 1 and 4). To identify candidate monitoring locations for the cameras we used two methods, GIS analysis and field reconnaissance.

First, we created overlays of panther roadkill and telemetry locations, conservation lands and easements and land cover (focused primarily on preferred land cover types by panthers). From this data we identified generalized road segments where panthers either already cross or most likely would cross over the road. Figures 8 and 9 display the locations of initial road segments identified for placement of camera trap arrays.

Second, we performed field surveys of each of these road segments by either driving < 5 mph or walking along the road shoulders to identify and record the location of any large animal trails through the tall grass and roadside brush. In many cases there were existing recreational trails, maintenance roads and firebreaks associated with potential road crossing sites. Side access roads also provided select opportunities for animals to easily and safely cross over roadside drainage channels and swales.

A thorough evaluation was performed at each road segment to identify the location and number of wildlife movement pathways leading to/from the road. This was necessary to determine number of cameras required and optimum camera placement. The number of cameras needed to adequately monitor each road segment varied from 1 to 7 (Table 1). Appendices A and B include a set of maps of each camera array showing placement location and arrows indicating pathways or trails adjacent to Keri and Corkscrew roads, respectively. Appendices C and D include site photographs of each monitoring location showing the general character of the vegetation present and notable landscape features (e.g., animal trails, public access roads/trails).

Cameras were mounted on trees and fence posts and optimally fixed at an angle to capture panthers at the targeted location on trails, firebreaks, access roads, etc. (fig. 10). Cameras were set to take either a 3-image burst or 30 sec video and recorded 24 hrs/day. Cameras were operated from December 2017 to May 2019 to capture seasonal variation in wildlife activity. We checked cameras once every 2 months to collect data, check batteries and camera settings, and perform site maintenance as needed (i.e., prevent encroaching vegetation from causing false triggers). Camera placement at each site was adjusted to improve capture effectiveness and minimize disturbance, if necessary following review of the first period of collected images.

Data Management and Analysis:

Supervised volunteers sorted images from each recording interval into separate folders based on species. Separate events were recorded into a master spreadsheet and were coded by site number, camera number, date, image number, time, species, the direction of travel, the number of photos associated with the event, and the number of individuals present.

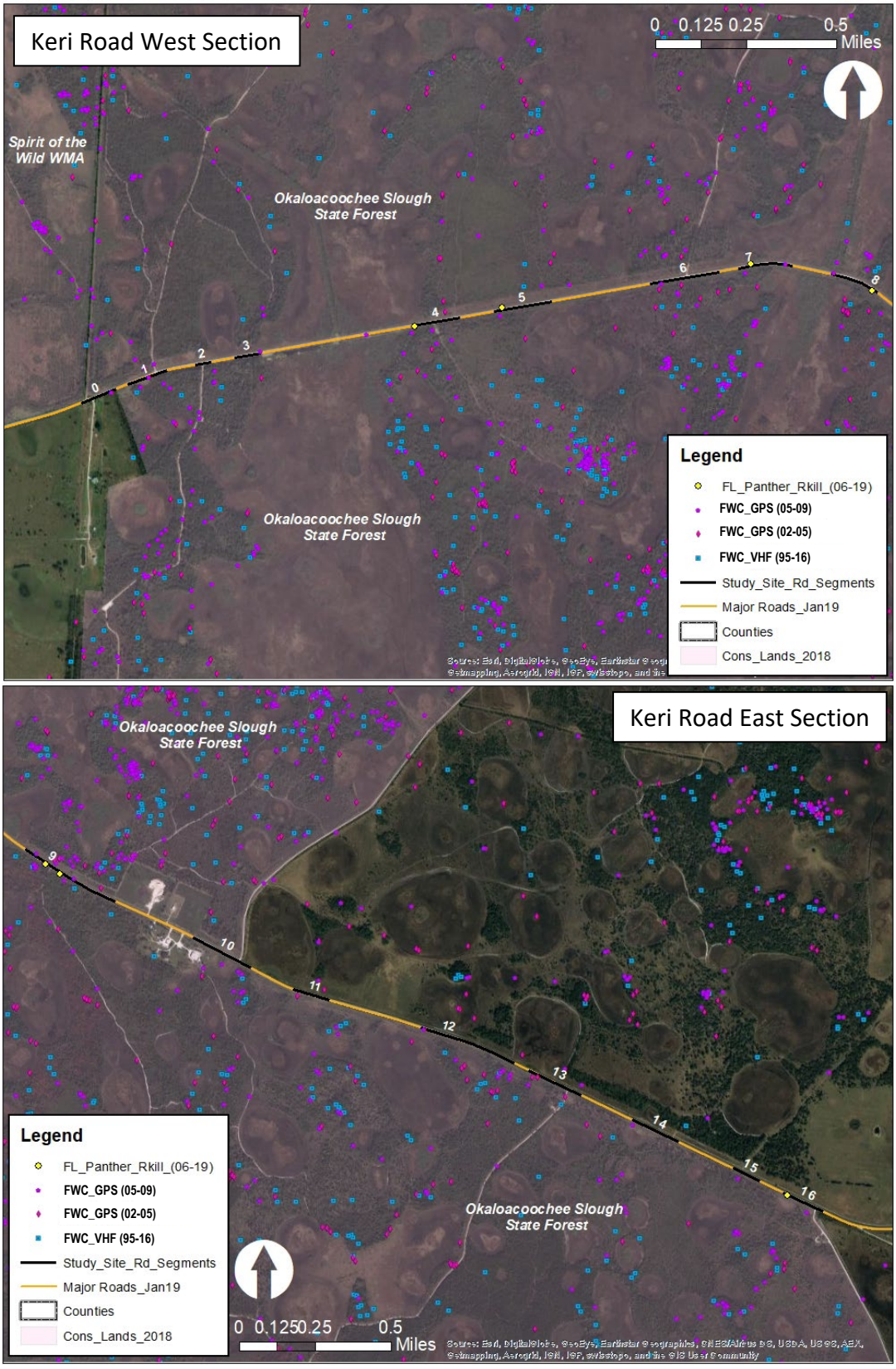

Figure 8. Selected road segments for deploying camera trap arrays to monitor panther activity along the Keri Road (OKSSF/SW) study area.

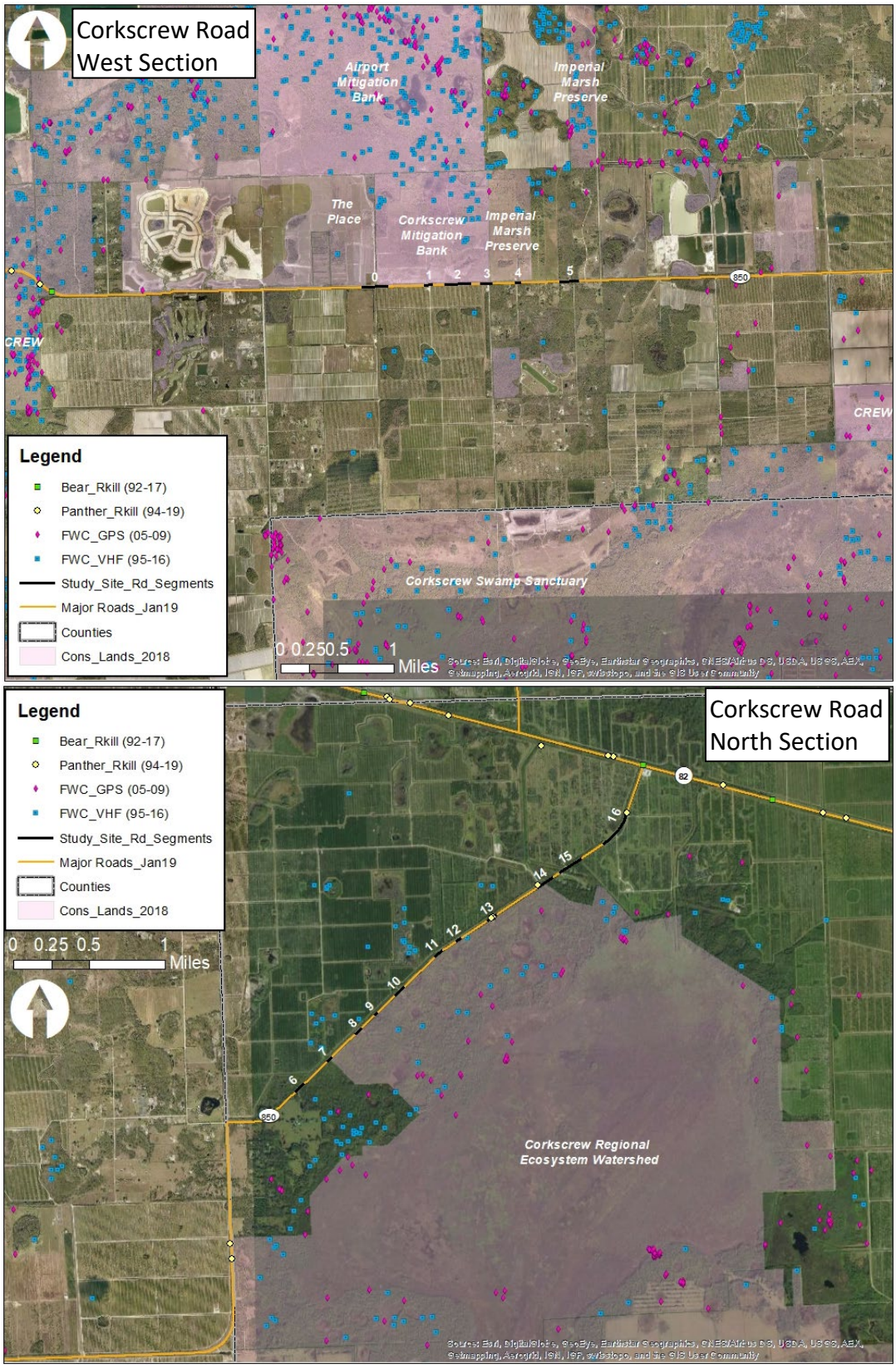

Figure 9. Selected road segments for deploying camera trap arrays to monitor panther activity along the Corkscrew Road study area.

Figure 10. Typical post mounting of trail camera along an animal trail.

Table 1. Number of cameras deployed to monitor each road segment.

Study Area	Location	Road Segment	# of Cameras
Keri Rd West	OK Slough SF	0	4
Keri Rd West	OK Slough SF	1	6
Keri Rd West	OK Slough SF	2	5
Keri Rd West	OK Slough SF	3	7
Keri Rd West	OK Slough SF	4	7
Keri Rd West	OK Slough SF	5	2
Keri Rd West	OK Slough SF	6	6
Keri Rd East	OK Slough SF	9	4
Keri Rd East	OK Slough SF	10	7
Keri Rd East	Alico Ranch	12	3
Keri Rd East	Alico Ranch/OKSSF	13	3
Keri Rd East	Alico Ranch	14	2
Keri Rd East	Alico Ranch	15	1
Keri Rd East	Alico Ranch/OKSSF	16	4
Corkscrew Rd West	The Place/CMB	0	5
Corkscrew Rd West	Corkscrew Mitigation Bank	1	1
Corkscrew Rd West	CMB	2	4
Corkscrew Rd West	CMB/IMP	3	6
Corkscrew Rd West	Imperial Marsh Preserve	4	3
Corkscrew Rd North	Alico Groves	6	1
Corkscrew Rd North	Alico/CREW	7	2
Corkscrew Rd North	CREW	8	1
Corkscrew Rd North	CREW	9	1
Corkscrew Rd North	Alico/CREW	10	3
Corkscrew Rd North	Alico Groves	11	2
Corkscrew Rd North	CREW	12	1
Corkscrew Rd North	CREW	14	4
Corkscrew Rd North	Powerlines	15	2
Corkscrew Rd North	Alico/CREW	16	2

An event was defined as an isolated occurrence of a species (including presence of 1 or more individuals at the same time interval). A new event was recorded if a new species appeared or more than 5 minutes had elapsed since the species was last seen. Entries from volunteers were spot checked for errors. Each data collection period (approx. 2 mos.) was recorded into a master spreadsheet. The master spreadsheet described the number of photos taken in that period, significant notes, and the date the photos were input into the master spreadsheet. Any malfunctions or gaps in camera operation were recorded to calculate the number of active recording days.

We also recorded vehicles and people (hikers, bikers, hunters, maintenance workers, etc.) that were caught on camera at each respective site. Their effect on presence/abundance of wildlife at each location was evaluated. In addition, we collected rainfall and temperature data to evaluate potential seasonal effects on presence/abundance at each study location (e.g., wet season access to some sites was limited).

The repeated count data (i.e., number of events per species) were summed for each site and month of observation for the time period spanning December 2017- May 2019. The event count data (for target species: FL panther, black bear, bobcat, and whitetail deer) were then assessed in R (R Core Team, 2013) by fitting an N- mixture model (Royle 2004) using the package "unmarked" (Fiske 2011) which fits hierarchical models to models of measures of wildlife occurrence and abundance. The number of active camera days at each site was used as a covariate of the **detection process** given that a site with more camera days is more likely to have more wildlife events.

Eight possible covariates were examined in relation to the **state process** of species occurrence or abundance (Table 2). Four of the covariates were categorical: presence of access road (y/n), presence of adjacent canal (y/n), FWC 2018 land cover (represented by type with greatest areal extent at 0.2 ha surrounding the centroid of each study site: *citrus, improved pasture, marsh impoundments, mesic flatwoods, oak and cabbage palm forest, shrub and brush*), and native shrub and tall grass cover (<1/3, 1/3-2/3, >2/3). The remaining four covariates were continuous: foot/bicycle traffic, percent tree cover, clear zone width (m), and distance from camera site cluster to road centerline (m). It is important to note that for statistical purposes an "access road" only includes highly maintained, unpaved roads for land management and/or recreation/hiking. It does not include firebreaks, unmaintained hunting paths or animal trails.

First, we generated a correlations matrix between abundance covariates in the Keri Road and Corkscrew Road study areas to prevent significantly correlated variables from being included in the same model. Second, each state process covariate was separately entered in the N- mixture model with active camera days as the detection process covariate. Third, for each significant correlation between covariates we retained only the more informative covariate as measured by minimum AIC in the previous step. AIC is a measure of model quality that balances model simplicity with goodness-of-fit in order to compare competing models during model selection (Akaike 1974). This resulted in 4 independent covariates on abundance for each species in each study area. Fourth, all possible combinations of the selected state process covariates were evaluated, and the top model was selected by minimum AIC. Active camera days was used as a covariate in the detection process in all models.

Lastly, we calculated the Bayesian best estimated, unbiased predictors of the mean posterior abundance distribution to select the sites with the highest relative abundance (or occurrence) for the target species in each study area. Crucially, these are not ***actual*** abundance estimates, but rather estimates relative to the distribution of abundance (occurrences) across sites (Royle 2004).

Table 2. Site cluster parameters (covariables) used in R for analysis of relative abundance or occurrence of target species.

Study area	Area divisions	Site cluster (rd segment)	Foot/ bicycle traffic	Med distance-site cluster to rd centerline (m)	Clear zone width (m)	Avg % tree cover (at 0.2 ha)	Shrub/ tall grass cover	Adj canal	Access rd/ rec trail	FWC 2018 land cover (primary)
Keri Road	W	S0	70	64.5	68	95	> 2/3	n	y	shrub & brush
Keri Road	W	S1	47	23	31	57	1/3 to 2/3	n	y	mesic flatwoods
Keri Road	W	S2	74	32	53	30	1/3 to 2/3	n	y	mesic flatwoods
Keri Road	W	S3	7	46.5	50	45	1/3 to 2/3	n	n	mesic flatwoods
Keri Road	W	S4	156	45	49.5	43	1/3 to 2/3	n	y	mesic flatwoods
Keri Road	W	S5	6	54	62	50	1/3 to 2/3	y	n	mesic flatwoods
Keri Road	W	S6	34	34	48.5	33	1/3 to 2/3	y	y	mesic flatwoods
Keri Road	E	S9	59	53.5	63.5	50	1/3 to 2/3	n	y	mesic flatwoods
Keri Road	E	S10	42	54	92	10	< 1/3	y	y	improved pasture
Keri Road	E	S12	24	62	77	33	< 1/3	y	n	oak-cabbage palm forest
Keri Road	E	S13	18	70	67	33	1/3 to 2/3	n	y	mesic flatwoods
Keri Road	E	S14	35	52.5	65.5	50	< 1/3	y	y	oak-cabbage palm forest
Keri Road	E	S15	3	63	64	30	< 1/3	y	n	oak-cabbage palm forest
Keri Road	E	S16	24	49	97	25	< 1/3	n	y	improved pasture
Corkscrew Rd	W	S0	56	21	40.5	12	< 1/3	n	y	shrub & brush
Corkscrew Rd	W	S1	100	109	37	15	< 1/3	n	y	marsh impoundments
Corkscrew Rd	W	S2	95	18.5	30	23	< 1/3	y	y	marsh impoundments
Corkscrew Rd	W	S3	52	16	55	13	1/3 to 2/3	n	n	marsh impoundments
Corkscrew Rd	W	S4	25	16	32.5	20	1/3 to 2/3	n	y	marsh impoundments
Corkscrew Rd	N	S6	6	25	28	15	1/3 to 2/3	y	n	shrub & brush
Corkscrew Rd	N	S7	23	25	26.5	25	1/3 to 2/3	y	n	mesic flatwoods
Corkscrew Rd	N	S8	24	70	39	75	1/3 to 2/3	n	y	mesic flatwoods
Corkscrew Rd	N	S9	16	14	32	50	1/3 to 2/3	y	n	mesic flatwoods
Corkscrew Rd	N	S10	98	123	27	54	1/3 to 2/3	y	y	mesic flatwoods
Corkscrew Rd	N	S11	0	32.5	43	5	1/3 to 2/3	n	y	citrus
Corkscrew Rd	N	S12	29	14	39	50	1/3 to 2/3	y	n	mesic flatwoods
Corkscrew Rd	N	S14	52	14	51.5	49	1/3 to 2/3	n	n	mesic flatwoods
Corkscrew Rd	N	S15	8	74.5	25	43	1/3 to 2/3	n	y	shrub & brush
Corkscrew Rd	N	S16	7	173	45	5	< 1/3	n	y	citrus

Note: FWC 2018 land cover (primary) is represented by type with greatest areal extent at 0.2 ha surrounding the centroid of each study site.

KERI ROAD STUDY AREA
RESULTS

Cameras were first deployed at the Keri Road study area in late December of 2017. We installed a total of 61 cameras; as a result not all cameras have the same start date. We had three separate installation periods; the last ones were installed in early June 2018. All cameras were operational for approximately 12 months, the field work ending in May of 2019. Due to the practical lag in installation, periodic camera malfunctions and obstructions, the number of active camera-trap days varies by site (Table 3). Number of active camera-trap days by site also differs due to the range in number of cameras deployed at each site (see Tables 1 and 3). These differences were addressed in our statistical evaluation.

We recorded a total of 4,428 events of the target species (Table 3). Of greatest importance are recorded events of FL panthers (n=454) and their primary prey species, white-tailed deer (n=3,397). It is important to note that number of events does not equate to number of individuals. We were unable to identify individuals from photographs. The same individuals likely passed by our cameras numerous times. Other carnivores were also commonly captured in photo events at many of the monitoring sites.

Table 3. Active camera-trap days by site and no. of events of target species at Keri Road study area (see fig. 8 for location of study sites).

Study area	Study site/ road segments	Active camera-trap days	All target species	FL panther	Black bear	Bobcat	Whitetail deer
Ok Slough West	0	1340	312	32	7	19	254
Ok Slough West	1	2148	601	98	15	133	355
Ok Slough West	2	1073	289	13	3	26	247
Ok Slough West	3	2281	969	76	17	41	835
Ok Slough West	4	1058	407	41	6	92	268
Ok Slough West	5	659	82	9	0	5	68
Ok Slough West	6	1732	220	12	1	34	173
Ok Slough East	9	1306	400	100	3	67	230
Ok Slough East	10	1160	439	15	3	15	406
Ok Slough East	12	1241	150	0	1	3	146
Ok Slough East	13	1064	265	23	0	33	209
Ok Slough East	14	699	110	13	1	25	71
Ok Slough East	15	361	54	3	0	1	50
Ok Slough East	16	1207	130	19	1	25	85
	Total	**17,329**	**4,428**	**454**	**58**	**519**	**3,397**

<u>Bayesian best estimated unbiased predictors</u>:

The sites at which each species were most abundant as measured by Bayesian posterior abundance estimates differed; abundance estimates for FL panthers and bobcats were highest in

road segments 1, 4 and 9, black bear abundance was greatest in road segments 0, 1 and 4, while estimates for whitetail deer were highest in road segments 2, 3, and 10 (Table 4).

Site	FL panther	Bobcat	Black bear	Whitetail deer
0	31.1064	28.88032	**75.79603**	218.6925
1	**39.0432**	**61.15806**	**75.10112**	186.6995
2	24.2726	37.93273	71.64468	**238.7565**
3	28.4685	23.46258	72.74194	**294.9384**
4	**38.9179**	**73.22854**	**76.16035**	237.9384
5	26.6269	28.07290	0	149.5642
6	12.8192	31.62239	66.91673	128.7061
9	**61.4989**	**55.28872**	72.12760	211.9376
10	24.2132	29.11051	72.90366	**291.3085**
12	0	18.75602	71.36577	181.2960
13	31.1773	42.48192	0	207.4662
14	28.8274	42.49709	72.28596	157.6564
15	24.3964	27.33735	0	159.4151
16	24.2822	32.77472	70.68868	133.6254

Table 4: Posterior abundance estimates for target species at each site on Keri Road as measured by Bayesian best unbiased predictors. The three highest abundance estimates for each species are shown in bold type.

Correlation between covariates:

Several significant correlations between covariates were found in OKSSF (Table 5). In each case where a significant correlation was found, the more informative covariate was selected for each species in each study area (Table 6).

Table 5: Correlations matrix for covariates in the Keri Road study area.

	Adjacent canal	Access road	Rd centerline to site cluster	Clear zone width	Foot/ bicycle traffic	FWC land cover type	Shrub and tall grass cover	% Tree cover
Adjacent canal	-	0.1243	0.4838	0.3984	0.0596	0.12	0.0998	0.2408
Access road	-	-	0.2929	0.9817	0.0247	0.3362	0.6805	0.8027
Rd centerline to site cluster	-	-	-	0.0237	0.341	0.2991	0.1832	0.817
Clear zone width	-	-	-	-	0.9617	0.0029	0.0145	0.1851
Foot/bicycle traffic	-	-	-	-	-	0.6108	0.8145	0.7534
FWC land cover type	-	-	-	-	-	-	<0.0001	0.0008
Shrub and tall grass cover	-	-	-	-	-	-	-	0.0012
% Tree cover	-	-	-	-	-	-	-	-

Note: Significant correlations are shown in red.

Table 6: AIC values for species abundance models in the Keri Road study area using a single covariate in the state process.

Covariate	FL panther	Bobcat	Black bear	Whitetail deer
Adjacent canal	979.4136	1304.493	242.9161	5630.433
Access road	*1012.649*	1283.47	*248.748*	5608.225
Centerline to site cluster	*1016.302*	*1321.613*	*250.2442*	5656.967
Clear zone width	1013.432	1302.182	249.0446	*5656.475*
Foot/bicycle traffic	1008.544	*1284.908*	241.4173	*5627.019*
FWC land cover type	*1006.689*	*1309.591*	*249.9742*	5616.02
Shrub and tall grass cover	*1005.941*	*1353.34*	*248.4157*	*5649.581*
Percent tree cover	979.4136	1304.493	245.1075	*5656.816*

Note: Covariates eliminated from further consideration are shown in gray italics.
Covariates included in the final models for each species were identified by selecting for the lowest AIC score (above) in highly correlated pairs (see Table 5).

Species relative abundance models:

Abundance models containing only the covariate of active camera days showed significant effects on the detection process (FL panther, p=5.65e-17; bobcat, p=6.62e-15; black bear, p=1.14e-09; and whitetail deer, p=2.1e-108). Shapiro-Wilk normality tests indicated the distribution of events for each species was not normal (panther, p=0.0027; bobcat, p=0.0095; bear, p=0.0004; deer, p=0.0034), therefore the nonparametric Wilcoxon analysis was used in categorical comparisons.

The best-fitting FL panther model (Active camera days ~ Adjacent canal + Clear zone width + Percent tree cover; AIC = 976.3906) indicated abundance was significantly higher in segments without adjacent canals (Wilcoxon, p=0.0045). Panther abundance also had a significant positive correlation with percent tree cover (p=0.0325, R^2=0.352) and an insignificant negative correlation with clear zone width (p=0.0741, R^2=0.242). Results from all panther models are listed in Table 7.

The best-fitting bobcat model (Active camera days ~ Adjacent canal + Access road + Clear zone width + Percent tree cover; AIC = 1226.849) indicated that bobcat abundance was significantly higher in road segments without adjacent canals (Wilcoxon, p=0.0239). Abundance was higher (but insignificantly) in segments with an access road present (p=0.1247, R^2=0.1851). Bobcat abundance was significantly negatively correlated with clear zone width (p=0.0117, R^2=0.4235) and significantly positively correlated with percent tree cover (p=0.0449, R^2=0.3175). Results from all bobcat models are listed in Table 8.

The best-fitting black bear model (Active camera days ~ Foot/bicycle traffic + Percent tree cover; AIC = 239.772) indicated bear abundance was positively correlated with foot/bicycle traffic (p=0.7654, R^2=0.0071) and percent tree cover (p=0.1231, R^2=0.1297) but both of these relationships were insignificant. Results from all bear models are listed in Table 9.

Table 7: AIC (of best-fitting model) and Δ AIC (from best-fitting model) for all 15 considered FL panther abundance models in the Keri Road Study area.

Covariate combinations	Δ AIC from best-fitting model	AIC
Adj canal + Clear zone + Percent tree cover	0	976.3906
Adj canal + Clear zone	0.4806	976.8712
Adj canal + Percent tree cover	1.5735	977.9641
Adj canal + Clear zone + Foot traffic + Percent tree cover	1.9194	978.31
Adj canal + Clear zone + Foot traffic	2.4116	978.8022
Adj canal	3.023	979.4136
Adj canal + Foot traffic + Percent tree cover	3.5755	979.9661
Adj canal + Foot traffic	5.0252	981.4158
Foot traffic + Percent tree cover	24.5044	1000.895
Clear zone + Foot traffic + Percent tree cover	24.9584	1001.349
Percent tree cover	29.5504	1005.941
Clear zone + Percent tree cover	29.9014	1006.292
Clear zone + Foot traffic	30.7824	1007.173
Foot traffic	32.1534	1008.544
Clear zone	37.0414	1013.432

Table 8: AIC (of best-fitting model) and Δ AIC (from best-fitting model) for all 15 considered bobcat abundance models in the Keri Road Study area.

Covariate combinations	Δ AIC from best-fitting model	AIC
Adj canal + Access Rd + Clear zone + Percent tree cover	0	1226.849
Adj canal + Access Rd + Clear zone	0.566	1227.415
Access Rd + Clear zone	17.949	1244.798
Access Rd + Clear zone + Percent tree cover	19.933	1246.782
Adj canal + Access Rd	32.059	1258.908
Adj canal+ Access Rd + Percent tree cover	33.816	1260.665
Adj canal + Clear zone	34.7	1261.549
Adj canal + Clear zone + Percent tree cover	35.645	1262.494
Access Rd	56.621	1283.47
Access Rd + Percent tree cover	56.925	1283.774
Clear zone	75.333	1302.182
Clear zone + Percent tree cover	76.739	1303.588
Adj canal	77.644	1304.493
Adj canal + Percent tree cover	79.615	1306.464
Percent tree cover	126.491	1353.34

Table 9: AIC (of best-fitting model) and Δ AIC (from best-fitting model) for all 15 considered black bear abundance models in the Keri Road Study area.

Covariate combinations	Δ AIC from best-fitting model	AIC
Foot traffic + Percent tree cover	0	239.772
Adj canal + Foot traffic + Percent tree cover	1.3864	241.158
Adj canal + Foot traffic	1.4712	241.243
Foot traffic	1.6456	241.417
Clear zone + Foot traffic + Percent tree cover	2.0181	241.79
Adj canal	3.1444	242.916
Adj canal + Clear zone + Foot traffic + Percent tree cover	3.1929	242.965
Adj canal + Percent tree cover	3.2529	243.025
Clear zone + Foot traffic	3.451	243.223
Adj canal + Clear zone + Foot traffic	3.57	243.342
Adj canal + Clear zone	4.016	243.788
Adj canal + Clear zone + Percent tree cover	4.2936	244.065
Percent tree cover	5.3358	245.108
Clear zone + Percent tree cover	6.5403	246.312
Clear zone	9.2729	249.045

The best-fitting whitetail deer model (Active camera days ~ Access road + FWC land cover type; AIC = 5598.293) indicated abundance was higher in segments without access roads, but this relationship was not significant (Wilcoxon, p=0.358). Deer abundance, in association with FWC land cover type, was greater in segments dominated by *mesic flatwoods* than in segments dominated by *oak-cabbage palm forest*, but this relationship was not significant (Wilcoxon, p=0.2467). Results from all deer models are listed in Table 10.

Other effects:

We collected rainfall and temperature data from the nearest station in LaBelle, FL for the study period December 2017 to May 2019 (fig. 11). There was a peak in rainfall from May to August of 2018. This resulted in flooding of all sites within or near marsh areas, making these locations somewhat inaccessible. This also resulted in elevated water levels in roadside channels and swales increasing the barrier effects of the road to terrestrial wildlife movement.

Another factor potentially affecting movement by panthers and other wildlife was presence of vehicles. We compared number of photo events of vehicles to photo events of panthers at all camera sites monitoring access roads to the state forest (Table 11). Number of panthers was greatest at site 9, where the gate was kept closed to vehicles during most of the study period. To the contrary, site 1 had the second highest volume of panther use, but 4 times the vehicles as site 9.

Table 10: AIC (of best-fitting model) and Δ AIC (from best-fitting model) for all 15 considered whitetail deer abundance models in the Keri Road Study area.

Covariate combinations	Δ AIC from best-fitting model	AIC
Access Rd + FWC	0	5598.293
Access Rd + Centerline + FWC	0.74	5599.033
Adj canal + Access Rd + Centerline + FWC	2.107	5600.4
Adj canal + Access Rd + Centerline	6.108	5604.401
Adj canal + Access Rd	6.692	5604.985
Access Rd + Centerline	8.137	5606.43
Access Rd	9.932	5608.225
Adj canal + FWC	13.522	5611.815
Adj canal + Centerline + FWC	15.32	5613.613
FWC	17.727	5616.02
Centerline + FWC	19.38	5617.673
Adj canal + Access Rd + FWC	22.613	5620.906
Adj canal	32.14	5630.433
Adj canal + Centerline	33.227	5631.52
Centerline	58.674	5656.967

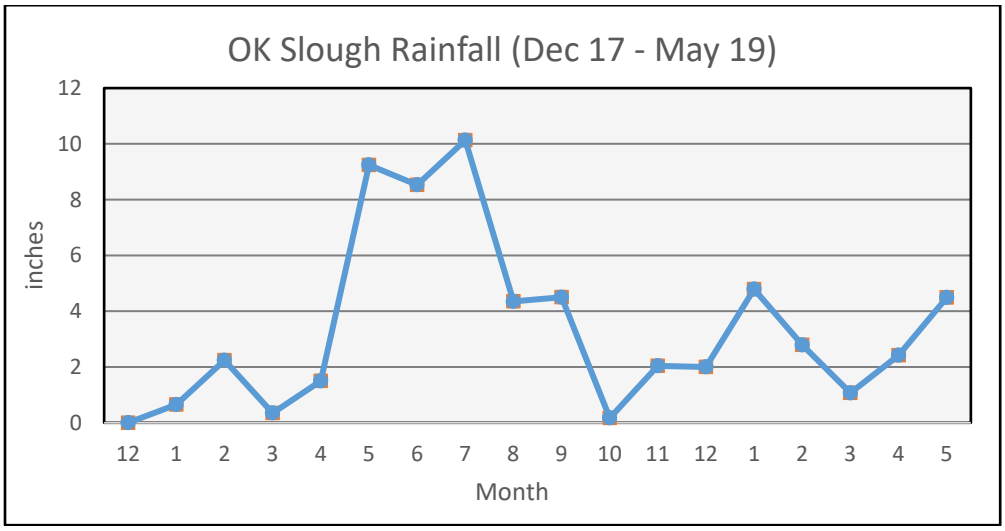

Figure 11. Approximate rainfall amounts for the Keri Road study area (LaBelle, FL data from: NOAA 2019).

We also examined the effect of season on the number of events recorded for each species group. Based on the data collected, we defined species groups as carnivores (black bear, bobcat, coyote, river otter), ungulates (white-tailed deer, wild hog), meso-mammals (Virginia opossum, raccoon, nine-banded armadillo), small mammals (rabbits), and avian (wild turkey and sandhill crane). Panthers were evaluated separately. Sites west of the Ok Slough are shown in fig. 12 (and in tabular form in Appendix E), and sites east of the OK Slough are shown in fig. 13 (and in tabular form in Appendix E). The OK Slough forms a natural barrier to terrestrial wildlife movement

between the two areas and is an appropriate physical feature to subdivide the dataset for presentation purposes.

Table 11. Comparison of # of panther events and # of vehicles at key drainage channel crossover sites.

Site	Camera	Road/Trail	# of vehicles	# of panthers	panthers/vehicle
0	1	Boundary Trail	191	20	0.105
1	4	North Loop Rd - west	1168	39	0.033
2	5	Sic Island Rd	2219	17	0.008
4	7	Dog Island trailhead	829	2	0.002
6	1	Oil Pad Rd	440	4	0.009
9	4	Keri Tower Rd	277	65	0.235
10	7	Twin Mills Grade	4599	13	0.003
13	1	Patterson Rd	490	23	0.047
16	3	Wild Cow Grade	5605	22	0.004

Note: Yellow highlights indicate where gates were kept locked, only public access on foot was allowed. All other sites were open to vehicles except during flooded periods to prevent erosion.

In the Keri Road West study area, panthers were most commonly recorded at sites S0/S1, S3 and S4, in that order (fig. 12). The Fall season exhibited the greatest activity, and the summer period when flood levels were greatest didn't appear to have a significant impact. For other carnivores, sites S0/S1 and S4 had the greatest use. In this case the greatest activity occurred in Fall and Summer. Ungulates included only deer in OK Slough West; they were more frequently captured on camera than any other species. Sites S0/S1 and S3 had the highest numbers, but they were also common at S2 and S4. They were most frequently recorded in Summer, but also common in Spring and Fall. Avian events (mostly turkey) by site were highest at S4 across all seasons. At site S4 in spring we recorded 51 events of sandhill crane, and 33 events of American alligator were recorded at S2 in fall and winter. Event records were lower for all species groups at site S5; this site was adjacent to slough marsh on the south side of the road, did not include dry access over the roadside channel and the shrub vegetation growing in the canal was dense.

In the Keri Road East study area, only site S9 exhibited frequent use by panthers, all sites except S12 were occasionally used (fig. 13). No panthers were recorded at site S12. Spring and Fall seasons had the greatest activity. With other carnivores, few bears or coyotes were recorded. Bobcats were common in this area, especially at S9, S13, S14 and S16. Bobcat activity was most recurrent in Winter and Spring. Ungulates included only deer in OK Slough East; there were about half as many as recorded in OK Slough West. Sites S10, S9, S13 and S12 had the highest numbers, in that order. They were most frequently recorded in Spring and Summer. Avian events (mostly turkey) were highest at sites S9, S10 and S12. Spring and Summer had the highest number of Avian events.

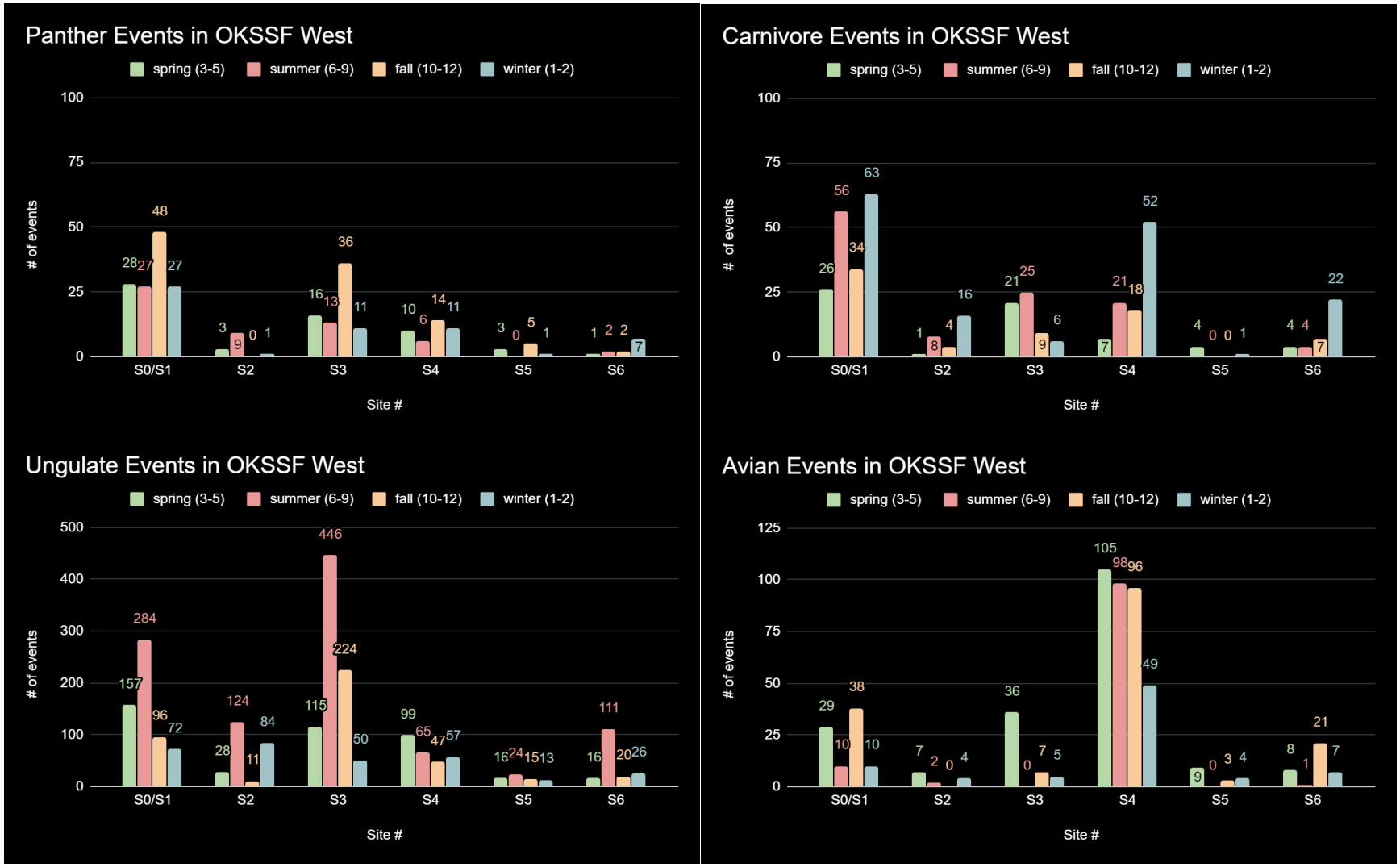

Figure 12. Number of photo events by season by species for monitoring sites in OK Slough West (see fig. 8 for site locations). For meso- and small- mammal event records, see Appendix E.

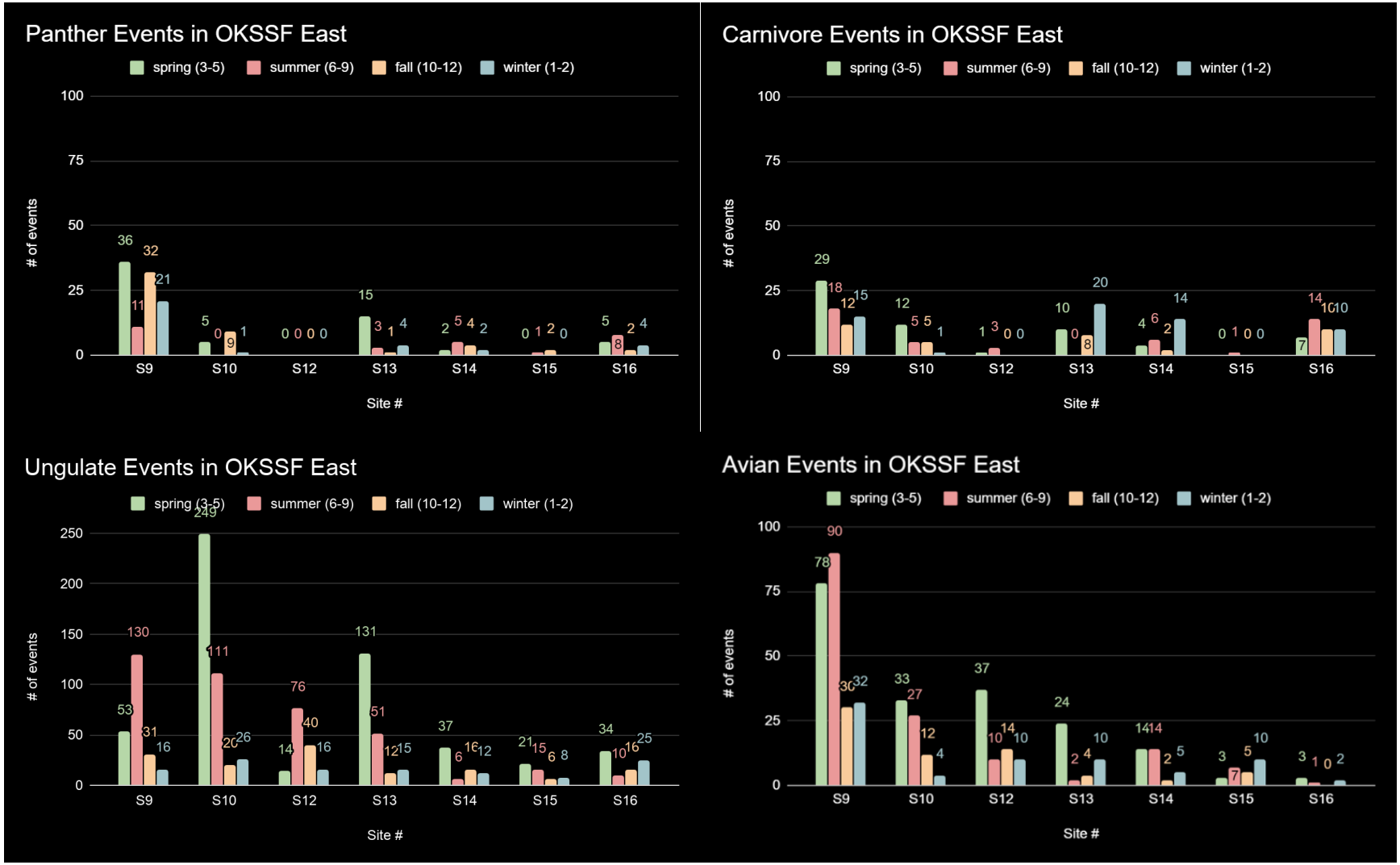

Figure 13. Number of photo events by season by species for OK Slough East (see fig. 8 for site locations). For meso- and small-mammal event records, see Appendix E.

KERI ROAD STUDY AREA
DISCUSSION

Field surveys on Keri Road were confounded by a parallel roadside drainage channel on the southside of the road. The channel averaged about 20-25 ft wide and was covered almost entirely by entangled, dense shrubby vegetation. This made it quite difficult to discern many possible crossing points by wildlife on the south side of the road. We suspect this also created a significant challenge to any wildlife attempting to cross it. We monitored 6 sites where the drainage channel was a potential barrier, 7 sites where the drainage channel was bridged by an access road or trail and 2 sites (S1, S3) where there wasn't a bridge over the channel, but sediment accumulation made it possible to cross, particularly during the dry season.

Our findings for the OK Slough area identified sites S9, S1 and S4 on Keri Road as the most critical sites for panther activity (see Table 4). Important secondary sites included S0, S3, S10 and S13 (S3 and S10 also ranked high for deer occupancy). These findings match the density/patterns of composite panther telemetry locations and panther-vehicle collision sites (see fig. 8). As such, road crossings may be common at several locations. Schwab and Zandbergen (2011) would describe Keri Road as a "minor road", in that current road size and traffic level does not cause significant avoidance by panthers. Crossing avoidance behavior and collision risk would be expected to increase with increased traffic.

Of note, site S6 scored lower than expected, possibly due to the absence of a land crossing of the drainage channel on the southside of the road. Suitable habitat exists on both sides of the road at this site, so installing a culvert and land-crossing over the drainage channel might increase use at this location. All 7 sites listed above of primary or secondary importance for panther activity include *existing* land crossings of the drainage channel on the southside of the road. This likely influenced greater presence by panthers and other wildlife intent on crossing the Keri Road.

Keri Road at present has only 450 vehicles/day. Instead of high volume, high-speed and driver visibility are the likely causes of collisions with wildlife. Collision risk is greatest in sections of the road where driver visibility is reduced either from severe curves or dense vegetation near the road. Because of these conditions, the least expensive remedy would be posted speed reductions and increased enforcement. Speed-triggered wildlife warning lights may increase driver awareness and use of animal detection/warning systems might be considered at several locations.

We identified several road crossing locations used by wildlife, facilitated by access roads and trails that allow wildlife to cross the deep-water channel along the southside of the road. As such, crossing opportunities are many and it would be challenging economically to address entirely with wildlife crossing structures and fencing. Below we provide recommendations based on greatest need, but we also include elements that greatly would reduce the impact of Keri Road on the adjacent ecosystem (e.g., flow-ways of OK Slough are essentially dammed by the roadway).

Keri Road West, Road Crossing Patterns and Recommendations:

The Keri Road west study area includes 3 physically separated site (road segment) clusters that exhibit inter-related road crossing patterns, sites 0-3, 4-5, and 6-7 (fig. 8). At the western

property boundary of OK Slough SF, we identified interactions between sites 0 and 1, sites 1 and 2, and sites 2 and 3 (Appendix A). The inter-related use of these sites was facilitated by firebreaks parallel to and on each side of the road that provided pathways for panthers and other wildlife. Through analysis and observation, we identified 3 wildlife crossing points: the first two where North Loop Road and Sic Island Road each intersect with Keri Road and the third where a pathway and sediment-filled section of the roadside ditch exists at road segment 3 (fig. 14). Road segment 1 was one of the top three most important sites for panthers identified in our analysis, and road segments 0 and 3 were high ranking secondary locations.

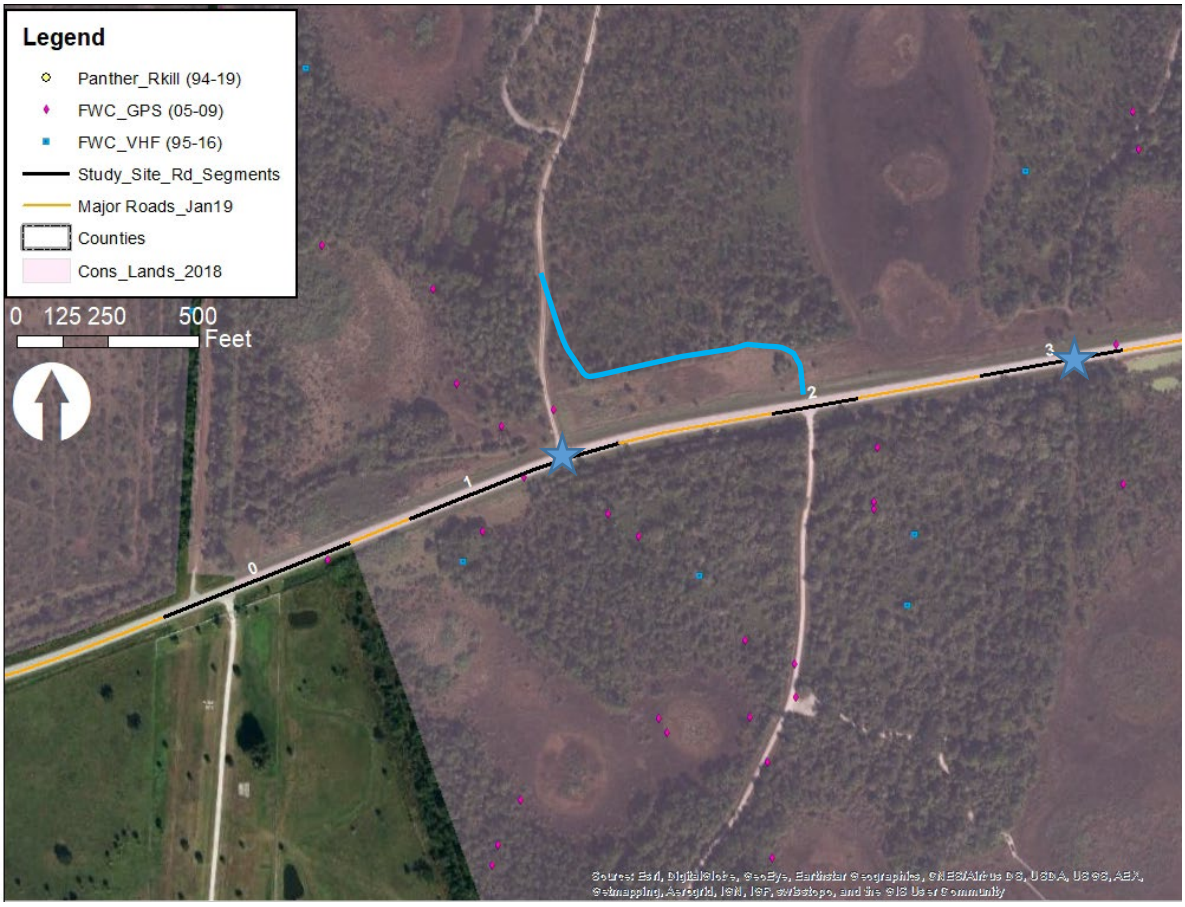

Figure 14. Identified wildlife crossing points at road segments 0-3 in OK Slough SF. Blue highlighted stars indicate proposed locations for wildlife crossing structures and rerouted access for North Loop Road. Accompanying wildlife fencing would be needed through this section. (**Important note:** These recommendations apply if/when traffic increases and panther-vehicle collision risk increases).

On this low-traffic volume road, we would recommend wildlife crossing structures similar in width and height to that installed at Camp Keias Strand on Immokalee Road (e.g., 6 ft high by 12 ft wide). In fig. 14 we show the relocation of the intersection of North Loop Road with Keri Road. This is necessary to provide enough distance to raise the roadbed for the crossing structure. The recommendation for crossing structures is associated with the importance of this site as a crossing location for panthers, however it is important to note that no panther-vehicle collisions have been recorded at this location to date. Because of this the ***urgency*** to install

crossings may not be that high at present. However, it will be important to monitor this location should conditions change and increase the need (urgency) to address wildlife-vehicle conflicts through the mitigation measures recommended.

Road segments 4 and 5 form the next site cluster where common road crossing patterns by wildlife were identified (fig. 15). Site no. 4 was among the top three ranked sites identified in our analysis. Most crossing activity occurs across from Dog Island parking area at site no. 4, but one panther roadkill and telemetry points indicate that some road crossing activity by panthers may also occur at the west extent of road segment 5 (see also Appendix A). A second panther-vehicle collision occurred at the westernmost end of road segment 4.

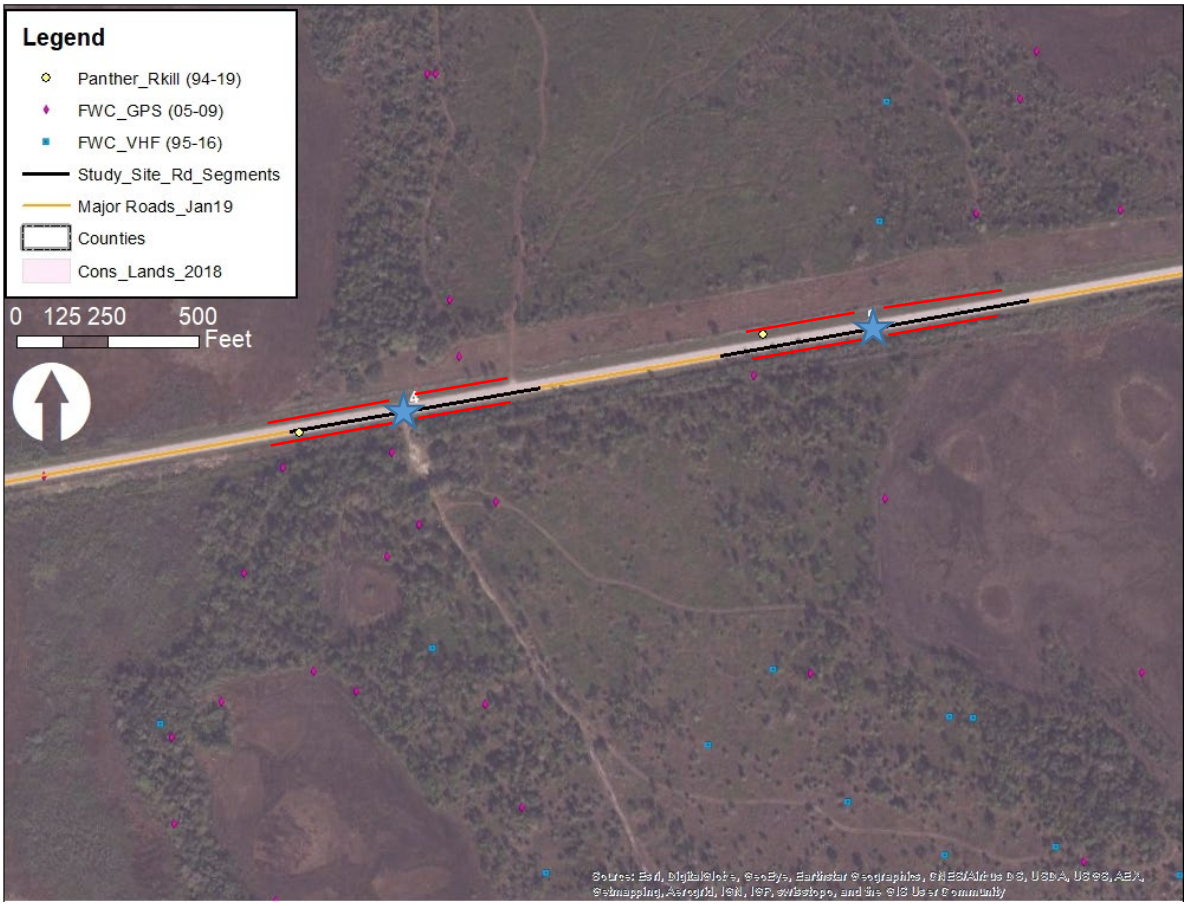

Figure 15. Identified wildlife crossing points at road segments 4-5 in OK Slough SF. The best mitigation (given road geometry, site conditions, and the low traffic volume at this location) may be a "cross-walk" type animal detection/warning system with accompanying wildlife fencing (in red) to direct wildlife to specific crossing points. (Note: A land-bridge over the deep-water channel at site 5 would also be required)

Most telemetry locations occurred in the pinelands at the margins of the marshes, where few exist on the northside of the road between road segments 4 and 5. The latter area consists of dense palmetto/oak scrub, habitat difficult to traverse. This configuration would dictate the need to locate two wildlife crossings. A more economical and effective measure at this location might be the use of a "cross-walk" type animal detection/warning system (Dodd et al. 2009; Dodd and

Wise 2007). This system has proven highly effective in Arizona. Two crosswalk locations with accompanying wildlife fencing would significantly reduce potential for collisions in this area.

Road segment nos. 6 and 7 are located along the west margin of the main portion of the OK Slough flow-way (fig. 16). There are no "dry" land crossings over the southern roadside deep-water channel associated with these sites. We did not monitor road segment no. 7 as high, water levels prohibited it. Even though a panther death occurred from collision in this segment, it likely occurred during a drier period when conditions were more amenable to crossing at this location. In any case, we would not recommend any mitigation for terrestrial wildlife here.

Figure 16. Potential wildlife crossing points at road segments 6-7 in OK Slough SF. This site cluster did not exhibit any "dry" land crossings of the deep-water channel on the south side of Keri Road. White star indicates site for dry crossover of drainage channel.

Road segment no. 6 did not rank very high in our assessment, even though telemetry data would indicate that panthers use this area on both sides of Keri Road. We hypothesize that the deep-water canal choked with dense shrubby vegetation plays a significant role in road crossing frequency at this location. If a land-bridge pathway over the canal was created across from Oil Pad Road, we would expect wildlife crossing activity to increase. To improve overall wildlife connectivity within the ecosystem, we would recommend this action. In addition, the roadway presents a severe barrier to free flow movement of water in the slough. We would suggest

installation of multiple culverts along segment no. 7 to reestablish more natural hydraulics to the OK Slough system.

Keri Road East, Road Crossing Patterns and Recommendations:

The Keri Road east study area includes 2 sites (road segment nos. 9 and 10) physically separated by the forest facilities complex and a series of 6 sites (road segments 11-16) similar in character at the eastern end of the State Forest (fig. 8). Potential movement patterns and interaction points with the roadway are shown in Appendix A.

Road segment no. 9 scored the highest for activity by panthers (table 4). Two panther deaths occurred on the road at this location and telemetry activity supports observations on camera of frequent use of this area (fig. 17). As with road segment nos. 4 and 5, this site is best suited for a "cross-walk" type animal detection/warning system. We recommend accompanying wildlife fence extend to at least the length shown in fig. 18, and that it be monitored to evaluate any need to extend the fence to prevent creating new road crossing wildlife hotspots.

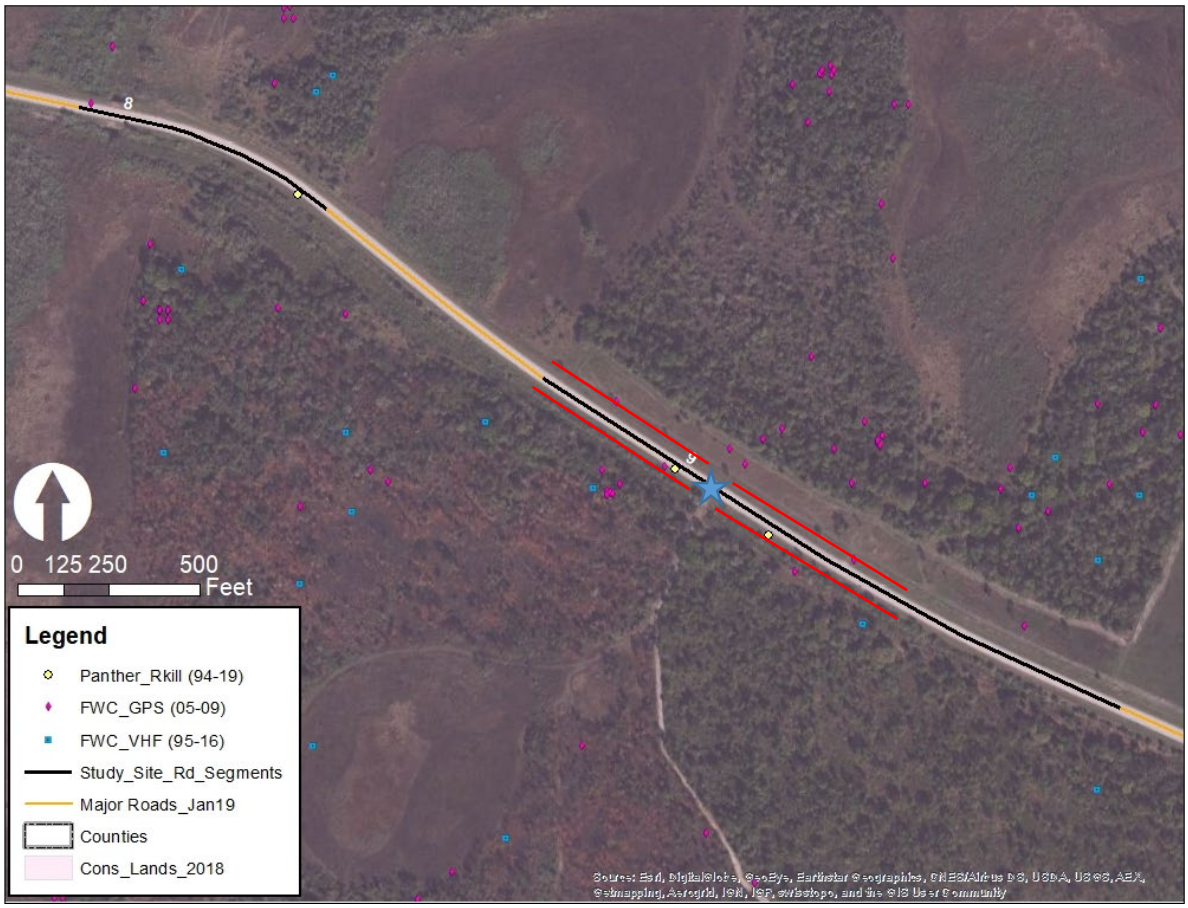

Figure 17. Identified wildlife crossing points at road segments 8-9 in OK Slough SF. The best mitigation (given road geometry, site conditions, and the low traffic volume at road segment no. 9) may be a "cross-walk" type animal detection/warning system with accompanying wildlife fencing (in red) to direct wildlife to a specific crossing point (Keri Tower access road).

Road segment no. 8 was of the same character and site conditions as road segment no. 7 (fig. 16). Because of high water levels we were unable to monitor it. Yet, we suspect “dry” season road crossings by panthers and other wildlife, due to presence of telemetry and roadkill records. We recommend similar measures to that for road segment no. 7: to install multiple culverts along this segment to improve natural hydrologic flows.

The OK Slough forest management facilities are near road segment no. 10 (fig. 18). While some activity by panthers was present at this location (using Twin Mills Grade and the adjacent firebreak), it was not identified as a priority for panthers in the analysis. However, for white-tailed deer activity it scored very high (table 4). This is likely due to the presence of cleared mowed areas for browsing adjacent to extensive forest edge habitat for cover. So, their presence is not necessarily associated with road crossings. The only recommended mitigation action at present would be a land-bridge pathway over the canal across from Twin Mills Grade to improve overall wildlife connectivity within the ecosystem.

Figure 18. Potential wildlife crossing points at road segments 10-11 in OK Slough SF. The unshaded area represents Alico Ranch. The only location we recorded probable panther road crossings was at Twin Mills Road in road segment no. 10. Observations by State Forest staff indicated that panthers may also cross Keri Road on facility grounds. White star indicates site for dry crossover of drainage channel.

We do not recommend any action for road segment 11. Although we did not monitor this location, it likely does not exhibit much road crossing activity due to the extensive marsh habitat on both sides of Keri Road.

The remaining road segments (12-16) are adjacent to the Alico Ranch to the north of Keri Road (fig. 19). The only panther road mortality was recorded in road segment no. 16, just west of Wild Cow Road. Only road segment no. 13 scored in the upper tier of our analysis of abundance for panthers. We did capture panther activity near the roadway and likely crossing the road at Patterson Road (site 13) and Wild Cow Road (site 16). There certainly was activity in the area by collared panthers, yet not at the densities observed further to the west in OK Slough SF.

Figure 19. Identified and potential wildlife crossing points at road segments 12-16 in OK Slough SF. The unshaded area represents the Alico Ranch. The only locations we recorded potential panther road crossing activity was at Patterson and Wild Cow Roads in road segment nos. 13 and 16, respectively.

We do not recommend any mitigation actions to reduce vehicle collision risk in this section at this time. This is due to two reasons: 1) the data does not indicate high road crossing rates or collision risk (other than one recorded mortality from 2015), and 2) because the north side of the road is not public conservation land there is insufficient security that the property will remain in passive agriculture or for conservation purposes. Therefore, a significant investment in

mitigation is not reasonable without a conservation/agricultural easement or a similar measure of security and coincident increased crossing activity and collision risk.

Despite this recommendation, should conditions change similar "cross-walk" style animal detection/warning systems with associated wildlife fencing as recommended previously would be suitable measures for road segment nos. 13 and 16.

Potential effects and complexities of state process covariables:

Both panther and bobcat abundance in the Keri Road study area were significantly higher at sites without an adjacent canal and with higher percent tree cover. Panther abundance was lower at sites with wider clear zones, but the relationship was not significant. The effect of wider clear zones was the same for bobcats, but significantly so. These relationships translate to more unrestricted mobility and preference of forest cover, consistent with previous studies on habitat selection (Onorato et al. 2011, Land et al. 2008). Bobcat abundance was also higher at sites without access roads, but insignificantly. This may be explained by our placement of cameras along different features that may be used as movement pathways including animal trails, firebreaks, recreational trails, and unpaved, land management access roads. In this instance, trails and firebreaks may be favored travel pathways over the more open and highly maintained vehicle-access roads and recreational trails.

Bear abundance was positively correlated with percent tree cover and foot/bicycle traffic, but insignificantly so. While the correlation with increasing tree cover is consistent with Florida black bear preference for forested habitats (Karelus et al. 2016), the association with foot traffic is less intuitive. This result may reflect the spatial arrangement of resources or site-specific qualities that are not broadly applicable as opposed to foot traffic truly causing higher bear abundance. Another, and perhaps more likely explanation is that in our analysis we were unable to evaluate the effect of timing of presence of people and wildlife and that the positive relationship of foot/bicycle traffic is muddled simply by the mere presence of the road or trail. For instance, from observations on-site and in photographs, we suggest that most people/vehicles are on the roads and trails during daylight hours, while the selected target species are mostly present at twilight and night-time periods. This temporal avoidance behavior would not show up in our statistical analysis and therefore inaccurately indicate a positive connection with foot/bicycle traffic.

Deer abundance was higher at sites without adjacent access roads, but this relationship was insignificant. Much like the explanation provided above for bobcats, this could merely be a preference to avoid people and vehicles. Deer abundance was greater in segments dominated by mesic flatwoods than in segments dominated by oak-cabbage palm forest, but not significantly. This may only be a slight effect of site-specific differences of camera clusters located in OKSSF vs. the Alico Ranch.

It is important to note that the analytical procedure we used identifies the most parsimonious and informative model, and performance is dependent on clear representation of the covariates. In this regard, there is one instance where we included a covariable with somewhat inaccurate representation (foot/bicycle traffic). Access roads/recreational trails were included as a variable

to assess potential avoidance of people and vehicles. This was a categorical covariable, and probably more appropriate for the analytical approach we used rather than foot/bicycle traffic. Though more complex (continuous, numeric data), it was inconsequential given we couldn't examine temporal effects. In retrospect, we should have left out foot/bicycle traffic as a covariate and simply used access road/trail to represent this landscape element. Nevertheless, its inclusion doesn't undermine our general findings. Further, we intend to explore other methods to more clearly identify the effects of foot/bicycle and vehicle traffic on species abundance and occurrence, both spatially and temporally.

Of greatest importance, the analysis we used to identify road segments where each species was relatively most abundant is not diminished by the complex nature of interpreting the effects of certain state covariables.

Using N-mixture models to assess road crossing probabilities and collision risk locations:

Royle (2004) defined the N-mixture model that we used and described the output as a "reasonable estimate of abundance based on sparse data". Our estimates are also reasonable and supported by field data such as road mortality sites and telemetry locations and justify our recommendations for potential mitigation measures at the highest wildlife activity areas adjacent to Keri Road.

In a similar context to ours, Santos et al (2018) used a Bayesian hierarchical occupancy detection model to assess locations with higher road crossing risk. We used a Bayesian hierarchical model for abundance/occurrence to identify locations near the road with highest activity levels of the target species as an equivalent to high crossing probability or collision risk.

Santos et al (2018) suggested that their modeling framework provided a means for overcoming bias in road-kill detection and more accurately assessed road crossing risk than raw counts. Our modeling approach likewise was suitable for identifying both current and predicting future collision risk zones. This is pertinent in that, our use of both camera traps and roadkill data to identify roadside locations of high activity by the target species addresses both unsuccessful and successful crossing sites that may change as traffic volume increases over time (also see Schwab and Zandbergen 2011).

Furthermore, Neumann et al (2012) found that roadkill or telemetry data alone were inadequate for assessing road crossing probabilities and collision risk locations. The former tends to overestimate collision risk in certain habitats, while the latter is insufficient to predict collision risk zones. These inadequacies led to our collection of camera trap data (along roadsides) to supplement existing roadkill and telemetry data.

Neumann et al. (2012) also emphasized the importance of spatiotemporal factors in identifying location and timing of collision risk zones. Our findings also demonstrated an influence in spatial arrangement of habitat types and roadside characteristics on locations of highest abundance of each target species. Though we didn't specifically examine diel or seasonal effects, general observations indicate that these did influence timing of increased collision risk.

CORKSCREW ROAD STUDY AREA
RESULTS

Cameras were first deployed at the Corkscrew Road study area in May 2018. We installed a total of 38 cameras during two separate installation periods (early May and early June). All cameras were operational for approximately 12 months, the field work ending in May of 2019. Due to periodic camera malfunctions and obstructions, the number of active camera-trap days varies by site (Table 12). Number of active camera-trap days by site also differs due to the range in number of cameras deployed at each site (see Table 1). These differences were addressed in our statistical evaluation.

Table 12. Active camera-trap days by site and no. of events of target species at Corkscrew Road study area (see fig. 8 for location of study sites).

Study area	Study site/ road segments	Active camera-trap days	All target species	FL panther	Black bear	Bobcat	Whitetail deer
Corkscrew W	0	1426	52	11	0	19	22
Corkscrew W	1	279	45	7	0	2	36
Corkscrew W	2	655	11	0	1	2	8
Corkscrew W	3	1766	167	37	8	75	47
Corkscrew W	4	1056	52	21	0	3	28
Corkscrew N	6	280	7	0	0	6	1
Corkscrew N	7	546	26	0	0	3	23
Corkscrew N	8	336	52	8	0	7	37
Corkscrew N	9	336	120	7	0	8	105
Corkscrew N	10	696	153	6	0	28	119
Corkscrew N	11	664	154	15	0	75	64
Corkscrew N	12	336	103	6	0	2	95
Corkscrew N	14	1373	257	81	10	143	23
Corkscrew N	15	609	11	0	3	1	7
Corkscrew N	16	449	22	6	0	1	15
	Total	**10,807**	**1,232**	**205**	**22**	**375**	**630**

We recorded a total of 1,232 events of the target species (Table 12). Most significant are recorded events of FL panthers (n=205) and their primary prey species, white-tailed deer (n=630). Also, of note are the 375 photo events of bobcats. It is important to note that number of events does not equate to number of individuals. We were unable to identify individuals from photographs. The same individuals likely passed by our cameras numerous times.

Bayesian best estimated unbiased predictors:

The top two measures of abundance for panthers and bobcats were both associated with road segments 11 and 14 but differed for the third measures (Table 13). Black bears were detected at only 4 segments on Corkscrew Road and were highest in road segment 14. Deer were most abundant in road segments 9, 10 and 12.

Site	FL panther	Bobcat	Black bear	Whitetail deer
0	10.33519	7.580648	0	40.74917
1	**22.54763**	10.536818	0	43.49054
2	0	7.095026	72.66336	25.89788
3	15.46777	17.521882	72.27233	58.74828
4	21.50580	4.988763	0	42.56341
6	0	13.980100	0	17.87737
7	0	8.913293	0	35.96873
8	18.38217	14.094903	0	27.87687
9	21.86973	14.505126	0	**78.77906**
10	20.92586	**21.303463**	0	**108.74484**
11	**23.95162**	**40.699933**	0	60.33452
12	20.93526	10.048321	0	**72.78410**
14	**38.79066**	**41.208952**	**77.55734**	40.80511
15	0	10.844449	74.76749	35.45104
16	19.91045	8.156289	0	30.24291

Table 13: Posterior abundance estimates for panther, bobcat and deer at each site on Corkscrew Road as measured by Bayesian best unbiased predictors. The three highest abundance estimates for each species are shown in bold type.

Correlation between covariates:

Several significant correlations between covariates were found in the Corkscrew Road study area (Table 14). In each case where a significant correlation was found, the more informative covariate was selected for each species in each study area (Table 15).

Table 14: Correlations matrix for covariates in the Corkscrew Road study area.

	Adjacent canal	Access road	Centerline to site cluster	Clear zone width	Foot/ bicycle traffic	FWC land cover type	Shrub and tall grass cover	% Tree cover
Adjacent canal	-	0.0852	0.4239	0.0232	0.3962	0.3154	0.4745	0.4035
Access road	-	-	0.0379	0.5262	0.9136	0.3154	0.0565	0.6334
Centerline to site cluster	-	-	-	0.8364	0.9183	0.4926	0.1558	0.9027
Clear zone width	-	-	-	-	0.7872	0.506	0.7376	0.4947
Foot/bicycle traffic	-	-	-	-	-	0.0454	0.2416	0.8908
FWC land cover type	-	-	-	-	-	-	0.2702	0.0031
Shrub and tall grass cover	-	-	-	-	-	-	-	0.0346
% Tree cover	-	-	-	-	-	-	-	-

Note: Significant correlations are listed in red.

Table 15: AIC scores for species abundance models in the Corkscrew Road study area using a single covariate on the state process.

Covariate	FL panther	bobcat	black bear	whitetail deer
Adjacent canal	*530.7455*	*794.7845*	*122.7638*	1759.617
Access road	533.818	801.0462	120.0845	1794.674
Centerline to site cluster	*537.1731*	*801.8479*	*123.7259*	*1796.491*
Clear zone width	497.908	754.9072	121.6838	*1797.914*
Foot/bicycle traffic	*537.0744*	*804.1461*	123.734	*1756.695*
FWC land cover type	497.7836	726.9779	*123.2446*	1709.564
Shrub and tall grass cover	530.349	767.8387	*119.819*	1756.286
Percent tree cover	*529.7126*	*804.6935*	115.3465	*1766.058*

Note: Covariates eliminated from further consideration are shown in gray italics.
Covariates included in the final models for each species were identified by selecting for the lowest AIC score (above) in highly correlated pairs (see Table 14).

Species relative abundance models:

Abundance models containing only the covariate of active camera days showed significant effects on the detection process (FL panther, p=2.28e-14; bobcat, p=2.14e-16; black bear, p=1.33e-02; and whitetail deer, p=0.0196). Shapiro-Wilk normality tests indicated the distribution of events for each species was not normal (FL panther, p<0.0001; bobcat, p<0.0001; black bear, p<0.0001; whitetail deer, p=0.0080), therefore the nonparametric Wilcoxon analysis was used in categorical comparisons.

The best fitting FL panther model (Active days ~ Access Rd + Clear zone width + FWC land cover type; AIC = 494.421) indicated abundance was higher in road segments without an access road, but the association was not significant (Wilcoxon, p=0.9525). However, there was a significant positive correlation between panther abundance and clear zone width (p=0.0051, R^2=0.4655). Panther abundance was also higher in segments associated with FWC land cover categories of *mesic flatwoods* and *marsh impoundments* than with *citrus* or *shrub and brush*, but not significantly so (Wilcoxon, p=0.6034). Results from all panther models are shown in Table 16.

The top performing bobcat model (Active days ~ Access Rd + Clear zone width + FWC land cover type + Shrub and tall grass cover; AIC = 669.476) indicated higher bobcat abundance in segments with no access road present, but this association was insignificant (Wilcoxon, p=0.5146). Yet there was a significant positive correlation between bobcat abundance and clear zone width (p=0.0071, R^2=0.439). Regarding FWC land cover categories, abundance was higher in *citrus* and *mesic flatwoods* than in *marsh impoundments* and *shrub and brush*, but this relationship was also insignificant (Wilcoxon, p=0.7628). Bobcat abundance was higher in the shrub and tall grass cover middle category (1/3-2/3), but not significantly so (Wilcoxon, p=0.0764). Results from all bobcat models are listed in Table 17.

Table 16. AIC (of best-fitting model) and Δ AIC (from best-fitting model) for all 15 considered FL panther abundance models in the Corkscrew Road study area.

Covariate combinations	Δ AIC from best-fitting model	AIC
Access Rd + Clear zone + FWC	0	494.421
Access Rd + Clear zone + FWC + Shrub and tall grass	1.8853	496.306
FWC	3.363	497.7836
Clear zone	3.4874	497.908
Clear zone + FWC	3.4874	497.908
Access Rd + FWC	3.9063	498.327
FWC + Shrub and tall grass	5.2742	499.695
Clear zone + FWC + Shrub and tall grass	5.4558	499.876
Access Rd + FWC + Shrub and tall grass	5.8837	500.304
Clear zone + Shrub and tall grass	18.2366	512.657
Access Rd + Clear zone + Shrub and tall grass	18.9053	513.326
Access Rd + Clear zone	22.4243	516.845
Shrub and tall grass	35.9284	530.349
Access Rd + Shrub and tall grass	37.6252	532.046
Access Rd	39.3974	533.818

Table 17. AIC (of best-fitting model) and Δ AIC (from best-fitting model) for all 15 considered bobcat abundance models in the Corkscrew Road study area.

Covariate combinations	Δ AIC from best-fitting model	AIC
Access Rd + Clear zone + FWC + Shrub and tall grass	0	669.476
Clear zone + FWC + Shrub and tall grass	2.0538	671.53
FWC + Shrub and tall grass	25.0424	694.518
Access Rd + FWC + Shrub and tall grass	26.577	696.053
Access Rd + Clear zone + Shrub and tall grass	45.7726	715.248
Clear zone + FWC	47.8694	717.345
Access Rd + Clear zone + FWC	49.8676	719.343
Clear zone + Shrub and tall grass	53.7365	723.212
Access Rd + FWC	57.4714	726.947
FWC	57.5021	726.9779
Clear zone	85.4314	754.9072
Access Rd + Clear zone	86.9199	756.396
Shrub and grass	98.3629	767.8387
Access Rd + Shrub and tall grass	99.9947	769.471
Access Rd	131.5704	801.0462

The best-fitting black bear model (Active days ~ Percent tree cover; AIC = 115.3465) indicated a positive but insignificant correlation between percent tree cover and bear abundance (p=0.8024, R^2=0.0391). Results from all bear models are shown in Table 18.

Table 18: AIC (of best-fitting model) and Δ AIC (from best-fitting model) for all 15 considered black bear abundance models in the Corkscrew Road study area.

Covariate combinations	Δ AIC from best-fitting model	AIC
Percent tree cover	0	115.3465
Access Rd + Percent tree cover	1.1745	116.521
Clear zone + Percent tree cover	1.5499	116.896
Access Rd + Foot traffic + Percent tree cover	1.839	117.186
Foot traffic + Percent tree cover	1.9456	117.292
Access Rd + Clear zone + Percent tree cover	2.1617	117.508
Clear zone + Foot traffic + Percent tree cover	3.403	118.75
Access Rd + Clear zone + Foot traffic + Percent tree cover	3.7995	119.146
Access Rd	4.738	120.0845
Access Rd + Foot traffic	4.7931	120.14
Clear zone	6.3373	121.6838
Access Rd + Clear zone	6.5001	121.847
Access Rd + Clear zone + Foot traffic	6.7246	122.071
Clear zone + Foot traffic	8.2862	123.633
Foot traffic	8.3875	123.734

The best-fitting whitetail deer model (Active days ~ Adj canal + Access Rd + FWC land cover type + Shrub and tall grass cover; AIC = 1662.46) indicated deer abundance was higher in road segments with an adjacent canal and without an access road, but these relationship were not significant (Wilcoxon, p=0.6371 and p=0.5165, respectively). Bobcat abundance was greatest in road segments where mesic flatwoods was the dominant FWC land cover category, but not significantly so (Wilcoxon, p=0.3072). Lastly, deer abundance was higher in segments characterized by the shrub and tall grass cover middle category (1/3-2/3), but again the relationship was insignificant. Results from all deer models are listed in Table 19.

Other effects:

We collected rainfall and temperature data from the nearest station at Ft. Myers/Naples Airport for the study period May 2018 to May 2019 (fig. 20). There was a peak in rainfall from May to August. This resulted in flooding of all sites within or near marsh areas, making these locations somewhat inaccessible. This also resulted in elevated water levels in roadside channels and swales increasing the barrier effects of the road to terrestrial wildlife movement.

We also examined the effect of season on the number of events recorded for each species group. Based on the data collected, we defined species groups as carnivores (black bear, bobcat, coyote, river otter), ungulates (white-tailed deer, wild hog), meso-mammals (Virginia opossum, raccoon,

nine-banded armadillo), small mammals (rabbits), and avian (wild turkey and sandhill crane). Panthers were evaluated separately. Sites along Corkscrew Road West are shown in fig. 21 (and in tabular form in Appendix F), and sites along Corkscrew Road North are shown in fig. 22 (and in tabular form in Appendix F). Meso- and small- mammals are only shown in Appendix F.

Table 19: AIC (of best-fitting model) and Δ AIC (from best-fitting model) for all 15 considered whitetail deer abundance models in the Corkscrew Road study area.

Covariate comparisons	Δ AIC from best-fitting model	AIC
Adj canal + Access Rd + FWC + Shrub and tall grass	0	1662.46
Adj canal + FWC + Shrub and tall grass	10.5	1672.96
Adj canal + Access Rd + FWC	17.96	1680.42
Adj canal + FWC	23.454	1685.91
Access Rd + FWC + Shrub and tall grass	33.742	1696.2
FWC + Shrub and tall grass	35.837	1698.29
Access Rd + FWC	46.648	1709.1
FWC	47.109	1709.564
Adj canal + Access Rd + Shrub and tall grass	47.817	1710.27
Adj canal + Shrub and tall grass	66.826	1729.28
Shrub and tall grass	93.831	1756.286
Access Rd + Shrub and tall grass	94.45	1756.91
Adj canal + Access Rd	96.869	1759.32
Adj canal	97.162	1759.617
Access Rd	132.219	1794.674

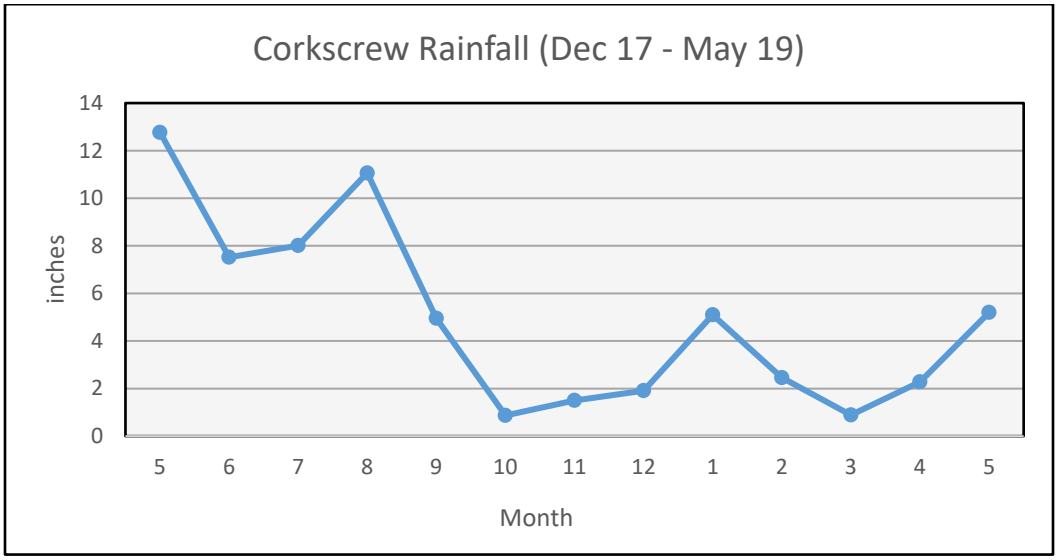

Figure 20. Approximate rainfall amounts for the Corkscrew Road study area (Ft. Myers/Naples Airport data from: NOAA 2019).

At the Corkscrew Road West study area, panthers were most commonly recorded at sites S3, S4 and S0, in that order (fig. 21). The Fall season exhibited the greatest activity. For other carnivores (mostly bobcats), site S3 had the greatest use. In this case the greatest activity occurred in Summer and Fall. Ungulates included mostly deer; they were more frequently captured on camera than any other species. Sites S3 and S1 had the highest number of deer, most often recorded in Fall. Few Avian events were recorded at all sites across all seasons. Notably events of American alligator recorded were minimal, surprising given the amount of water in the impoundment areas in summer at The Place, CMB and Imperial Marsh Preserve. Event records were negligible for all species groups at site S2; this site did not include dry access over the roadside channel and the shrub vegetation growing in the canal was dense.

At the Corkscrew Road North study area, only site S14 exhibited frequent use by panthers, all other sites had nominal events, except S6, S7 and S15 that had none (fig. 22). No seasonal differences were notable. With other carnivores, bobcats again exhibited the dominant presence, especially at S14 and S11. Like panthers, bobcat activity didn't adhere to any seasonal preference. White-tailed deer represented most ungulates at Corkscrew Road North; there were over twice as many as recorded at Corkscrew Road West. Sites S10, S9, S12 and S11 had the highest numbers, in that order. They were most frequently recorded from Spring to Fall. Avian events (mostly turkey) were highest at site S10. Spring had the highest number of Avian events. Site S6 and S15 had minimal activity by all species groups.

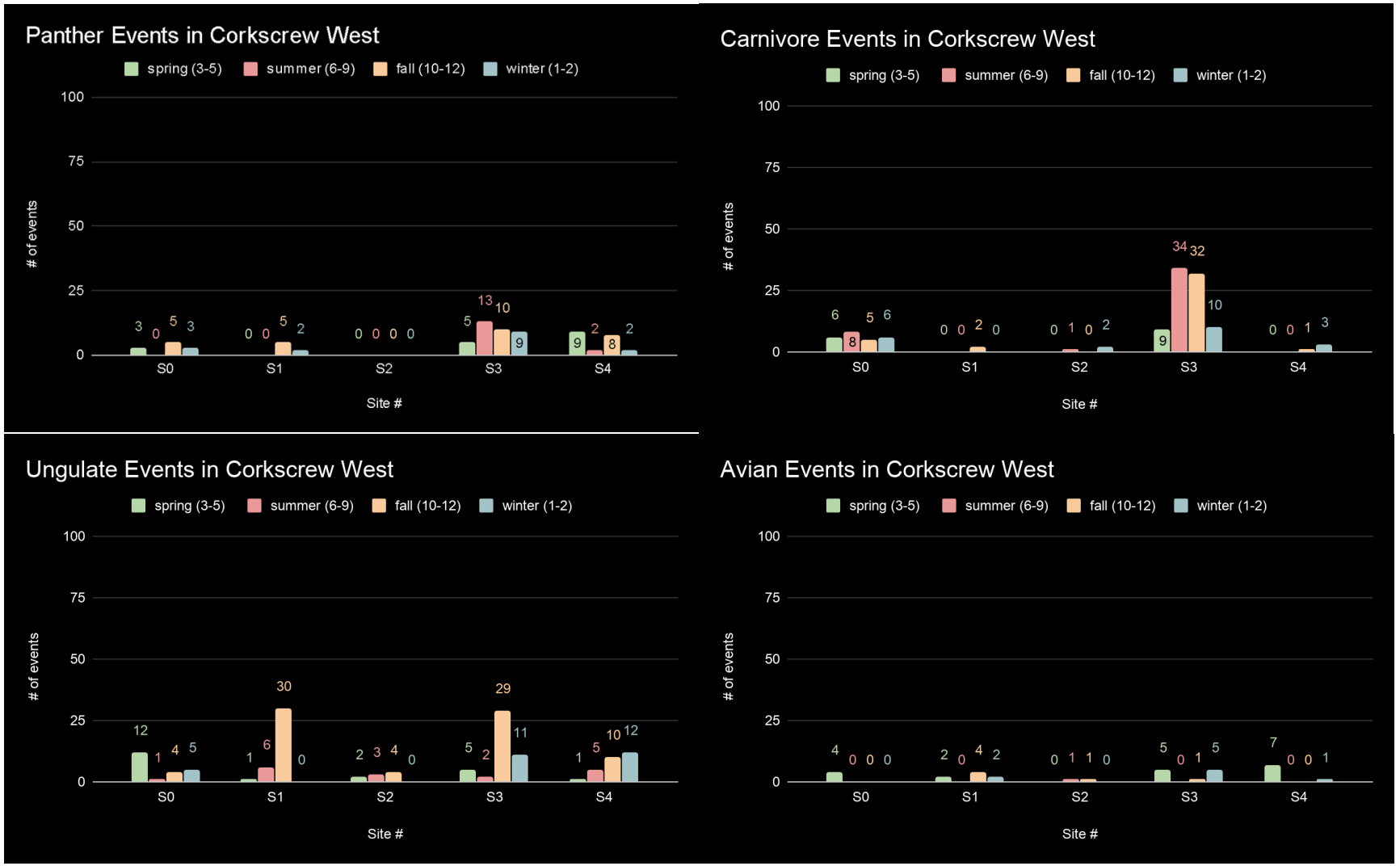

Figure 21. Number of Photo Events by Season by Species for Corkscrew Road West (see fig. 9 for site locations). For meso- and small- mammal event records, see Appendix F.

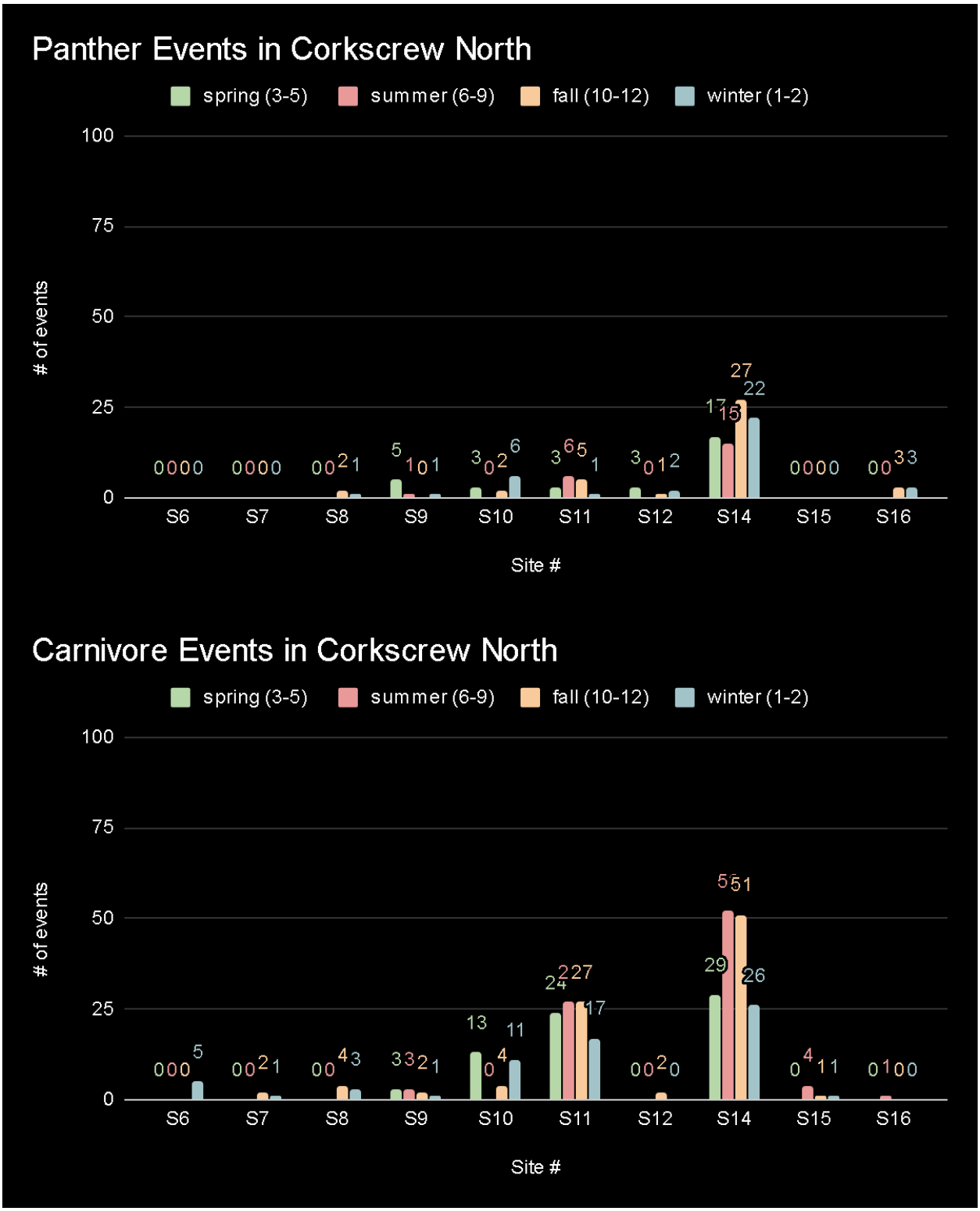

Figure 22. Number of Photo Events by Season by Species for Corkscrew Road North (see fig. 9 for site locations). For meso- and small- mammal event records, see Appendix F.

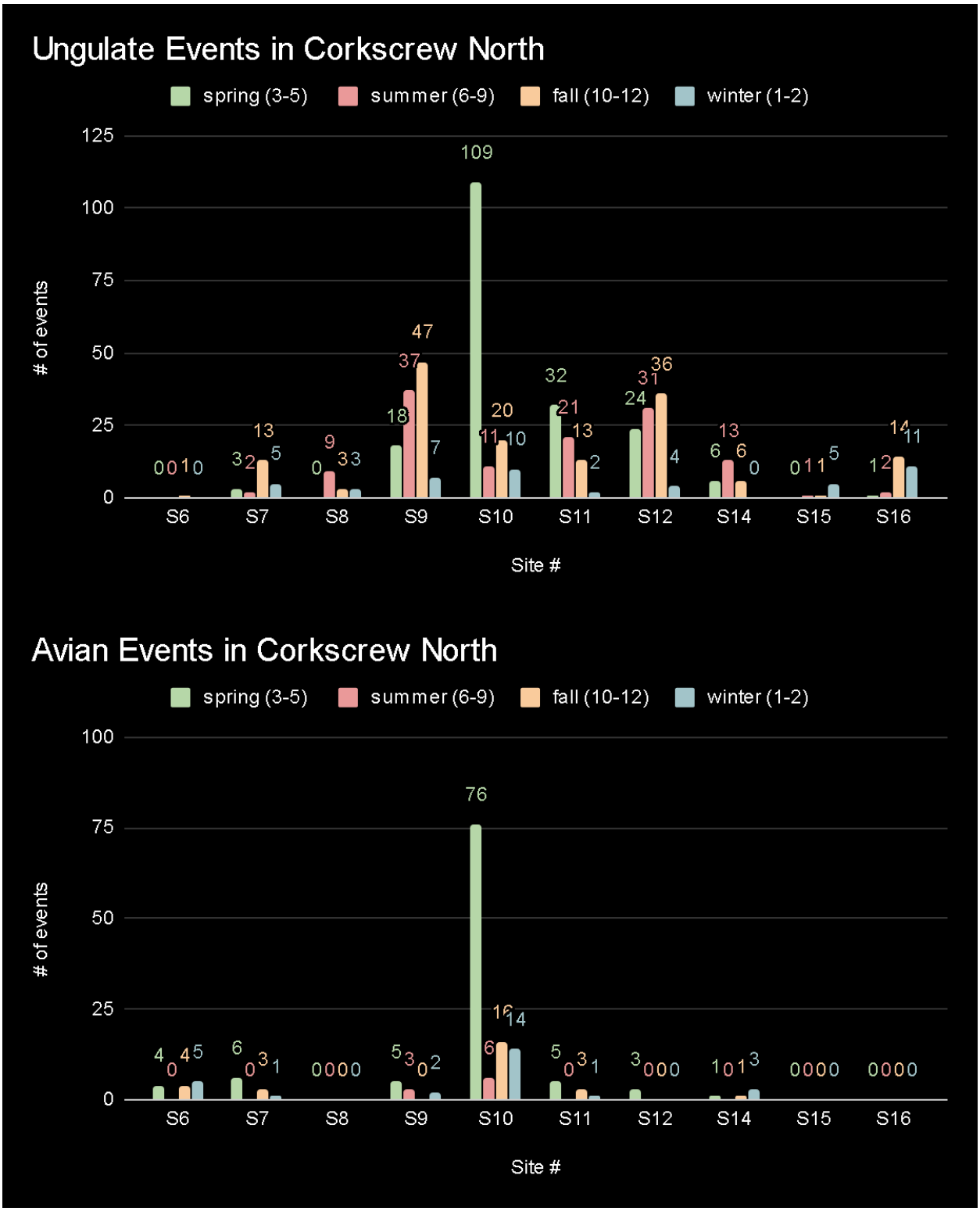

Figure 22. continued.

CORKSCREW ROAD STUDY AREA
DISCUSSION

Field surveys on Corkscrew Road revealed similar parallel roadside swales and a deep irrigation/drainage channel adjacent to the groves. These channels were maintained and dredged with approximate widths of 20-25 and depths up to 15 ft below the raised berm along that side of the road. Wide roadside swales were adjacent to the CREW property, the Corkscrew Mitigation Bank and Imperial Marsh Preserve. Though the swales, at times, may present an obstacle to animal road crossings, they didn't interfere with our roadside animal trail surveys. Five of the sites we monitored were negatively impacted by the deeply carved irrigation/drainage channels.

Our general findings for Corkscrew Road West indicate that with habitat restoration measures, sites S0 (The Place), S3 (CMB) and S4 (Imperial Marsh) could become key road crossing locations for panthers. This is supported by a few scattered telemetry locations within the former groves that occurred between the Airport Mitigation Bank and Corkscrew Swamp Sanctuary. Another potential Corkscrew Road crossing location for panthers in this section of Corkscrew Road is just to the east of the Titan Mine through a Lee County parcel that sits between Imperial Marsh and Corkscrew Swamp Sanctuary. Again, there are telemetry locations that indicate this may already act as a road crossing location for panthers. We were unable to obtain permission to monitor this location for potential use.

On Corkscrew Road North, our results indicate one crossing location (S14) frequently used by panthers. This site coincides with the existing canal under the roadway near the entrance to Alico groves. This canal includes a dense, shrubby strip corridor that leads to SR 82 and a planned site for a wildlife crossing structure. Another site where panther activity was nominal was site S11, where the adjacent irrigation canal is bridged. This appears to be an access point for carnivores to hunt in the groves. We observed panthers, bobcats and coyotes using this location.

Corkscrew Road at present has traffic volume of 4,400 to 7,800 vehicles/day. These levels pose a significant risk for animal-vehicle collisions and result in greater road crossing avoidance behavior (Schwab and Zandbergen 2011). This is worsened by commonly observed high-speed travel. The physical aspects of the roadway-- steep shoulders, adjacent swales and canals and narrow clear zones create little warning to drivers of oncoming animals attempting to cross the road. Because of these conditions, the least expensive remedy for collisions would be a reduced posted speed and increased enforcement. Mitigation for safe wildlife crossings along Corkscrew Road is further complicated by multiple private land ownership and an active real estate and development climate (particularly along Corkscrew Road west study area).

We identified several road crossing locations used by wildlife, facilitated by access roads and trails that allow wildlife to cross adjacent deep-water channels used primarily for agricultural activities. As such, crossing opportunities are potentially many and several challenges exist, both economically and practically, to address entirely with wildlife crossing structures and fencing. Below we provide recommendations based on greatest need, but many of these locations are dependent upon large-scale land use and conservation planning practice.

Corkscrew Road West, Road Crossing Patterns and Recommendations:

Corkscrew Road west study area included 6 road segments, 5 of these were adjacent to protected conservation areas and were monitored (sites 0-4) (fig. 23). To the south were active or abandoned groves and cropland. Access roads were monitored at road segments 0, 1, 2 and 4. Only road segment no. 1 ranked among the top three in our model of posterior abundance estimates (table 14). The low score for road segment no. 0 is certainly reflective of the current cleared/disturbed condition prior to restoration as an upland pine habitat site. Low to medium scores at sites 2, 3 and 4 are also reflective of the character of these areas, dominated by large impoundment wetland areas with strip upland habitat on the north side of the road and commercial agriculture on the south side of the road.

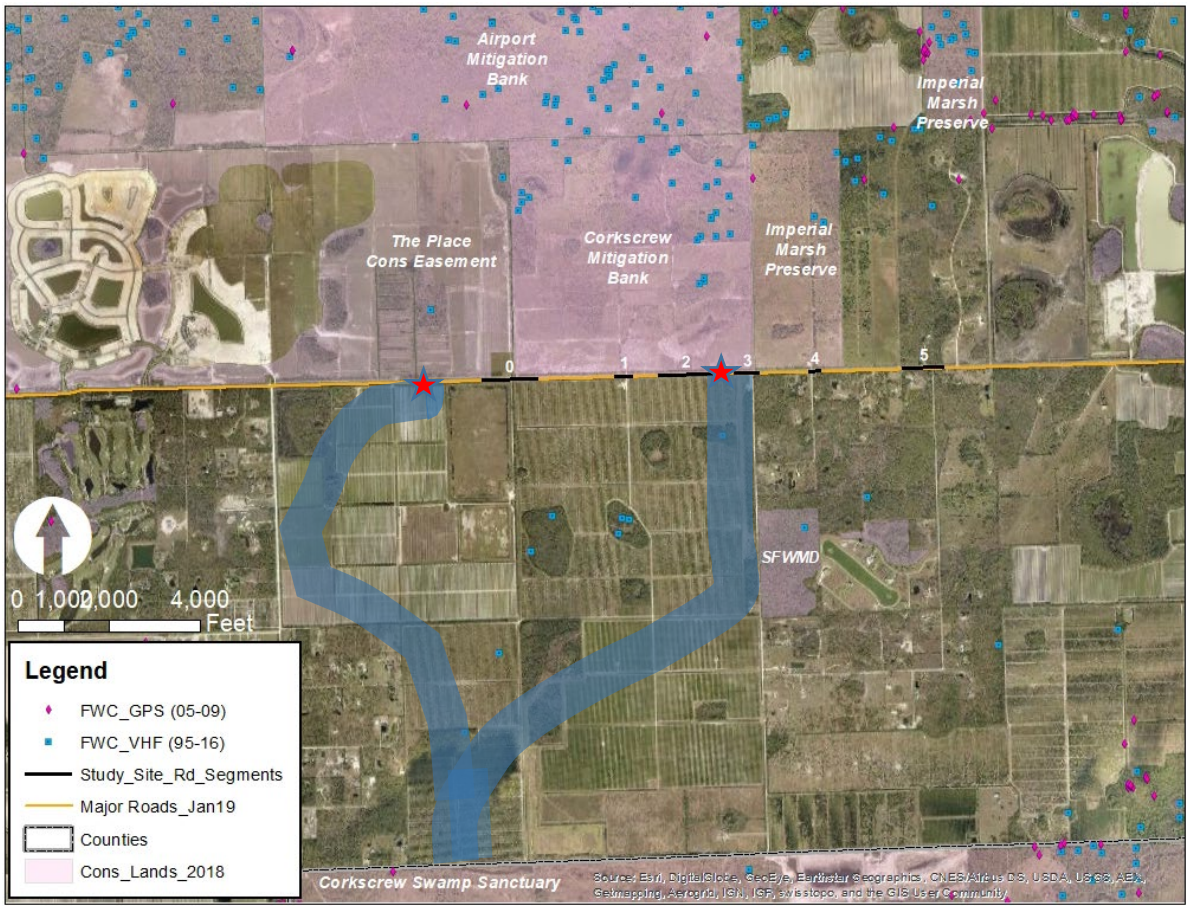

Figure 23. Identified and potential wildlife crossing points at road segments 0-5 on Corkscrew Road. Blue shaded areas represent conceptual conservation linkages between Corkscrew Swamp Sanctuary and the Corkscrew Mitigation Bank and The Place Conservation Easement (upland restoration area). These linkages are proposed at approx. 750 to 1000 ft in width.

Wildlife road crossings in this case are less about existing conditions and more about proposed land use and conservation planning proposals. A proposal to develop the property on the south side of the road (Verdana/Pepperland) would include two wildlife linkages that would assist in restoring historic hydrologic flow patterns (fig. 23). Note the representation shown here is that of the authors, not the property owners and is conceptual in nature generally overlaying where

historic wetland systems used to exist prior to transformation to commercial agriculture. If this proposal becomes a reality, we would recommend wildlife crossing structures where each of these linkages intersect with Corkscrew Road. Site and structural details would have to be worked out as the plans move forward.

An aspect of this that would be required on the Corkscrew Mitigation Bank property to the north at road segment no. 3 is to provide a narrow upland linkage to the wildlife crossing structure from the eastern boundary of the property. This would likely require some reshaping of the impoundment area at the southeast corner of the property. The best and most effective options including details and engineering of this undertaking would have to be investigated as the proposal moves forward.

Considerable panther activity was observed at road segment no. 4 (Imperial Marsh Preserve), though it had a moderate ranking in our analysis. This location is across from a large-lot residential area to the south. This does not provide for any opportunities to include wildlife crossing structures; however, it is entirely reasonable (from our photo evidence and scant telemetry data) to assume panthers do cross at this location and move through the low-density residential area where a substantial amount of the native pine canopy and understory vegetation remains. At present, no panther mortalities have been recorded, however as traffic continues to increase, the road will become more of a barrier to wildlife movement. No mitigation is recommended at present, but this location should remain a watch area for increased risk of animal-vehicle collisions with time.

Although we were unable to obtain permission to monitor it as part of this study, the area shown in fig. 24 does include potential panther crossing locations of Corkscrew Road between the Imperial Marsh Preserve to the north and the CREW and Corkscrew Swamp to the south. Telemetry data indicates that this has been used in the past as a travel pathway between the two areas. Lee County has a significant holding within this travel pathway. We recommend considerations be made to establish a connecting conservation corridor at this location to improve access and use of the Imperial Marsh area by panthers. Providing multiple connections from CREW/Corkscrew Swamp to the greater Imperial Marsh ecosystem (consisting of several conservation easements, mitigation banks and county preserves) increases its value to panthers.

Corkscrew Road North, Road Crossing Patterns and Recommendations:

Two distinct landscape contexts exist in the Corkscrew Road north study area. To the east is public conservation lands (CREW), to the west is active commercial groves (fig. 9). Road segment no. 11 was among the top three ranked sites for panther activity (table 14, fig. 25). This location along with road segment no. 10 provided dry access to the groves and were near a large natural area within the groves. These sites also had high numbers of deer activity. There were 2 panther roadkills recorded at the main trailhead entrance. We did not monitor this site because of the level of human activity.

Although panthers and other wildlife do utilize the groves, it's impractical to plan wildlife crossings or other mitigation measures to enhance connectivity between the two different land uses. Any actions to improve safe access by wildlife to the groves would require a partnership

between the State and Alico Inc. Long-term plans for the groves beyond its use as agriculture would have a strong bearing on future use of the area by panthers and other wildlife. Outside of any agreements between these two parties, if wildlife-vehicle conflicts worsen in this area, exclusionary fencing might be an option. The other option that maintains the current level of connectivity between the two areas, is the use of roadside animal detection systems. However, relative priorities to provide for wildlife connectivity would preclude a significant expenditure on this technology for this area at present.

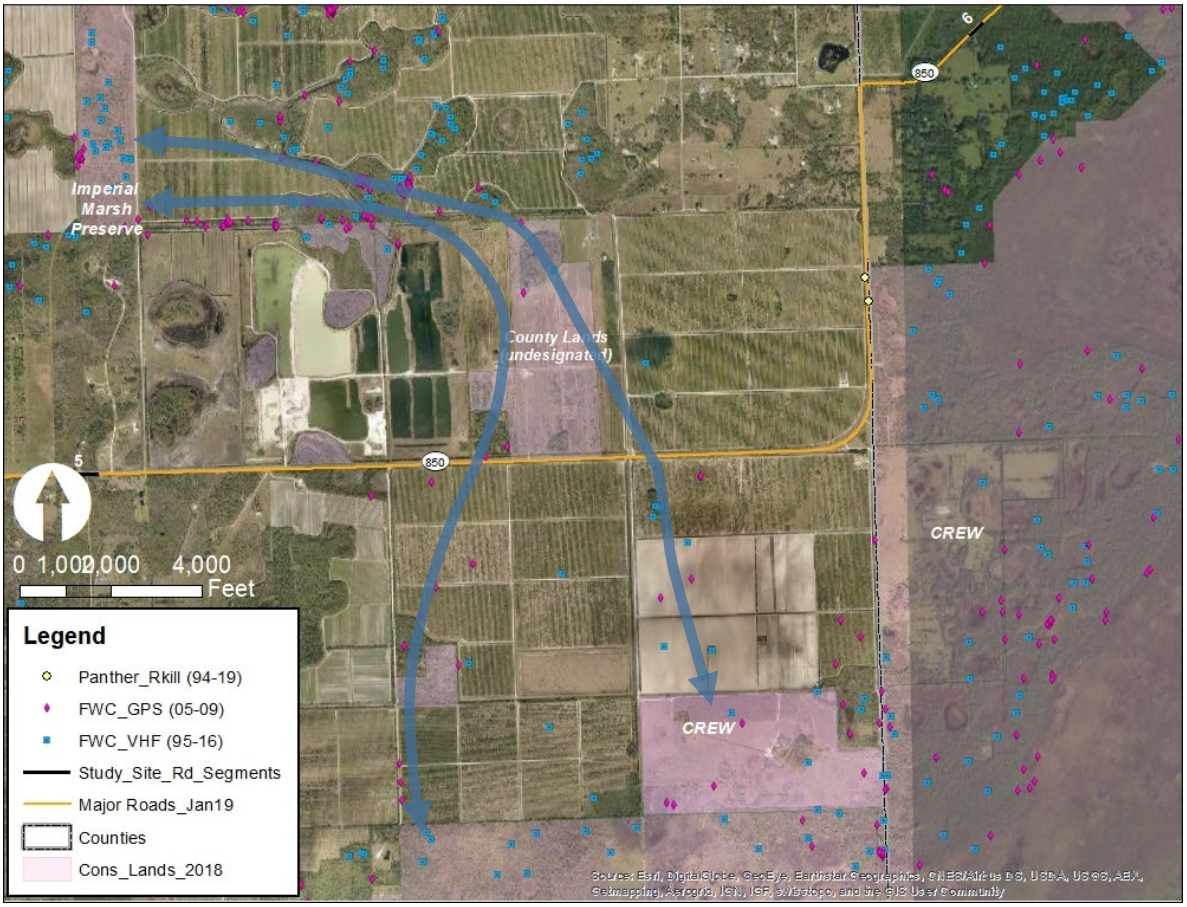

Figure 24. Potential wildlife crossing points on Corkscrew Road between Imperial Marsh Preserve and CREW. Blue arrows represent generalized travel pathways (based on telemetry data) between Imperial Marsh Preserve and CREW/Corkscrew Swamp Sanctuary.

Road segment nos. 14 and 15 are at the northern end of the CREW lands and also border the Alico Inc. groves (fig. 26). These sites are highlighted by two different land use elements, a canal crossing under Corkscrew Road (site 14) and a power transmission line easement (site 15). Next to the canal is the main access road to Alico Inc. groves and therefore a dry access point over the irrigation canal along the border of the groves.

Road segment 14 ranked highest for panther activity among all Corkscrew Road sites. In addition, one panther road mortality was recorded at this location. This location provides a strip corridor between the CREW lands to SR 82 where FDOT is planning to install ledges under the highway for wildlife passage. As such, this site should be considered for similar measures on

Corkscrew Road. Enlarging the existing culvert and installing wildlife ledges would provide safe passage under Corkscrew Road. Wildlife fencing would be needed to direct wildlife to the structure on each side of the canal. A significant impediment to this mitigation is the proximity of the Alico entrance road, chiefly because the roadbed would have to be raised to accommodate a larger culvert fitted with dry path ledges for wildlife.

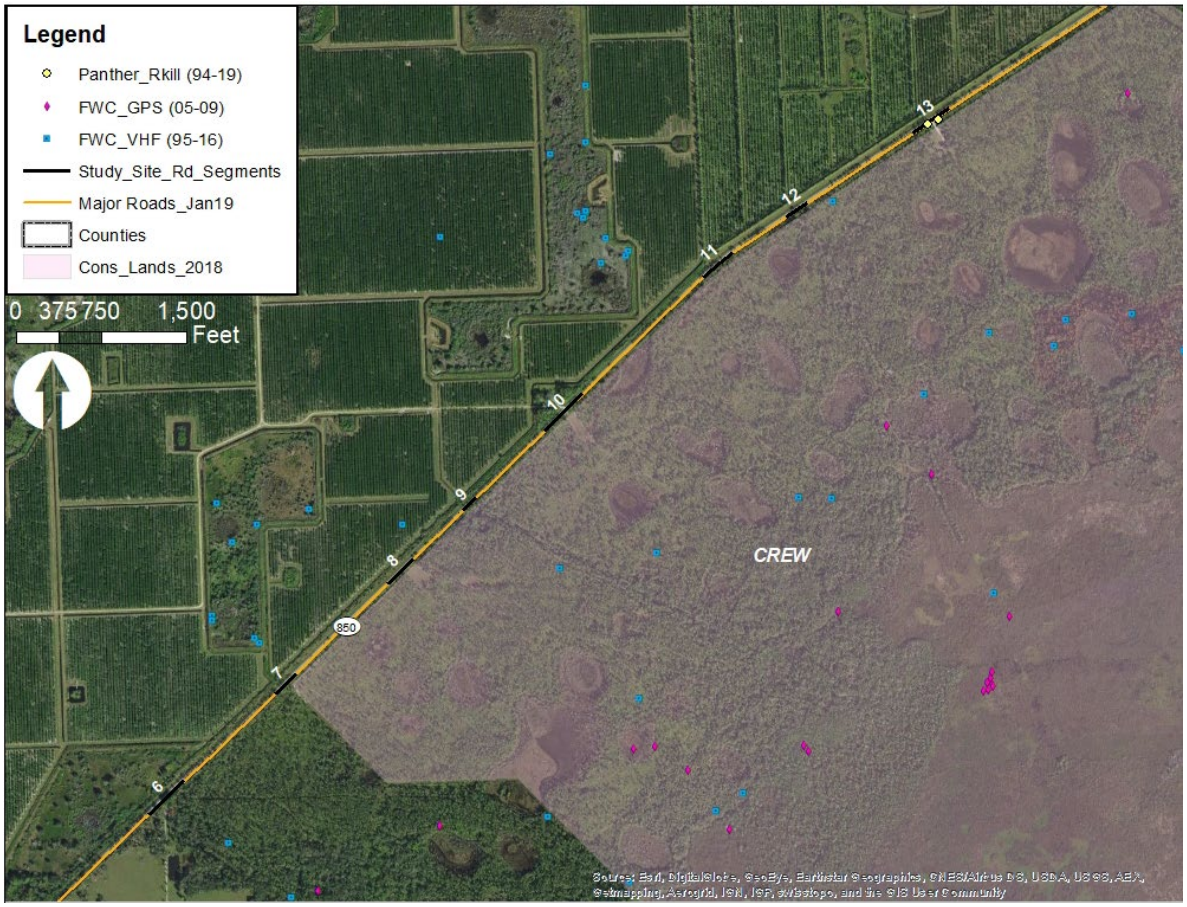

Figure 25. Identified wildlife crossing points on Corkscrew Road between Alico Inc. groves and CREW. Road segment nos. 10 and 11 were the only sites where access roads allowed dry crossing opportunities over the border irrigation canal within the groves. Telemetry locations (in blue) show panther use of internal natural areas within the groves.

We did not record significant wildlife use of the powerline corridors at road segment no. 15 (fig. 26). The powerline corridor is located directly across from residential housing and a commercial site. Due to its location and overall low ranking in our analysis, we do not recommend any mitigation at this location. One additional site monitored, road segment no. 16 (see fig. 9) included an access road that crossed all the canals, yet it was a significant distance through the groves between CREW and SR 82. We recorded minimal wildlife use here, but it was a busy road for grove vehicles and did not include much vegetation cover. At present, it is not a suitable location for wildlife crossing measures.

Figure 26. Identified wildlife crossing points at road segment nos. 14 and 15 on Corkscrew Road. Road segment no. 14 includes a large culvert for a canal that crosses under Corkscrew Road. This canal continues north to SR 82 where FDOT is constructing ledges under the road for wildlife passage. The blue star indicates the location of the existing culvert for the canal.

<u>Potential effects and complexities of state process covariables</u>:

In road segments along Corkscrew Road, higher panther and bobcat abundance were both significantly correlated with wider clear zones. This is contrary to the findings for Keri Road. We think this may be associated with site-specific qualities (i.e., repeated use by panthers and bobcats of two canal crossings along Corkscrew Road that coincide with the widest sections of the clear zone).

Regarding land cover, panthers were more abundant at sites dominated by mesic flatwoods and marsh impoundments than sites where citrus and shrub and brush were dominant. This is explained by site-specific spatial arrangement. The two sites where we recorded the greatest number of panther photo events, were in mesic flatwoods in the CREW and in the narrow tree-lined strip corridors surrounded by expansive marsh impoundments in the Corkscrew Mitigation Bank. Bobcat abundance was greater at sites with land cover types of citrus or mesic flatwoods (found more prominently at Corkscrew North) over marsh impoundments or shrub and brush (more common to Corkscrew West). With respect to influence of vegetation, bobcat abundance

was higher (but insignificantly so) in the shrub and tall grass cover middle category (1/3-2/3), which may be more suitable for hunting small prey.

As was the case in the Keri Road study area, percent tree cover was also positively (but insignificantly) correlated with bear abundance in the Corkscrew Road study area. However, this result is within the context of very few bear captures during the study period.

Deer abundance in Corkscrew Swamp was higher at sites without adjacent access roads, but this relationship was insignificant. As with the situation at Keri Road, this could merely be a preference to avoid people and vehicles. Bobcat abundance was greatest in road segments where mesic flatwoods was the dominant land cover type. This is notably the same land cover preference exhibited at the Keri Road study site.

It is important to note that the analytical procedure we used identifies the most parsimonious and informative model, and performance is dependent on clear representation of the covariates. In the context of Corkscrew Road, we may have under-represented the effect of land cover. We used a basic approach to land cover effect by only including the dominant land cover type within a 0.2 ha area around the centroid of each camera cluster. Therefore, the importance of any secondary land cover types within the study sites was not evaluated (see above example regarding panthers and "primary" use of narrow tree-lined strip corridors). For the Corkscrew Road study area this may have been inadequate but is easily explained from the results with knowledge of site specifics.

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9349	228950	1989-07-2!	FP012	9:12	no data	FWC	I	453021	2909604
9373	228974	1989-07-3:	FP012	9:05	no data	FWC	I	453621	2915304
9394	228995	1989-08-0:	FP012	9:30	no data	FWC	I	453121	2912604
9414	229015	1989-08-0	FP012	7:52	no data	FWC	I	453921	2910004
9970	229571	1989-10-0	FP012	7:34	no data	FWC	I	453921	2902705
10732	226333	1988-10-2	FP012	7:00	no data	FWC	I	451621	2904204
10864	226465	1988-11-1:	FP012	8:45	no data	FWC	I	453821	2903804

10979	226580	1988-11-2	FP012	7:00	no data	FWC	I	453321	2903704
10994	226595	1988-11-3	FP012	7:43	no data	FWC	A	453921	2903804
11061	230662	1990-02-1	FP012	8:18	no data	FWC	I	453421	2914404
11465	231066	1990-03-2	FP012	9:35	no data	FWC	I	455421	2904004
12216	229817	1989-11-0	FP012	12:17	no data	FWC	I	453021	2908004
12682	230283	1990-01-0	FP012	17:11	no data	FWC	I	453321	2914304
12699	230300	1990-01-0	FP012	15:49	no data	FWC	I	452121	2907204
12715	230316	1990-01-0	FP012	11:10	no data	FWC	I	453121	2905004
13160	231761	1990-05-1	FP012	11:31	no data	FWC	I	451021	2906604
13188	231789	1990-05-1	FP012	9:33	no data	FWC	I	453321	2913504
13218	231819	1990-05-2	FP012	10:00	no data	FWC	N	453621	2913904
13239	231840	1990-05-2	FP012	7:05	no data	FWC	A	453421	2909704
13472	232073	1990-06-1	FP012	9:32	no data	FWC	I	452221	2907904
13527	232128	1990-06-1	FP012	9:50	no data	FWC	I	456321	2906404
13722	232323	1990-07-0	FP012	9:44	no data	FWC	A	450821	2910104
14009	226610	1988-12-0	FP012	7:26	no data	FWC	A	455321	2903904
14028	226629	1988-12-0	FP012	7:42	no data	FWC	I	454521	2904404
14572	227173	1989-02-1	FP012	7:45	no data	FWC	I	453321	2909204
14581	227182	1989-02-1	FP012	15:50	no data	FWC	I	452021	2908004
14600	227201	1989-02-1	FP012	15:18	no data	FWC	I	453221	2908104
14808	227409	1989-03-1	FP012	8:00	no data	FWC	A	453121	2903704
14837	227438	1989-03-1	FP012	9:35	no data	FWC	I	452021	2907704
14860	227461	1989-03-1	FP012	15:40	no data	FWC	I	453121	2904504
14967	227568	1989-03-2	FP012	8:56	no data	FWC	I	452621	2908004
14984	227585	1989-03-2	FP012	7:55	no data	FWC	I	453821	2909804
15237	232838	1990-08-1	FP012	8:05	no data	FWC	I	454121	2910604
15263	232864	1990-08-1	FP012	7:55	no data	FWC	A	453921	2911004
15620	233221	1990-09-1	FP012	7:52	no data	FWC	I	454321	2902905
15647	233248	1990-09-1	FP012	10:14	no data	FWC	I	452421	2904504
15884	233485	1990-10-1	FP012	8:06	no data	FWC	I	453621	2914004
15900	233501	1990-10-1	FP012	8:00	no data	FWC	I	452321	2915304
15920	233521	1990-10-1	FP012	12:58	no data	FWC	A	453221	2910004
16009	233610	1990-10-2	FP012	7:54	no data	FWC	I	450921	2906304
16030	233631	1990-10-3	FP012	7:47	no data	FWC	I	452621	2908004
16385	233986	1990-12-1	FP012	7:49	no data	FWC	I	453921	2910404
16482	234083	1990-12-2	FP012	7:43	no data	FWC	A	453121	2910204
16621	234222	1991-01-0	FP012	11:40	no data	FWC	I	453121	2905404
16639	234240	1991-01-1	FP012	7:04	no data	FWC	A	453121	2905004
16918	234519	1991-02-1	FP012	8:10	no data	FWC	I	453021	2910604
17061	234662	1991-02-2	FP012	7:50	no data	FWC	I	453321	2903305
17110	234711	1991-03-0	FP012	7:46	no data	FWC	A	453621	2903105
17205	234806	1991-03-1	FP012	7:34	no data	FWC	A	453921	2910704
17263	234864	1991-03-2	FP012	9:27	no data	FWC	A	455421	2904104
17542	235143	1991-04-1	FP012	7:42	no data	FWC	I	453621	2904204
17679	235280	1991-05-0	FP012	7:16	no data	FWC	I	455521	2904004
17703	235304	1991-05-0	FP012	8:29	no data	FWC	A	452821	2908604
17729	235330	1991-05-0	FP012	7:29	no data	FWC	I	453121	2908604

17859	235460	1991-05-2	FP012	9:45	no data	FWC	I	453921	2911604
18089	235690	1991-06-2	FP012	7:55	no data	FWC	A	452021	2907604
18650	236251	1991-08-2	FP012	8:45	no data	FWC	I	454221	2909904
18989	236590	1991-10-0	FP012	9:42	no data	FWC	I	452121	2904404
19009	236610	1991-10-0	FP012	7:32	no data	FWC	A	453221	2904404
19610	237211	1991-12-1	FP012	9:20	no data	FWC	I	454321	2909904
19632	237233	1991-12-2	FP012	9:18	no data	FWC	I	453721	2913804
20121	238722	1992-06-0	FP012	9:26	no data	FWC	I	452921	2907204
21453	238054	1992-03-2	FP012	9:35	no data	FWC	A	454021	2910204
21472	238073	1992-03-2	FP012	7:48	no data	FWC	A	454021	2910204
22187	239788	1992-09-1	FP012	9:37	no data	FWC	I	455221	2903604
22363	239964	1992-10-0	FP012	8:55	no data	FWC	A	452721	2904504
22385	239986	1992-10-0	FP012	12:56	no data	FWC	I	454221	2904104
22406	240007	1992-10-0	FP012	8:34	no data	FWC	A	454521	2904304
22804	240405	1992-11-2	FP012	8:02	no data	FWC	I	453121	2904204
22888	240489	1992-12-0	FP012	9:14	no data	FWC	I	453021	2903604
22910	240511	1992-12-0	FP012	9:34	no data	FWC	A	453821	2909904
25761	243362	1993-10-1	FP012	9:26	no data	FWC	A	452921	2904404
6594	224195	1988-02-2	FP025	15:50	no data	FWC	I	449321	2904703
6721	224322	1988-03-1	FP025	14:22	no data	FWC	I	450921	2902705
6741	224342	1988-03-1	FP025	7:42	no data	FWC	A	450921	2902505
6870	224471	1988-03-3	FP025	7:40	no data	FWC	I	455521	2904204
7095	224696	1988-04-2	FP025	7:43	no data	FWC	A	453121	2903105
7144	224745	1988-04-2	FP025	9:26	no data	FWC	I	453421	2904904
7212	224813	1988-05-0	FP025	7:50	no data	FWC	A	453021	2904104
7262	224863	1988-05-0	FP025	7:45	no data	FWC	I	452821	2904304
7382	224983	1988-05-2	FP025	7:43	no data	FWC	I	452821	2904104
7413	225014	1988-05-2	FP025	8:21	no data	FWC	A	453121	2904704
7516	225117	1988-06-0	FP025	7:42	no data	FWC	A	453421	2903904
7733	225334	1988-06-2	FP025	9:52	no data	FWC	I	453821	2902705
7777	225378	1988-06-2	FP025	7:42	no data	FWC	A	453321	2904004
7818	225419	1988-07-0	FP025	7:32	no data	FWC	I	454121	2902805
10116	225717	1988-08-0	FP025	7:50	no data	FWC	A	454521	2903704
10173	225774	1988-08-1	FP025	7:50	no data	FWC	I	450821	2902505
10190	225791	1988-08-1	FP025	7:40	no data	FWC	I	455421	2904104
10230	225831	1988-08-1	FP025	7:38	no data	FWC	I	453221	2904104
10239	225840	1988-08-1	FP025	19:04	no data	FWC	A	455121	2905004
10252	225853	1988-08-1	FP025	7:20	no data	FWC	I	455321	2904104
8010	227611	1989-03-2	FP028	8:23	no data	FWC	I	453421	2915704
8027	227628	1989-03-2	FP028	8:00	no data	FWC	I	451921	2916604
8044	227645	1989-03-2	FP028	7:20	no data	FWC	I	451321	2915104
8824	228425	1989-06-0	FP028	7:21	no data	FWC	A	452421	2915704
8846	228447	1989-06-0	FP028	7:30	no data	FWC	I	452021	2916304
14976	227577	1989-03-2	FP028	9:04	no data	FWC	I	453421	2914404
14993	227594	1989-03-2	FP028	7:48	no data	FWC	I	451921	2913604
8233	227834	1989-04-1	FP030	8:05	no data	FWC	I	454621	2906404
8244	227845	1989-04-1	FP030	11:10	no data	FWC	I	452221	2907304

8259	227860	1989-04-1	FP030	10:31	no data	FWC	A	450721	2905604
8282	227883	1989-04-1	FP030	9:50	no data	FWC	A	444021	2904004
8309	227910	1989-04-1	FP030	9:33	no data	FWC	I	446221	2909704
8452	228053	1989-04-3	FP030	15:10	no data	FWC	I	452421	2904104
8467	228068	1989-05-0	FP030	12:27	no data	FWC	I	451021	2903305
8478	228079	1989-05-0	FP030	17:19	no data	FWC	I	450821	2905404
8991	228592	1989-06-2	FP030	8:16	no data	FWC	I	453821	2903005
9160	228761	1989-07-1	FP030	7:49	no data	FWC	A	453721	2903105
8013	227614	1989-03-2	FP031	8:16	no data	FWC	I	454021	2907304
8030	227631	1989-03-2	FP031	7:45	no data	FWC	I	454021	2907204
8047	227648	1989-03-2	FP031	7:35	no data	FWC	I	454021	2907204
8064	227665	1989-03-2	FP031	8:45	no data	FWC	I	454021	2907304
8080	227681	1989-03-2	FP031	7:40	no data	FWC	I	454021	2907204
8097	227698	1989-03-2	FP031	8:56	no data	FWC	I	454021	2907304
8114	227715	1989-03-2	FP031	7:30	no data	FWC	A	453921	2907304
8136	227737	1989-03-3	FP031	7:42	no data	FWC	I	454021	2907304
8163	227764	1989-04-0	FP031	7:55	no data	FWC	A	451821	2909104
8185	227786	1989-04-0	FP031	7:39	no data	FWC	I	454121	2907404
8207	227808	1989-04-0	FP031	7:46	no data	FWC	I	454021	2907204
8234	227835	1989-04-1	FP031	8:00	no data	FWC	I	454021	2907204
8245	227846	1989-04-1	FP031	11:11	no data	FWC	I	452121	2908904
8260	227861	1989-04-1	FP031	10:32	no data	FWC	I	454121	2907404
8283	227884	1989-04-1	FP031	7:32	no data	FWC	A	450721	2904904
8310	227911	1989-04-1	FP031	8:18	no data	FWC	I	454021	2907204
8321	227922	1989-04-1	FP031	8:36	no data	FWC	I	454021	2907904
8337	227938	1989-04-1	FP031	7:30	no data	FWC	I	454021	2907204
8358	227959	1989-04-2	FP031	7:35	no data	FWC	A	451821	2907704
8385	227986	1989-04-2	FP031	8:50	no data	FWC	A	454021	2907204
8397	227998	1989-04-2	FP031	9:00	no data	FWC	A	453121	2908904
8414	228015	1989-04-2	FP031	7:20	no data	FWC	A	453221	2907704
8436	228037	1989-04-2	FP031	9:36	no data	FWC	I	453821	2909104
8468	228069	1989-05-0	FP031	12:20	no data	FWC	I	453621	2907704
8489	228090	1989-05-0	FP031	14:30	no data	FWC	I	453221	2905004
8504	228105	1989-05-0	FP031	17:51	no data	FWC	I	453921	2907604
8530	228131	1989-05-0	FP031	7:55	no data	FWC	A	453121	2908104
8554	228155	1989-05-1	FP031	11:48	no data	FWC	I	453021	2907904
8575	228176	1989-05-1	FP031	8:20	no data	FWC	A	450621	2909304
8602	228203	1989-05-1	FP031	7:54	no data	FWC	I	452621	2907904
8624	228225	1989-05-1	FP031	7:50	no data	FWC	A	453221	2908604
8642	228243	1989-05-1	FP031	7:58	no data	FWC	I	450621	2909904
8669	228270	1989-05-2	FP031	7:55	no data	FWC	I	450021	2910404
8692	228293	1989-05-2	FP031	8:00	no data	FWC	I	450621	2910004
8711	228312	1989-05-2	FP031	7:58	no data	FWC	A	451821	2909104
8751	228352	1989-05-3	FP031	8:49	no data	FWC	I	452521	2908004
8778	228379	1989-06-0	FP031	7:35	no data	FWC	I	452421	2907904
8801	228402	1989-06-0	FP031	7:39	no data	FWC	I	454221	2903005
9677	229278	1989-08-3	FP031	7:40	no data	FWC	A	453021	2904604

11023	230624	1990-02-1	FP031	15:08	no data	FWC	I	451121	2902805
11046	230647	1990-02-1	FP031	8:03	no data	FWC	A	453521	2903804
11191	230792	1990-03-0	FP031	7:33	no data	FWC	I	453021	2910904
11211	230812	1990-03-0	FP031	17:09	no data	FWC	A	453021	2910504
11242	230843	1990-03-0	FP031	16:00	no data	FWC	I	451321	2909504
11272	230873	1990-03-0	FP031	7:30	no data	FWC	A	452921	2908504
11981	231582	1990-05-0	FP031	6:36	no data	FWC	I	450621	2905904
11997	231598	1990-05-0	FP031	7:13	no data	FWC	I	451621	2909004
12226	229827	1989-11-0	FP031	12:15	no data	FWC	I	453121	2904204
12245	229846	1989-11-0	FP031	7:45	no data	FWC	A	452621	2909004
12268	229869	1989-11-0	FP031	8:22	no data	FWC	I	452321	2909104
12287	229888	1989-11-0	FP031	7:55	no data	FWC	I	454321	2910204
12302	229903	1989-11-1	FP031	7:40	no data	FWC	I	454021	2910504
12324	229925	1989-11-1	FP031	8:00	no data	FWC	I	453421	2910304
12343	229944	1989-11-1	FP031	7:40	no data	FWC	I	452921	2911704
12362	229963	1989-11-1	FP031	8:07	no data	FWC	A	454221	2911404
12385	229986	1989-11-2	FP031	8:04	no data	FWC	I	453621	2910704
12404	230005	1989-11-2	FP031	9:44	no data	FWC	I	452821	2909504
12420	230021	1989-11-2	FP031	8:02	no data	FWC	A	451021	2904504
12440	230041	1989-11-2	FP031	10:40	no data	FWC	I	453121	2907904
12453	230054	1989-11-2	FP031	8:24	no data	FWC	I	453121	2907904
12471	230072	1989-12-0	FP031	7:36	no data	FWC	I	451021	2902105
12511	230112	1989-12-0	FP031	7:55	no data	FWC	I	452321	2903804
12528	230129	1989-12-0	FP031	7:36	no data	FWC	I	451321	2903205
12547	230148	1989-12-1	FP031	8:01	no data	FWC	I	453021	2905004
12564	230165	1989-12-1	FP031	7:48	no data	FWC	I	453621	2904404
12623	230224	1989-12-2	FP031	7:50	no data	FWC	I	453221	2902505
12710	230311	1990-01-0	FP031	15:46	no data	FWC	I	453121	2903904
12721	230322	1990-01-0	FP031	11:30	no data	FWC	I	450821	2903405
12825	230426	1990-01-1	FP031	16:00	no data	FWC	I	454521	2903305
12844	230445	1990-01-2	FP031	15:42	no data	FWC	I	453221	2909804
12863	230464	1990-01-2	FP031	15:35	no data	FWC	A	453121	2910604
12882	230483	1990-01-2	FP031	16:26	no data	FWC	I	453121	2905404
13012	231613	1990-05-0	FP031	8:05	no data	FWC	I	453021	2905204
13423	232024	1990-06-0	FP031	8:20	no data	FWC	I	455421	2904104
13614	232215	1990-06-2	FP031	7:54	no data	FWC	I	450921	2906204
14327	226928	1989-01-1	FP031	16:46	no data	FWC	A	455021	2904804
14340	226941	1989-01-1	FP031	15:30	no data	FWC	I	453121	2905204
14358	226959	1989-01-2	FP031	15:54	no data	FWC	I	451421	2903904
14380	226981	1989-01-2	FP031	15:24	no data	FWC	A	451021	2902605
14399	227000	1989-01-2	FP031	15:30	no data	FWC	I	451921	2904304
14422	227023	1989-01-2	FP031	15:46	no data	FWC	I	452621	2909904
14444	227045	1989-01-3	FP031	15:00	no data	FWC	I	454021	2911004
14464	227065	1989-02-0	FP031	15:38	no data	FWC	I	452221	2907404
14482	227083	1989-02-0	FP031	15:29	no data	FWC	I	450821	2902605
14490	227091	1989-02-0	FP031	10:11	no data	FWC	I	453021	2902305
14530	227131	1989-02-0	FP031	16:44	no data	FWC	I	453421	2906304

14548	227149	1989-02-1(	FP031	15:50	no data	FWC	I	451921	2910604
14570	227171	1989-02-1:	FP031	16:46	no data	FWC	I	452721	2909904
14578	227179	1989-02-1-	FP031	7:45	no data	FWC	I	453121	2908804
14592	227193	1989-02-1!	FP031	15:55	no data	FWC	I	453221	2908204
14611	227212	1989-02-1'	FP031	15:12	no data	FWC	I	451821	2903604
14634	227235	1989-02-2(	FP031	15:51	no data	FWC	I	452221	2904504
14652	227253	1989-02-2:	FP031	15:55	no data	FWC	A	452721	2903704
14679	227280	1989-02-2!	FP031	9:20	no data	FWC	I	450921	2908904
14700	227301	1989-02-2'	FP031	15:40	no data	FWC	I	451021	2909004
14710	227311	1989-02-2-	FP031	17:12	no data	FWC	I	449621	2909604
14727	227328	1989-03-0:	FP031	15:36	no data	FWC	A	449721	2909804
14748	227349	1989-03-0:	FP031	15:39	no data	FWC	A	451121	2909604
14775	227376	1989-03-0(	FP031	15:59	no data	FWC	A	453221	2908104
14797	227398	1989-03-0-	FP031	15:54	no data	FWC	I	453021	2907104
14820	227421	1989-03-1(	FP031	8:05	no data	FWC	I	452021	2907104
14849	227450	1989-03-1:	FP031	9:38	no data	FWC	A	452321	2907904
14873	227474	1989-03-1!	FP031	15:42	no data	FWC	I	453821	2907504
14891	227492	1989-03-1(	FP031	15:56	no data	FWC	I	454021	2907204
14909	227510	1989-03-1'	FP031	7:45	no data	FWC	I	454021	2907204
14927	227528	1989-03-1-	FP031	7:30	no data	FWC	I	454021	2907304
14945	227546	1989-03-1!	FP031	7:50	no data	FWC	I	454021	2907204
14962	227563	1989-03-2(	FP031	9:34	no data	FWC	A	453421	2907704
14979	227580	1989-03-2:	FP031	8:54	no data	FWC	I	454021	2907304
14996	227597	1989-03-2:	FP031	7:42	no data	FWC	I	453921	2907204
15889	233490	1990-10-1!	FP031	8:00	no data	FWC	I	453521	2904904
15907	233508	1990-10-1'	FP031	7:50	no data	FWC	I	452921	2903704
15927	233528	1990-10-1!	FP031	12:54	no data	FWC	I	452421	2904504
15951	233552	1990-10-2:	FP031	9:00	no data	FWC	I	452821	2903105
15971	233572	1990-10-2-	FP031	13:32	no data	FWC	I	452621	2903205
15992	233593	1990-10-2(	FP031	8:15	no data	FWC	I	452821	2903704
16016	233617	1990-10-2!	FP031	7:50	no data	FWC	I	453521	2904204
16038	233639	1990-10-3:	FP031	7:43	no data	FWC	I	453121	2904404
16084	233685	1990-11-0!	FP031	7:48	no data	FWC	I	454121	2902805
16104	233705	1990-11-0'	FP031	9:41	no data	FWC	I	452821	2903904
16126	233727	1990-11-0!	FP031	7:46	no data	FWC	I	455421	2904904
16212	233813	1990-11-1!	FP031	7:39	no data	FWC	I	454421	2903105
16278	233879	1990-11-2(	FP031	9:44	no data	FWC	I	456121	2905604
16335	233936	1990-12-0:	FP031	7:48	no data	FWC	I	455721	2904504
16353	233954	1990-12-0!	FP031	7:34	no data	FWC	X	455221	2904304
16392	233993	1990-12-1(	FP031	7:50	no data	FWC	I	454021	2910504
16431	234032	1990-12-1-	FP031	9:02	no data	FWC	I	452721	2909104
16453	234054	1990-12-1'	FP031	7:36	no data	FWC	X	452421	2908804
16471	234072	1990-12-1!	FP031	8:07	no data	FWC	I	453221	2908204
16490	234091	1990-12-2:	FP031	7:40	no data	FWC	X	453121	2908004
16528	234129	1990-12-2'	FP031	8:55	no data	FWC	I	454321	2905704
16550	234151	1990-12-3:	FP031	8:28	no data	FWC	I	455821	2904604
16680	234281	1991-01-1!	FP031	7:10	no data	FWC	X	454821	2904304

16772	234373	1991-01-2	FP031	11:45	no data	FWC	X	455521	2904104
16794	234395	1991-01-2	FP031	8:10	no data	FWC	A	452021	2904204
16981	234582	1991-02-1	FP031	7:19	no data	FWC	X	452921	2904304
17009	234610	1991-02-2	FP031	8:29	no data	FWC	X	455821	2905004
17713	235314	1991-05-0	FP031	8:53	no data	FWC	I	453121	2908104
17739	235340	1991-05-0	FP031	7:24	no data	FWC	A	450821	2909904
17761	235362	1991-05-1	FP031	7:55	no data	FWC	I	453221	2903305
19698	237299	1991-12-3	FP031	9:25	no data	FWC	I	453121	2905204
19726	237327	1992-01-0	FP031	7:40	no data	FWC	I	449321	2905003
19749	237350	1992-01-0	FP031	8:51	no data	FWC	A	452321	2907904
19767	237368	1992-01-1	FP031	9:56	no data	FWC	A	451821	2906204
19795	237396	1992-01-1	FP031	8:45	no data	FWC	A	453021	2904704
21349	237950	1992-03-1	FP031	11:13	no data	FWC	I	452921	2904504
21369	237970	1992-03-1	FP031	9:50	no data	FWC	A	453721	2904104
21391	237992	1992-03-1	FP031	7:54	no data	FWC	A	453221	2904304
21435	238036	1992-03-2	FP031	10:25	no data	FWC	I	455421	2904104
22473	240074	1992-10-1	FP031	7:46	no data	FWC	A	451921	2904204
22496	240097	1992-10-1	FP031	8:45	no data	FWC	I	450721	2903405
22515	240116	1992-10-2	FP031	8:34	no data	FWC	I	451321	2903305
22536	240137	1992-10-2	FP031	10:07	no data	FWC	I	450821	2904204
25703	243304	1993-10-1	FP031	9:35	no data	FWC	I	452721	2904504
25724	243325	1993-10-1	FP031	8:48	no data	FWC	A	454521	2904404
25745	243346	1993-10-1	FP031	7:44	no data	FWC	I	456121	2905304
8625	228226	1989-05-1	FP032	8:00	no data	FWC	A	450921	2900905
8948	228549	1989-06-1	FP032	7:25	no data	FWC	A	453321	2902805
12269	229870	1989-11-0	FP032	8:23	no data	FWC	A	454121	2904104
12722	230323	1990-01-0	FP032	11:00	no data	FWC	I	453421	2903804
12845	230446	1990-01-2	FP032	15:37	no data	FWC	A	453921	2904004
14531	227132	1989-02-0	FP032	16:39	no data	FWC	I	452321	2901105
14549	227150	1989-02-1	FP032	15:44	no data	FWC	A	452921	2902405
14571	227172	1989-02-1	FP032	16:43	no data	FWC	I	452721	2904504
14653	227254	1989-02-2	FP032	15:50	no data	FWC	I	453121	2903704
53500	272101	2001-01-0	FP032	8:22	no data	FWC	X	454121	2904104
53531	272132	2001-01-0	FP032	7:44	no data	FWC	X	452821	2908104
53559	272160	2001-01-1	FP032	8:21	no data	FWC	X	452821	2908104
53632	272233	2001-01-1	FP032	7:55	no data	FWC	X	453421	2903904
53663	272264	2001-01-1	FP032	10:24	no data	FWC	X	453021	2904204
53759	272360	2001-01-2	FP032	7:55	no data	FWC	X	453621	2904704
53837	272438	2001-01-3	FP032	11:23	no data	FWC	X	453521	2908004
53867	272468	2001-02-0	FP032	11:58	no data	FWC	X	452021	2907904
53902	272503	2001-02-0	FP032	8:06	no data	FWC	X	452021	2907904
53936	272537	2001-02-0	FP032	7:49	no data	FWC	X	453121	2905404
55265	272866	2001-02-2	FP032	7:42	no data	FWC	X	453221	2904004
55406	273007	2001-03-0	FP032	7:56	no data	FWC	X	455921	2905604
55438	273039	2001-03-1	FP032	7:59	no data	FWC	X	454221	2902505
55574	273175	2001-03-2	FP032	8:34	no data	FWC	X	453421	2904604
56128	273729	2001-04-2	FP032	8:05	no data	FWC	X	453821	2903405

56346	273947	2001-05-1	FP032	7:52	no data	FWC	X		455021	2904204
59431	277032	2001-12-2	FP032	7:46	no data	FWC	I		453321	2902605
59651	277252	2002-01-0	FP032	8:04	no data	FWC	A		455121	2904104
59676	277277	2002-01-1	FP032	8:09	no data	FWC	A		454021	2904004
59712	277313	2002-01-1	FP032	8:02	no data	FWC	X		454021	2907204
60403	279004	2002-05-0	FP032	8:54	no data	FWC	A		454721	2905904
60442	279043	2002-05-0	FP032	7:57	no data	FWC	A		450621	2901705
60481	279082	2002-05-0	FP032	7:58	no data	FWC	I		453821	2903405
60520	279121	2002-05-0	FP032	7:58	no data	FWC	I		451921	2904204
60630	279231	2002-05-1	FP032	7:49	no data	FWC	A		454021	2903405
60742	279343	2002-05-2	FP032	7:44	no data	FWC	I		453721	2902705
60952	279553	2002-06-0	FP032	7:49	no data	FWC	I		453121	2903205
60991	279592	2002-06-0	FP032	7:37	no data	FWC	I		452321	2901105
62030	279631	2002-06-1	FP032	7:40	no data	FWC	I		453621	2906904
62577	280178	2002-07-1	FP032	7:59	no data	FWC	I		453121	2903604
11025	230626	1990-02-1	FP034	15:08	no data	FWC	I		451121	2902805
11048	230649	1990-02-1	FP034	8:03	no data	FWC	A		453521	2903804
11193	230794	1990-03-0	FP034	7:33	no data	FWC	I		453021	2910904
11213	230814	1990-03-0	FP034	17:09	no data	FWC	A		453021	2910504
11244	230845	1990-03-0	FP034	16:00	no data	FWC	I		451321	2909504
11274	230875	1990-03-0	FP034	7:30	no data	FWC	A		452921	2908504
11912	231513	1990-04-2	FP034	7:46	no data	FWC	I		441121	2903305
11965	231566	1990-05-0	FP034	6:35	no data	FWC	A		453721	2907704
11983	231584	1990-05-0	FP034	6:45	no data	FWC	A		450821	2910704
11998	231599	1990-05-0	FP034	6:45	no data	FWC	A		453621	2909704
12738	230339	1990-01-0	FP034	8:45	no data	FWC	A		452721	2904504
12827	230428	1990-01-1	FP034	16:00	no data	FWC		0	454521	2903305
12846	230447	1990-01-2	FP034	15:42	no data	FWC	A		453221	2909804
12865	230466	1990-01-2	FP034	15:35	no data	FWC	I		453121	2910604
12884	230485	1990-01-2	FP034	16:26	no data	FWC	I		453121	2905404
13014	231615	1990-05-0	FP034	8:10	no data	FWC	I		453721	2903804
21358	237959	1992-03-1	FP048	11:13	no data	FWC	I		452921	2904504
21377	237978	1992-03-1	FP048	9:50	no data	FWC	A		453721	2904104
21400	238001	1992-03-1	FP048	7:54	no data	FWC	A		453221	2904304
21444	238045	1992-03-2	FP048	10:25	no data	FWC	I		455421	2904104
22484	240085	1992-10-1	FP048	7:46	no data	FWC	A		451921	2904204
22505	240106	1992-10-1	FP048	8:45	no data	FWC	I		450721	2903405
22526	240127	1992-10-2	FP048	8:34	no data	FWC	I		451321	2903305
22547	240148	1992-10-2	FP048	10:07	no data	FWC	I		450821	2904204
27215	244816	1994-04-1	FP051	7:41	no data	FWC	A		453821	2902605
22487	240088	1992-10-1	FP052	7:46	no data	FWC	A		451921	2904204
22508	240109	1992-10-1	FP052	8:45	no data	FWC	I		450721	2903405
22529	240130	1992-10-2	FP052	8:34	no data	FWC	I		451321	2903305
22550	240151	1992-10-2	FP052	10:07	no data	FWC	I		450821	2904204
23152	240753	1992-12-3	FP052	12:10	no data	FWC	I		452221	2904504
23178	240779	1993-01-0	FP052	9:59	no data	FWC	I		449521	2905003
23199	240800	1993-01-0	FP052	14:40	no data	FWC	I		450721	2905904

23221	240822	1993-01-0	FP052	9:19	no data	FWC	I	450821	2903604
23243	240844	1993-01-1	FP052	11:40	no data	FWC	I	450421	2903405
29183	246784	1995-02-1	FP057	7:47	no data	FWC	A	452521	2901205
29203	246804	1995-02-1	FP057	10:39	no data	FWC	A	453321	2905404
29314	246915	1995-03-0	FP057	7:37	no data	FWC	I	450621	2903305
29328	246929	1995-03-0	FP057	8:27	no data	FWC	I	450921	2902005
29739	247340	1995-04-2	FP057	12:34	no data	FWC	I	449721	2901804
30878	248479	1995-08-1	FP057	7:37	no data	FWC	I	452921	2902105
31044	248645	1995-09-0	FP057	8:05	no data	FWC	I	452121	2904304
31065	248666	1995-09-0	FP057	8:00	no data	FWC	I	453421	2904804
32051	249652	1995-12-1	FP057	7:57	no data	FWC	I	451121	2902205
32071	249672	1995-12-2	FP057	7:55	no data	FWC	I	451521	2906904
32089	249690	1995-12-2	FP057	7:44	no data	FWC	I	452421	2903305
33577	252178	1996-08-2	FP057	7:46	no data	FWC	I	452021	2903504
33601	252202	1996-08-2	FP057	7:59	no data	FWC	I	453121	2903604
33662	252263	1996-09-0	FP057	7:48	no data	FWC	I	450621	2901805
34413	253014	1996-11-1	FP059	9:17	no data	FWC	I	452621	2904404
34436	253037	1996-11-2	FP059	7:58	no data	FWC	I	450421	2903505
34460	253061	1996-11-2	FP059	7:47	no data	FWC	I	451421	2903205
34532	253133	1996-11-2	FP059	7:53	no data	FWC	I	454721	2904204
34556	253157	1996-12-0	FP059	7:56	no data	FWC	I	453521	2904504
34722	253323	1996-12-1	FP059	8:14	no data	FWC	I	452221	2907304
34746	253347	1996-12-2	FP059	7:42	no data	FWC	I	452221	2907304
34768	253369	1996-12-2	FP059	8:11	no data	FWC	A	453921	2904104
34793	253394	1996-12-2	FP059	8:02	no data	FWC	I	453921	2907104
34821	253422	1997-01-0	FP059	8:08	no data	FWC	I	452121	2903604
34867	253468	1997-01-0	FP059	12:01	no data	FWC	I	453621	2908004
34889	253490	1997-01-1	FP059	7:49	no data	FWC	A	451121	2903904
34913	253514	1997-01-1	FP059	8:06	no data	FWC	I	449521	2903004
34963	253564	1997-01-1	FP059	7:58	no data	FWC	A	451021	2905904
34987	253588	1997-01-2	FP059	7:58	no data	FWC	A	455221	2904304
36088	253689	1997-01-2	FP059	9:15	no data	FWC	I	452721	2903504
36113	253714	1997-01-3	FP059	7:52	no data	FWC	A	450821	2906504
36152	253753	1997-02-0	FP059	8:13	no data	FWC	I	455621	2904304
36260	253861	1997-02-1	FP059	11:08	no data	FWC	I	454221	2904104
36294	253895	1997-02-1	FP059	8:03	no data	FWC	I	455621	2904704
36402	254003	1997-02-1	FP059	9:38	no data	FWC	I	453121	2905204
36436	254037	1997-02-2	FP059	8:02	no data	FWC	I	454421	2904604
36626	254227	1997-03-0	FP059	7:57	no data	FWC	I	453121	2905004
36846	254447	1997-03-2	FP059	8:15	no data	FWC	I	452121	2903604
36874	254475	1997-03-2	FP059	7:50	no data	FWC	I	450721	2905904
37025	256626	1997-09-1	FP059	7:55	no data	FWC	I	454621	2906404
37054	256655	1997-09-1	FP059	7:51	no data	FWC	A	453521	2904604
37785	257386	1997-11-1	FP059	7:41	no data	FWC	I	454021	2907204
37814	257415	1997-11-2	FP059	7:41	no data	FWC	I	454021	2907204
37844	257445	1997-11-2	FP059	10:20	no data	FWC	I	453121	2908104
37874	257475	1997-11-2	FP059	7:59	no data	FWC	I	453521	2907004

37934	257535	1997-12-0	FP059	7:32	no data	FWC	I	453721	2908204
37968	257569	1997-12-0	FP059	7:33	no data	FWC	I	452221	2907304
38136	255737	1997-07-0	FP059	7:59	no data	FWC	I	451921	2903904
38196	255797	1997-07-1	FP059	8:11	no data	FWC	A	452221	2904504
38426	256027	1997-07-3	FP059	8:13	no data	FWC	I	451821	2903604
38814	256415	1997-08-2	FP059	7:57	no data	FWC	A	451821	2906204
38843	256444	1997-09-0	FP059	7:56	no data	FWC	A	450821	2903005
39261	254862	1997-04-2	FP059	10:11	no data	FWC	I	450521	2904804
39466	255067	1997-05-1	FP059	8:26	no data	FWC	I	454421	2904404
39614	255215	1997-05-2	FP059	9:10	no data	FWC	I	451421	2904304
39759	255360	1997-06-0	FP059	7:45	no data	FWC	A	450621	2905104
39785	255386	1997-06-0	FP059	8:08	no data	FWC	I	451821	2904404
39961	255562	1997-06-2	FP059	7:52	no data	FWC	A	451121	2902505
40262	257863	1997-12-3	FP059	8:09	no data	FWC	A	453121	2905204
40286	257887	1997-12-3	FP059	7:50	no data	FWC	I	453121	2905204
40312	257913	1998-01-0	FP059	8:08	no data	FWC	I	450221	2902005
40438	258039	1998-01-1	FP059	7:43	no data	FWC	I	456021	2905404
41554	259155	1998-04-0	FP059	7:51	no data	FWC	A	453521	2908204
41585	259186	1998-04-1	FP059	7:51	no data	FWC	I	453121	2908104
42210	259811	1998-05-2	FP059	7:44	no data	FWC	I	453321	2904804
42241	259842	1998-05-2	FP059	7:36	no data	FWC	A	453321	2907804
42366	259967	1998-06-0	FP059	7:52	no data	FWC	A	453721	2908004
42488	260089	1998-06-1	FP059	7:46	no data	FWC	A	451821	2904104
42518	260119	1998-06-1	FP059	7:41	no data	FWC	I	451721	2904204
42613	260214	1998-06-2	FP059	7:49	no data	FWC	I	452221	2907804
42677	260278	1998-07-0	FP059	7:25	no data	FWC	I	453121	2904604
44614	262215	1998-12-0	FP059	7:49	no data	FWC	I	451321	2903405
44645	262246	1998-12-0	FP059	7:45	no data	FWC	I	450721	2902105
44962	262563	1998-12-3	FP059	7:45	no data	FWC	A	450421	2904404
46658	264259	1999-05-0	FP059	7:43	no data	FWC	A	453421	2908104
49182	266783	1999-11-2	FP059	12:55	no data	FWC	I	450221	2903505
49209	266810	1999-11-2	FP059	11:49	no data	FWC	I	453621	2904804
49234	266835	1999-11-2	FP059	9:25	no data	FWC	I	454821	2904604
49854	267455	2000-01-2	FP059	8:03	no data	FWC	I	455421	2906504
49881	267482	2000-01-2	FP059	8:03	no data	FWC	A	453421	2908204
50020	267621	2000-02-0	FP059	8:58	no data	FWC	I	453121	2904104
50105	267706	2000-02-1	FP059	7:54	no data	FWC	A	453721	2903005
50276	267877	2000-02-2	FP059	7:55	no data	FWC	I	454021	2903005
50383	267984	2000-03-0	FP059	7:47	no data	FWC	I	454221	2904304
50735	268336	2000-04-0	FP059	7:52	no data	FWC	I	450421	2902805
50768	268369	2000-04-0	FP059	7:46	no data	FWC	I	453421	2904304
51811	269412	2000-06-1	FP059	8:06	no data	FWC	I	452621	2904404
52088	269689	2000-07-0	FP059	8:01	no data	FWC	I	451421	2905104
55680	273281	2001-03-2	FP059	7:52	no data	FWC	X	454721	2903105
56058	273659	2001-04-2	FP059	8:05	no data	FWC	X	452221	2904604
57966	275567	2001-08-3	FP059	8:22	no data	FWC	X	450921	2903704
58405	276006	2001-10-1	FP059	8:04	no data	FWC	X	450821	2902005

59058	276659	2001-11-2	FP059		8:07	no data	FWC	X	452321	2904404
59202	276803	2001-12-1	FP059		8:37	no data	FWC	X	451621	2904404
59239	276840	2001-12-1	FP059		8:50	no data	FWC	X	451721	2907504
59350	276951	2001-12-1	FP059		8:15	no data	FWC	X	451321	2903704
59500	277101	2001-12-2	FP059		8:05	no data	FWC	X	450721	2907904
60000	278601	2002-04-0	FP059		7:54	no data	FWC	X	452621	2904404
60288	278889	2002-04-2	FP059		8:00	no data	FWC	X	452121	2904604
60366	278967	2002-04-2	FP059		7:58	no data	FWC	X	453421	2906604
60593	279194	2002-05-1	FP059		7:33	no data	FWC	X	454321	2902705
60632	279233	2002-05-1	FP059		7:44	no data	FWC	X	451821	2904404
60707	279308	2002-05-2	FP059		11:44	no data	FWC	X	448821	2908604
60744	279345	2002-05-2	FP059		7:49	no data	FWC	X	448821	2906304
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63892	281493	2002-10-1	FP059		7:54	no data	FWC	X	450921	2903604
63919	281520	2002-10-1	FP059		7:47	no data	FWC	X	450021	2901904
63963	281564	2002-10-2	FP059		8:00	no data	FWC	X	453021	2902005
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64526	283127	2003-03-1	FP059		7:51	no data	FWC	X	450821	2903704
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70265	287866	2004-05-2	FP059	7:32	no data	FWC	X	451179	2902741
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70925	288526	2004-07-1	FP131	7:36	no data	FWC	G	451598	2904204

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72881	291482	2005-04-1	FP131	7:46	no data	FWC	x	456116	2905335
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82624	300225	2007-05-2	FP131	7:36	no data	FWC		453760	2913833
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83134	300735	2007-07-1	FP131	7:22	no data	FWC		453736	2902709
83155	300756	2007-07-1	FP131	7:35	no data	FWC		454704	2911827
83177	300778	2007-07-2	FP131	7:50	no data	FWC		453725	2912131
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83410	301011	2007-08-1	FP131	7:52	no data	FWC		452669	2904293
83446	301047	2007-08-2	FP131	8:28	no data	FWC		450731	2905423

83465	301066	2007-08-2	FP131	7:53	no data	FWC	452860	2909318
83483	301084	2007-08-2	FP131	8:23	no data	FWC	454032	2914897
83503	301104	2007-08-2	FP131	10:15	no data	FWC	453925	2914857
83524	301125	2007-08-3	FP131	7:50	no data	FWC	449674	2902675
83725	301326	2007-09-2	FP131	8:57	no data	FWC	453871	2902517
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83775	301376	2007-10-0	FP131	8:40	no data	FWC	454176	2910950
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83902	301503	2007-10-2	FP131	7:37	no data	FWC	450674	2910705
84010	302611	2008-03-1	FP131	9:05	no data	FWC	449524	2910486
84033	302634	2008-03-1	FP131	9:27	no data	FWC	449868	2910798
84055	302656	2008-03-1	FP131	7:57	no data	FWC	450402	2910631
84078	302679	2008-03-1	FP131	8:53	no data	FWC	452196	2912509
84124	302725	2008-03-2	FP131	9:00	no data	FWC	452479	2912037
84145	302746	2008-03-2	FP131	9:47	no data	FWC	453105	2911233
84186	302787	2008-03-2	FP131	7:48	no data	FWC	454964	2912570
84208	302809	2008-03-3	FP131	7:50	no data	FWC	453697	2915108
84230	302831	2008-04-0	FP131	10:15	no data	FWC	452889	2916695
85000	301601	2007-11-0	FP131	8:24	no data	FWC	455676	2906427
85018	301619	2007-11-0	FP131	7:19	no data	FWC	450922	2901939
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85099	301700	2007-11-1	FP131	7:37	no data	FWC	449897	2911283
85117	301718	2007-11-2	FP131	7:42	no data	FWC	449980	2902321
85179	301780	2007-11-3	FP131	7:26	no data	FWC	449960	2902354
85200	301801	2007-12-0	FP131	7:25	no data	FWC	456071	2905270
85240	301841	2007-12-0	FP131	7:19	no data	FWC	455436	2906313
85432	302033	2008-01-0	FP131	7:25	no data	FWC	452426	2904572
85468	302069	2008-01-0	FP131	7:39	no data	FWC	453995	2902563
85504	302105	2008-01-1	FP131	7:44	no data	FWC	449752	2903483
85523	302124	2008-01-1	FP131	7:29	no data	FWC	451564	2900791
85584	302185	2008-01-2	FP131	7:19	no data	FWC	450242	2903857
85786	302387	2008-02-1	FP131	7:40	no data	FWC	453303	2902599
85811	302412	2008-02-1	FP131	8:23	no data	FWC	452212	2904169
85831	302432	2008-02-2	FP131	8:20	no data	FWC	452257	2904088
85847	302448	2008-02-2	FP131	7:54	no data	FWC	450987	2902026
85894	302495	2008-02-2	FP131	7:36	no data	FWC	449853	2904063
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85985	302586	2008-03-0	FP131	8:02	no data	FWC	449420	2910732
79598	297199	2006-08-2	FP140	8:01	no data	FWC	453131	2901930
85362	301963	2007-12-2	FP154	11:20	no data	FWC	454049	2902851
85461	302062	2008-01-0	FP154	7:45	no data	FWC	452140	2904225
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85907	302508	2008-02-2	FP159	8:49	no data	FWC	439798	2912747

93323	310924	2011-05-1(	FP186	9:09	no data	FWC	440367	2910220
93377	310978	2011-05-2(	FP186	9:19	no data	FWC	440674	2913705
93441	311042	2011-05-2	FP186	9:04	no data	FWC	441044	2913997
96544	314145	2012-04-1	FP198	9:39	no data	FWC	451814	2916409
106838	324439	2015-11-0	FP215	8:42	no data	FWC	455513	2904310
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106868	324469	2015-11-1(	FP215	8:02	no data	FWC	452597	2904409
106876	324477	2015-11-1	FP215	7:32	no data	FWC	453905	2903173
106929	324530	2015-12-0	FP215	8:43	no data	FWC	455218	2904787
106938	324539	2015-12-1	FP215	8:02	no data	FWC	455225	2904650
106952	324553	2015-12-1	FP215	8:51	no data	FWC	455502	2904751
107279	324880	2016-02-2(	FP215	7:41	no data	FWC	455398	2904161
107622	325223	2016-04-2	FP215	7:52	no data	FWC	453696	2902589
107636	325237	2016-05-0	FP215	7:35	no data	FWC	452371	2904360
107660	325261	2016-05-0(	FP215	8:20	no data	FWC	453050	2903481
107673	325274	2016-05-0	FP215	7:30	no data	FWC	453017	2902894
107686	325287	2016-05-1	FP215	7:46	no data	FWC	453121	2902056
107700	325301	2016-05-1	FP215	7:51	no data	FWC	453305	2902024
107714	325315	2016-05-1(	FP215	7:41	no data	FWC	452933	2902315
107727	325328	2016-05-1	FP215	9:16	no data	FWC	453113	2903056
107740	325341	2016-05-2(	FP215	7:38	no data	FWC	452792	2902888
102152	319753	2013-12-0	FP222	9:24	no data	FWC	449592	2900993
103573	321174	2014-05-3(	FP224	7:40	no data	FWC	445284	2902445
103580	321181	2014-06-0	FP224	7:22	no data	FWC	447610	2902352
103598	321199	2014-06-0	FP224	7:46	no data	FWC	447920	2903199
103607	321208	2014-06-0(	FP224	7:29	no data	FWC	447307	2902381
103642	321243	2014-06-1	FP224	7:32	no data	FWC	445049	2901167
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103078	320679	2014-03-2	FP231	8:23	no data	FWC	446491	2909287
103112	320713	2014-03-3	FP231	8:08	no data	FWC	441856	2904282
103134	320735	2014-04-0	FP231	8:14	no data	FWC	441238	2905626
103156	320757	2014-04-0	FP231	9:47	no data	FWC	444888	2905275
103178	320779	2014-04-0	FP231	7:38	no data	FWC	446536	2909516
103252	320853	2014-04-1	FP231	10:52	no data	FWC	442572	2902839
103274	320875	2014-04-1(	FP231	7:21	no data	FWC	441198	2903990
103278	320879	2014-04-1	FP231	7:51	no data	FWC	441440	2903498
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103351	320952	2014-04-2	FP231	7:25	no data	FWC	444420	2901492
103367	320968	2014-04-2	FP231	7:23	no data	FWC	445682	2903040
103414	321015	2014-05-0	FP231	7:40	no data	FWC	446394	2909546
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103469	321070	2014-05-0	FP231	7:37	no data	FWC	443066	2903487
103654	321255	2014-06-1(	FP231	7:21	no data	FWC	448996	2902400
103674	321275	2014-06-1	FP231	7:27	no data	FWC	445993	2905185
103703	321304	2014-06-2	FP231	7:33	no data	FWC	446564	2909519

103734	321335	2014-06-2	FP231	7:17	no data	FWC		445198	2906298
103755	321356	2014-06-2	FP231	7:55	no data	FWC		445088	2906312
103776	321377	2014-06-3	FP231	7:22	no data	FWC		443235	2904094
103799	321400	2014-07-0	FP231	8:05	no data	FWC		443752	2903931
103819	321420	2014-07-0	FP231	7:27	no data	FWC		441421	2903876
103848	321449	2014-07-0	FP231	7:25	no data	FWC		440441	2907996
103889	321490	2014-07-1	FP231	9:14	no data	FWC		439474	2909610
103918	321519	2014-07-1	FP231	9:36	no data	FWC		442305	2910634
103937	321538	2014-07-1	FP231	9:15	no data	FWC		443917	2914182
103956	321557	2014-07-2	FP231	7:26	no data	FWC		440406	2904578
103985	321586	2014-07-2	FP231	9:17	no data	FWC		440725	2903521
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104070	321671	2014-08-0	FP231	9:15	no data	FWC		441220	2903958
104089	321690	2014-08-0	FP231	7:21	no data	FWC		441190	2903779
109349	327950	2018-06-2	FP251	7:24	no data	FWC		447570	2902261
109356	327957	2018-06-2	FP251	7:40	no data	FWC		447571	2902391
109364	327965	2018-06-2	FP251	7:35	no data	FWC		447593	2901966
109343	327944	2018-06-2	FP252	8:02	no data	FWC		448163	2902893
109365	327966	2018-06-2	FP252	7:56	no data	FWC		444276	2901506
30186	247787	1995-06-0	TX104	10:02	no data	FWC	I	443021	2907304
33159	251760	1996-07-1	TX104	7:53	no data	FWC	I	447921	2905604
36092	253693	1997-01-2	TX104	9:11	no data	FWC	I	453121	2902405
38116	255717	1997-07-0	TX104	7:34	no data	FWC	I	453121	2901905
38491	256092	1997-08-0	TX104	7:41	no data	FWC	I	451321	2901905
51438	269039	2000-05-2	TX106	8:01	no data	FWC	I	453321	2902605
57172	274773	2001-07-0	TX106	8:11	no data	FWC	X	453321	2902405
57204	274805	2001-07-0	TX106	7:43	no data	FWC	X	453021	2902505
57244	274845	2001-07-1	TX106	7:44	no data	FWC	X	453721	2903205
60702	279303	2002-05-1	TX106	7:57	no data	FWC	I	453621	2903405

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FID	Date	PantherID	Sex	Age	Location	CauseLong	Type	Year
395	4/25/2014	FP231	M	2	Golden Ga	Vehicle	INJURY	2014
563	12/29/2018	UCFP345	M	4.5 mo.	west of Ev	Intaspecifi	DEATH	2018
402	8/4/2014	FP231	M	2.5yrs	Golden Ga	Unknown	DEATH	2014
508	2/23/2017	UCFP299	Unknown	Unknown	east of Des	Unknown	DEATH	2017
130	11/28/2002	FP099	M	33 mos	CR 846, 1/	Vehicle	DEATH	2002
132	1/26/2003	UCFP050 (K033)	M	3 to 4	CR 846, 3.	Vehicle	DEATH	2003
147	6/30/2003	UCFP058	F	~1	CR 846, 3/	Vehicle	DEATH	2003
190	1/26/2006	UCFP079	F	2	CR 846, 2 r	Vehicle	DEATH	2006
243	7/28/2008	UCFP108	F	3 to 4	CR 846, 1.7	Vehicle	DEATH	2008
343	6/19/2012	UCFP173	F	7 mo.	CR 846, 2.4	Vehicle	DEATH	2012
349	10/9/2012	UCFP176	F	3 mo	Immokalee	Vehicle	DEATH	2012
350	11/4/2012	UCFP177	F	4 mo.	18th Ave N	Vehicle	DEATH	2012
354	11/26/2012	UCFP181	F	2 to 3 mos	Immokalee	Vehicle	DEATH	2012
441	7/5/2015	UCFP244	M	1.5	Immokalee	Vehicle	DEATH	2015
445	7/30/2015	UCFP248	F	4-5 mo	Golden Ga	Vehicle	DEATH	2015
455	11/23/2015	UCFP254	M	8-10 mos.	CR846, just	Vehicle	DEATH	2015
478	4/10/2016	UCFP277	M	5-6 mo	Golden Ga	Vehicle	DEATH	2016
479	4/15/2016	UCFP278	M	16-18 mo	Randall Blv	Vehicle	DEATH	2016
499	10/31/2016	UCFP289	F	3	Golden Ga	Vehicle	DEATH	2016
	12/7/2018	FP251	M	1.5 yrs	CR846, 1.2km N of Jor		DEATH	2018
	2/8/2019	UCFP347	F	8 mos.	DeSoto Blvd, 0.1 mi S		DEATH	2019

NAD83E	NAD83N	CauseShor	DATE_SORT
444507	2901327	Injured	4/25/2014 0:00
443987	2904443	Intaspecifi	12/29/2018 0:00
441059	2903916	Unknown	8/4/2014 0:00
449088	2901640	Unknown	2/23/2017 0:00
440632	2912671	Vehicle	11/28/2002 0:00
450950	2916386	Vehicle	1/26/2003 0:00
451966	2916362	Vehicle	6/30/2003 0:00
440615	2914139	Vehicle	1/26/2006 0:00
450941	2916386	Vehicle	7/28/2008 0:00
450396	2916383	Vehicle	6/19/2012 0:00
440615	2912846	Vehicle	10/9/2012 0:00
444239	2904966	Vehicle	11/4/2012 0:00
440604	2913945	Vehicle	11/26/2012 0:00
440610	2914266	Vehicle	7/5/2015 0:00
444240	2901319	Vehicle	7/30/2015 0:00
445326	2916359	Vehicle	11/23/2015 0:00
444053	2901324	Vehicle	4/10/2016 0:00
442711	2906561	Vehicle	4/15/2016 0:00
444626	2901349	Vehicle	10/31/2016 0:00
		Vehicle	
		Vehicle	

FID	Date	PantherID	Sex	Age	Location	CauseLong	Type	Year
323	7/29/2011	FP156	M	6	PSSF, Belle	Pseudorab	DEATH	2011
301	12/22/2010	FP173	M	5	Lee County	Pseudorab	DEATH	2010
235	4/16/2008	FP131	M	9	Horse Trial	Pneumonia	DEATH	2008
217	5/3/2007	K247	F	16 to 18 da	FPNWR, U	Complicati	DEATH	2007
216	4/27/2007	K249	F	10 to 12 da	FPNWR, U	Septicemia	DEATH	2007
166	7/28/2004	FP117	M	27 mos	OSSF	Pseudorab	DEATH	2004
165	7/22/2004	FP132	M	3 to 3.5	OSSF	FeLV	DEATH	2004
156	2/13/2004	FP122	F	2 to 3	OSSF, NW	FeLV	DEATH	2004
139	5/17/2003	FP115	F	4 to 5	OSSF, Sick	FeLV	DEATH	2003
53	5/27/1992	FP029	M	4	Hendry Co	Pseudorab	DEATH	1992
39	11/25/1989	FP033	M	3	2 mi. NW c	Rabies	DEATH	1989
34	8/24/1988	FP020	M	4 to 5	Bear Island	Congenital	DEATH	1988
75	12/2/1997	FP019	F	11.5	FPNWR	Ruptured a	DEATH	1997
395	4/25/2014	FP231	M	2	Golden Ga	Vehicle	INJURY	2014
367	5/13/2013	FP224	F	9 mo.	12th St NE,	Vehicle	INJURY	2013
78	2/14/1998	FP064	M	1.5	SR 29, at cl	Vehicle - in	INJURY	1998
52	4/7/1992	NONE	M	Unknown	Alico Road	Vehicle - in	INJURY	1992
36	11/29/1988	FP028	M	1.5 to 2	Near Danie	Vehicle - in	INJURY	1988
27	6/17/1987	FP020	M	3 to 4	CR 858 .8	Vehicle - in	INJURY	1987
22	5/12/1985	NONE	F	UNK	CR 951, 2 r	Vehicle	INJURY	1985
566	11/2/2019	UCFP348	M	9 mo.	Hendry Co	Intaspecifi	DEATH	2019
563	12/29/2018	UCFP345	M	4.5 mo.	west of Eve	Intaspecifi	DEATH	2018
571	6/27/2019	UCFP356	F	5	private lan	intraspecif	DEATH	2019
540	8/14/2017	UCFP313	M	2	CREW, Ma	Intraspecif	DEATH	2017
514	3/22/2017	FP198	F	9	private prc	Intraspecif	DEATH	2017
494	8/29/2016	FP195	F	8.5	Golden Ga	Intraspecif	DEATH	2016
446	8/9/2015	FP240	F	2.7	Deep Lake	Intraspecif	DEATH	2015
433	3/30/2015	FP237	M	1	Audubon	Intraspecif	DEATH	2015
431	3/20/2015	FP148	F	11.5	Picayune S	Intraspecif	DEATH	2015
419	12/31/2014	FP213	F	5.5	Dinner Isla	Intraspecif	DEATH	2014
391	4/11/2014	UCFP211	M	8-10 mos.	Belle Mead	Intraspecif	DEATH	2014
378	12/11/2013	UCFP202	U	9 mo.	FL Panther	Intraspecif	DEATH	2013
362	2/1/2013	UCFP188	M	2 to 3	OSSF, S of	Intraspecif	DEATH	2013
360	1/26/2013	UCFP186	M	2 to 4	Sadie Cypr	Intraspecif	DEATH	2013
340	5/21/2012	FP211	M	2	Orange grc	Intraspecif	DEATH	2012
339	5/18/2012	FP212	M	3	2 km NW c	Intraspecif	DEATH	2012
334	2/27/2012	FP133	M	12	FSSP	Intraspecif	DEATH	2012
329	1/5/2012	FP189	M	3.5	Tomato fie	Intraspecif	DEATH	2012
321	7/6/2011	UCFP161	M	7 to 9	Silver Strar	Intraspecif	DEATH	2011
320	6/1/2011	FP186	M	11.5 mo.	CREW, Birc	Intraspecif	DEATH	2011
310	3/2/2011	FP170	F	4.5	PSSF, Swar	Intraspecif	DEATH	2011
302	12/23/2010	UCFP151	F	10 to 18 m	Private prc	Intraspecif	DEATH	2010
295	10/15/2010	FP168	F	8	CREW, Flin	Intraspecif	DEATH	2010
279	1/16/2010	UCFP137	M	2.5	I mile S Co	Intraspecif	DEATH	2010
263	6/12/2009	FP140	F	7	FPNWR, SE	Intraspecif	DEATH	2009
233	4/9/2008	FP157	M	3	CREW	Intraspecif	DEATH	2008

206	1/10/2007	FP116	F	4.5	Williams R	Intraspecif	DEATH	2007
195	3/11/2006	UCFP083	M	3	CREW, 1 m	Intraspecif	DEATH	2006
175	1/1/2005	FP126	M	1.6	Private prc	Intraspecif	DEATH	2005
172	11/22/2004	FP059	M	9.4	Private prc	Intraspecif	DEATH	2004
163	7/7/2004	FP055	F	~11.5	BCNP	Intraspecif	DEATH	2004
160	3/15/2004	FP123	M	3.5	OSSF	Intraspecif	DEATH	2004
149	10/17/2003	FP114	M	1.5	FPNWR, S	Intraspecif	DEATH	2003
138	5/10/2003	FP082	F	6	OSSF	Intraspecif	DEATH	2003
134	2/22/2003	FP109	M	10+	OSSF, N of	Intraspecif	DEATH	2003
131	1/15/2003	FP067	F	5.5	Private lan	Intraspecif	DEATH	2003
126	10/16/2002	FP078	F	6	FPNWR - F	Intraspecif	DEATH	2002
124	9/11/2002	FP112	F	4	BCNP - Bea	Intraspecif	DEATH	2002
123	9/5/2002	FP111	M	9 to 10	OSSF, N of	Intraspecif	DEATH	2002
118	1/15/2002	FP096	M	1.75	Private lan	Intraspecif	DEATH	2002
116	12/2/2001	FP097	M	2	Private lan	Intraspecif	DEATH	2001
107	2/27/2001	FP011	F	19 to 20	Private lan	Intraspecif	DEATH	2001
92	11/13/1999	FP076	M	2.5 to 3	FSSP, 1.9 m	Intraspecif	DEATH	1999
87	3/26/1999	FP064	M	2.5	Audubon's	Intraspecif	DEATH	1999
77	2/2/1998	FP040	F	10	NBCNP	Intraspecif	DEATH	1998
73	3/30/1997	FP058	M	3	Sadie Cypr	Intraspecif	DEATH	1997
66	11/8/1994	FP012	M	13 to 14	Private lan	Intraspecif	DEATH	1994
64	7/8/1994	FP026	M	11 to 12	4 mi. E. He	Intraspecif	DEATH	1994
57	2/26/1993	FP053	M	11 mos.	Private lan	Intraspecif	DEATH	1993
56	2/19/1993	FP047	M	18 mos.	FSSP	Intraspecif	DEATH	1993
41	1/29/1990	FP030	M	22 mos.	FSSP	Intraspecif	DEATH	1990
35	8/26/1988	FP025	M	4 to 5	FPNWR	Intraspecif	DEATH	1988
26	1/27/1987	FP010	M	16 to 20 m	Mud Lake S	Intraspecif	DEATH	1987
15	11/28/1984	FP002	M	14+	FSSP	Intraspecif	DEATH	1984
464	1/18/2016	UCFP261	M	3 mo	Sakata Farı	Separated	DEATH	2016
454	11/2/2015	UCFP253	F	4 mos.	CSSP camp	Removed f	DEATH	2015
453	10/31/2015	UCFP252	M	4 mos.	CSSP near	Emaciatior	DEATH	2015
412	11/21/2014	K434	F	11 wks.	Parker's Ha	Separated	DEATH	2014
382	1/23/2014	UCFP205	M	7 days	FPNWR, Cc	Hypotherm	DEATH	2014
333	2/23/2012	K351	M	12 days	SBCNP	Malnutritic	DEATH	2012
308	2/23/2011	UCFP155	F	4	Golden Ga	Illegally Sh	DEATH	2011
270	10/10/2009	UCFP128	F	3	North Belle	Illegally sh	DEATH	2009
260	4/21/2009	UCFP120	F	2	Big Cypres	Illegally Sh	DEATH	2009
227	8/27/2007	K259	M	3 wks	SBCNP	suspected	DEATH	2007
228	8/27/2007	K260	Unk	3 wks	SBCNP	suspected	DEATH	2007
125	9/12/2002	FP032	F	15	FPNWR - R	Malnutritic	DEATH	2002
79	4/18/1998	TX104	F	6 to 7	S of Sabal F	Illegally sh	DEATH	1998
20	3/23/1985	UCFP014	F	2 to 3	Collier Sem	Illegally sh	DEATH	1985
9	1/17/1983	FP003	F	9+	FSSP	Capture	DEATH	1983
545	4/14/2018	FP245	M	7	Hendry Co	Unknown	DEATH	2018
547	3/21/2018	FP236	M	9-10yr	Rock Road	Unknown	DEATH	2018
544	6/11/2017	UCFP309	U	U	Keri Island	Unknown	DEATH	2017
508	2/23/2017	UCFP299	Unknown	Unknown	east of Des	Unknown	DEATH	2017

492	8/5/2016	FP242	M	10	Immokalee	Unknown	DEATH	2016
490	6/22/2016	FP215	F	11	Private prc	Unknown	DEATH	2016
472	2/18/2016	UCFP269	U	2	Lely Resort	Unknown	DEATH	2016
463	1/3/2016	UCFP260	M	6 mo	18th Ave S	Unknown	DEATH	2016
443	7/1/2015	UCFP246	U	2 weeks	Lee County	Unknown	DEATH	2015
440	6/16/2015	FP153	F	14	Big Cypres	Unknown	DEATH	2015
436	4/27/2015	FP159	M	13-Dec	Private lan	Unknown	DEATH	2015
432	3/22/2015	UCFP238	M	5	Immokalee	Illegal take	DEATH	2015
425	2/6/2015	UCFP235	M	10 mo.	Golden Ga	Unknown	DEATH	2015
424	1/29/2015	UCFP234	U	U	Corkscrew	Unknown (	DEATH	2014
402	8/4/2014	FP231	M	2.5yrs	Golden Ga	Unknown	DEATH	2014
344	7/18/2012	FP197	M	4.5	Lee County	Unknown	DEATH	2012
325	9/14/2011	FP188	F	3.5	Private Lar	Unknown	DEATH	2011
280	1/29/2010	UCFP138	M	6 to 8	N of Shell I	Unknown (	DEATH	0
245	9/15/2008	FP155	M	3	Lee-Hendr	Unknown	DEATH	2008
246	9/15/2008	UCFP109	M	8	Private Prc	Unknown	DEATH	2008
244	8/6/2008	FP107	F	8	FPNWR	Unknown	DEATH	2008
236	4/23/2008	UCFP105	F	5 to 6	FSSP, 0.24	Unknown (	DEATH	2008
218	5/3/2007	K248	M	16 to 18 da	FPNWR, Ur	Unknown	DEATH	2007
202	10/23/2006	FP048	F	15	Sunniland,	Unknown	DEATH	2006
193	2/27/2006	UCFP082	U	unknown	Private prc	Unknown	DEATH	2006
169	9/2/2004	UCFP67	F	< 7 days	FPNWR - R	Unknown	DEATH	2004
119	1/16/2002	FP105	F	~7	FPNWR, SV	Unknown	DEATH	2002
115	9/1/2001	FP092	M	2.2	CREW, N F	Unknown	DEATH	2001
70	3/18/1996	UCFP024	F	1.5 to 2 we	FPNWR	Unknown (	DEATH	1996
12	11/18/1983	FP005	F	8 to 9	Fakahatche	Unknown	DEATH	1983
	11/13/2019	UCFP370	M	4 yrs	Church Rd.	Vehicle	DEATH	2019
	11/6/2019	UCFP369	F	8-10 wks	SR 29 Owl	vehicle	DEATH	2019
	10/31/2019	UCFP366	M	3.5 yrs	SR 29 near	vehicle	DEATH	2019
	10/5/2019	UCFP365	M	7 yrs	I75, mile m	vehicle	DEATH	2019
	9/24/2019	UCFP364	F	4 mo	26th Ave S	vehicle	DEATH	2019
	8/14/2019	UCFP362	Unk	Unk	CR846, 3 m	vehicle	DEATH	2019
	7/29/2019	UCFP361	F	11 mos.	SR82 near	Vehicle	DEATH	2019
	7/22/2019	UCFP358	F	5 yrs	Golden Ga	Vehicle	DEATH	2019
572	7/5/2019	UCFP357	F	1.5	SR82 in Lee	Vehicle	DEATH	2019
	7/3/2019	UCFP357	F	1.5 yrs	SR82 at Ala	Vehicle	DEATH	2019
570	5/21/2019	UCFP355	M	2	SR 82 in Le	Vehicle	DEATH	2019
568	4/15/2019	UCFP353	F	1.5	CR846, 2 m	Vehicle	DEATH	2019
	3/24/2019	UCFP351	M	7 mos.	SR82, 390r	vehicle	DEATH	2019
	3/8/2019	UCFP350	M	2 yrs	CR846, 3kr	vehicle	DEATH	2019
	2/19/2019	UCFP349	M	2 yrs	GG Blvd. n	vehicle	DEATH	2019
	2/8/2019	UCFP347	F	8 mos.	DeSoto Blv	vehicle	DEATH	2019
562	12/8/2018	UCFP344	F	9	Church Rd.	Vehicle	DEATH	2018
	12/7/2018	FP251	M	1.5 yrs	CR846, 1.2	vehicle	DEATH	2018
561	11/5/2018	FP250	M	3	North Belle	Vehicle	DEATH	2018
559	10/17/2018	UCFP342	M	4 mo.	CR846, 8.5	Vehicle	DEATH	2018
560	10/17/2018	UCFP343	M	2	Daniels Pa	Vehicle	DEATH	2018

555	9/10/2018	UCFP338	F	4	CR846 at tl	Vehicle	DEATH	2018
553	8/1/2018	FP252	M	14 mo.	Golden Ga	Vehicle	DEATH	2018
552	7/21/2018	K430	M	4	Picayune S	Vehicle	DEATH	2018
551	6/25/2018	UCFP335	M	2	SR29 3.6kn	Vehicle	DEATH	2018
549	5/18/2018	UCFP333	M	2.5	I-75, 2.5km	Vehicle	DEATH	2018
548	4/3/2018	UCFP332	F	3	SR82, just \	Vehicle	DEATH	2018
537	2/28/2018	UCFP330	F	6-May	State Road	Vehicle	DEATH	2018
538	2/28/2018	UCFP331	F	3	CR 846, ea	Vehicle	DEATH	2018
536	2/19/2018	UCFP328	F	6-May	Collier Cou	Vehicle	DEATH	2018
535	2/5/2018	UCFP327	M	4 mo.	CR846 in C	Vehicle	DEATH	2018
531	1/13/2018	UCFP323	M	1-2 yr	intersectio	Vehicle	DEATH	2018
530	1/7/2018	PC1144	F	4-5 mo.	on I-75 nea	Vehicle	DEATH	2018
528	12/9/2017	UCFP320	M	3 mo.	Desoto Blv	Vehicle	DEATH	2017
527	11/23/2017	UCFP319	M	2	Lee County	Vehicle	DEATH	2017
524	11/7/2017	K4111	M	3.7	Immokalee	Vehicle	DEATH	2017
518	7/18/2017	UCFP312	F	2.5	Collier Blvc	Vehicle	DEATH	2017
517	7/3/2017	UCFP311	M	5	Immokalee	Vehicle	DEATH	2017
516	6/16/2017	UCFP310	M	3-Feb	CR 846, ea	Vehicle	DEATH	2017
542	4/20/2017	UCFP307	F	5-Apr	CR846, 2.6	Vehicle	DEATH	2017
513	3/14/2017	UCFP304	F	4	2 miles eas	Vehicle	DEATH	2017
512	3/9/2017	UCFP303	Unknown	2 mos.	SR 82, 1.5 I	Vehicle	DEATH	2017
511	3/4/2017	UCFP302	F	2	SR82, 1.7 r	Vehicle	DEATH	2017
509	2/27/2017	UCFP300	M	6-May	SR82 ½ mil	Vehicle	DEATH	2017
505	12/10/2016	UCFP295	F	4.5	Ben Hill Gr	Vehicle	DEATH	2016
504	12/9/2016	UCFP294	F	2	Corkscrew	Vehicle	DEATH	2016
503	12/8/2016	UCFP 293	F	4 mos.	Lee County	Vehicle	DEATH	2016
502	12/7/2016	UCFP 292	F	2	State Road	Vehicle	DEATH	2016
501	11/20/2016	UCFP291	F	9 mos.	CR832 two	Vehicle	DEATH	2016
500	11/16/2016	UCFP290	F		SR29, 2.3 r	Vehicle	DEATH	2016
499	10/31/2016	UCFP289	F	3	Golden Ga	Vehicle	DEATH	2016
498	10/28/2016	UCFP288	M	6 mos.	Daniels Pa	Vehicle	DEATH	2016
495	10/2/2016	K421	M	2yr 5mo	2685 Floric	Vehicle	DEATH	2016
493	8/14/2016	FP171	M	10-Sep	State Road	Vehicle	DEATH	2016
491	8/5/2016	UCFP285	F	4	SR 82, 1/2	Vehicle	DEATH	2016
489	6/16/2016	UCFP284	F	6 mo.	Intersectio	Vehicle	DEATH	2016
487	5/26/2016	K403	F	2.5	Daniel's Pa	Vehicle	DEATH	2016
483	4/26/2016	UCFP279	F	4-Mar	I-75, south	Vehicle	DEATH	2016
479	4/15/2016	UCFP278	M	16-18 mo	Randall Blv	Vehicle	DEATH	2016
478	4/10/2016	UCFP277	M	5-6 mo	Golden Ga	Vehicle	DEATH	2016
482	4/9/2016	UCFP276	M	5-Apr	I-75, 0.6 m	Vehicle	DEATH	2016
486	4/6/2016	UCFP275	M	3	Immokalee	Vehicle	DEATH	2016
476	4/1/2016	UCFP273	U	1	I-75 near n	Vehicle	DEATH	2016
475	3/25/2016	UCFP272	M	14-16 mo	Golden Ga	Vehicle	DEATH	2016
471	2/17/2016	UCFP268	M	4	SR 82, 1.25	Vehicle	DEATH	2016
470	2/15/2016	UCFP267	U	5-6 mo	SR82, just I	Vehicle	DEATH	2016
469	2/12/2016	UCFP266	F	1.5-2	SR82, near	Vehicle	DEATH	2016
468	2/2/2016	UCFP265	M	3-Feb	I75, 2 km n	Vehicle	DEATH	2016

467	1/30/2016	UCFP264	F	4	SR82, 1.4 k	Vehicle	DEATH	2016
465	1/20/2016	UCFP262	F	7-9 mo	Daniel's Pa	Vehicle	DEATH	2016
461	12/21/2015	UCFP258	M	1	SR29, Owl	Vehicle	DEATH	2015
459	12/15/2015	UCFP256	F	2.5	Corkscrew	Vehicle	DEATH	2015
458	12/8/2015	UCFP255	F	1	CR832, Hei	Vehicle	DEATH	2015
455	11/23/2015	UCFP254	M	8-10 mos.	CR846, just	Vehicle	DEATH	2015
452	10/23/2015	FP222	F	10.5	I75, MM90	Vehicle	DEATH	2015
451	10/8/2015	UCFP251	F	3	US 41, wes	Vehicle	DEATH	2015
450	9/30/2015	K432	F	13 mo	I-75, mm 1	Vehicle	DEATH	2015
448	9/22/2015	UCFP249	M	4 mo.	CR858. 1/4	Vehicle	DEATH	2015
447	9/18/2015	FP219	F	4.3	I-75, just w	Vehicle	DEATH	2015
445	7/30/2015	UCFP248	F	4-5 mo	Golden Ga	Vehicle	DEATH	2015
442	7/8/2015	UCFP245	M	10-11 mo	Daniels Pk	Vehicle	DEATH	2015
441	7/5/2015	UCFP244	M	1.5	Immokalee	Vehicle	DEATH	2015
437	4/30/2015	UCFP241	M	U	I-75, 0.5 m	Vehicle	DEATH	2015
435	4/13/2015	UCFP240	F	1	SR29, 1.3 r	Vehicle	DEATH	2015
434	4/3/2015	UCFP239	M	4-Mar	I75, 1.1 mi	Vehicle	DEATH	2015
430	3/8/2015	UCFP237	M	2.5	CR951, 30(	Vehicle	DEATH	2015
429	3/7/2015	K402	M	1.5	I-75, 0.5 m	Vehicle	DEATH	2015
428	2/25/2015	FP183	M	9	SR29, 2.75	Vehicle	DEATH	2015
423	1/25/2015	UCFP233	M	5-6 yrs	MM95, I75	Vehicle	DEATH	2015
422	1/24/2015	UCFP232	M	4 yrs	MM132, I7	Vehicle	DEATH	2015
421	1/20/2015	UCFP231	F	1.5	Immokalee	Vehicle	DEATH	2015
420	1/16/2015	UCFP230	F	1.5	I-75 1/2 mi	Vehicle	DEATH	2015
418	12/30/2014	UCFP229	F	2.5	16th ST SE,	Vehicle	DEATH	2014
417	12/28/2014	UCFP228	M	2 yrs	Golden Ga	Vehicle	DEATH	2014
415	12/18/2014	UCFP226	M	3 yrs	Collier Blvc	Vehicle	DEATH	2014
413	11/28/2014	UCFP224	M	6 mo.	Golden Ga	Vehicle	DEATH	2014
410	11/13/2014	UCFP223	F	3-4 yrs	County Lin	Vehicle	DEATH	2014
404	8/24/2014	UCFP218	F	4 mo.	Immokalee	Vehicle	DEATH	2014
405	8/24/2014	UCFP219	F	4 mo.	Immokalee	Vehicle	DEATH	2014
399	6/25/2014	UCFP216	F	1	Corkscrew	Vehicle	DEATH	2014
398	6/12/2014	K390/UCFI	F	2-Jan	US41, SE o	Vehicle	DEATH	2014
397	5/16/2014	UCFP214	M	14 mo.	Oil Well Rd	Vehicle	DEATH	2014
396	5/1/2014	UCFP213	F	3	I-75 near N	Vehicle	DEATH	2014
394	4/25/2014	FP163	M	7yr 2mo.	Co Line Rd,	Vehicle	DEATH	2014
390	4/8/2014	UCFP210	M	3-Feb	CR 846, 6 r	Vehicle	DEATH	2014
381	1/22/2014	UCFP204	M	1.5	SR 29, Owl	Vehicle	DEATH	2014
379	1/2/2014	UCFP203	M	3-Feb	I-75 near N	Vehicle	DEATH	2014
376	12/2/2013	UCFP201	M	1 yr	Northboun	Vehicle	DEATH	2013
375	11/12/2013	UCFP200	M	3-Feb	Treeline Av	Vehicle	DEATH	2013
374	9/20/2013	UCFP199	M	4 yrs	CR951,Γö¼	Vehicle	DEATH	2013
373	8/19/2013	UCFP198	F	3 yrs	I-75, 93 MI	Vehicle	DEATH	2013
371	7/15/2013	UCFP196	M	2 to 3	I-75, 96.5m	Vehicle	DEATH	2013
370	7/8/2013	UCFP195	M	2 to 3	CR 846, 7.9	Vehicle	DEATH	2013
366	4/28/2013	UCFP192	F	10	CR 846, 2.3	Vehicle	DEATH	2013
363	2/20/2013	UCFP189	F	5 to 6 mo.	Everglades	Vehicle	DEATH	2013

359	1/3/2013	UCFP185	M	10 mos.	SR 29, 600	Vehicle	DEATH	2013
354	11/26/2012	UCFP181	F	2 to 3 mos	Immokalee	Vehicle	DEATH	2012
352	11/19/2012	UCFP179	M	3	SR 29, Owl	Vehicle	DEATH	2012
353	11/19/2012	UCFP180	M	4 to 5	US 41, 0.5	Vehicle	DEATH	2012
351	11/14/2012	UCFP178	F	1	SR 29, 1.5	Vehicle	DEATH	2012
350	11/4/2012	UCFP177	F	4 mo.	18th Ave N	Vehicle	DEATH	2012
349	10/9/2012	UCFP176	F	3 mo	Immokalee	Vehicle	DEATH	2012
347	10/6/2012	FP196	F	2.5	US 41, 1.4k	Vehicle	DEATH	2012
343	6/19/2012	UCFP173	F	7 mo.	CR 846, 2.4	Vehicle	DEATH	2012
342	5/26/2012	UCFP172	M	4 mo.	Found inju	Vehicle - re	DEATH	2012
338	4/16/2012	UCFP170	M	3 to 4	Alico Rd, 0	Vehicle	DEATH	2012
337	4/7/2012	UCFP169	M	9 wks	Orange grc	Vehicle	DEATH	2012
330	1/7/2012	UCFP167	F	4	US 41, 0.5k	Vehicle	DEATH	2012
328	1/2/2012	UCFP166	M	4 to 5	SR 82, 3.8k	Vehicle	DEATH	2012
327	10/30/2011	UCFP165	F	3 to 4	SR 29, Colli	Vehicle	DEATH	2011
326	9/19/2011	UCFP164	F	3 to 4	SR 29, Owl	Vehicle	DEATH	2011
322	7/11/2011	UCFP162	M	1 to 1.5	SR 29, Owl	Vehicle	DEATH	2011
313	3/25/2011	UCFP159	F	4 to 5	SR 29, nea	Vehicle (su	DEATH	2011
314	3/25/2011	FP83	F	11 10 mo.	US 41, W o	Vehicle	DEATH	2011
309	2/26/2011	UCFP156	M	3 to 4	I-75, near	Vehicle	DEATH	2011
306	1/21/2011	UCFP153	M	8 mos.	I-75, 98mn	Vehicle	DEATH	2011
305	1/13/2011	UCFP152	F	3	I-75, 98mn	Vehicle	DEATH	2011
304	1/7/2011	K284	M	1.5	SR 29, S of	Vehicle	DEATH	2011
299	12/13/2010	UCFP149	M	1.5	Golden Ga	Vehicle	DEATH	2010
297	11/17/2010	FP176	M	4 to 5	CR 832, OS	Vehicle	DEATH	2010
293	8/3/2010	UCFP146	F	3 to 4	SR 29, 1 m	Vehicle	DEATH	2010
292	6/24/2010	UCFP145	M	16 to 18 m	SR 29, 3.7k	Vehicle	DEATH	2010
289	5/23/2010	UCFP143	M	7 to 8 mos	US 41, 2.2k	Vehicle	DEATH	2010
288	5/22/2010	FP158	F	5	US 41, 1km	Vehicle	DEATH	2010
286	5/4/2010	UCFP142	F	8 mos.	Golden Ga	Vehicle	DEATH	2010
285	4/29/2010	UCFP141	F	6 mos.	Church Ro	Vehicle	DEATH	2010
284	4/15/2010	UCFP140	M	1.5 to 2	I-75, mm 1	Vehicle	DEATH	2010
282	3/16/2010	FP174	M	4 to 5	I-75, 95mn	Vehicle	DEATH	2010
281	3/12/2010	UCFP139	F	3	Corkscrew	Vehicle	DEATH	2010
278	12/31/2009	UCFP136	F	3 to 4 mos	County Bar	Vehicle	DEATH	2009
277	12/29/2009	UCFP135	F	4	SR 29, 2 m	Vehicle	DEATH	2009
276	12/23/2009	UCFP134	M	3	Corkscrew	Vehicle	DEATH	2009
272	10/21/2009	UCFP130	F	3 to 4	CR 846, 2 r	Vehicle	DEATH	2009
271	10/19/2009	UCFP129	M	3 to 4 mos	CR 846, 2 r	Vehicle	DEATH	2009
267	9/15/2009	UCFP126	M	2	E of Ave M	Vehicle	DEATH	2009
266	9/6/2009	UCFP125	F	2	I-75, 96.5m	Vehicle	DEATH	2009
265	8/5/2009	UCFP124	M	1.5	I-75, 90mn	Vehicle	DEATH	2009
262	5/25/2009	UCFP122	M	2	CR 846, ne	Vehicle	DEATH	2009
261	5/14/2009	UCFP121	M	2	SR 29, ~4 n	Vehicle	DEATH	2009
258	3/25/2009	UCFP118	M	1.5	Treeline Av	Vehicle	DEATH	2009
256	1/20/2009	UCFP116	F	4 to 5	SR 29, 3 m	Vehicle	DEATH	2009
255	1/17/2009	K253	M	18 mos.	I-75, eastb	Vehicle	DEATH	2009

253	11/28/2008	UCFP114	F	4	CR 858, 1 r	Vehicle	DEATH	2008
252	11/26/2008	UCFP113	M	4 to 5	Alico Road	Vehicle	DEATH	2008
249	10/24/2008	UCFP111	F	6 to 8 mos	SR 29, 2.4k	Vehicle	DEATH	2008
243	7/28/2008	UCFP108	F	3 to 4	CR 846, 1.7	Vehicle	DEATH	2008
239	5/22/2008	UCFP107	F	2 to 3	CR 951, 2.4	Vehicle	DEATH	2008
237	5/4/2008	UCFP106	M	2	Leonard Bc	Vehicle	DEATH	2008
231	3/9/2008	UCFP103	M	2 to 3	Pine Ridge	Vehicle	DEATH	2008
229	9/12/2007	UCFP102	M	2	I-75, 1.5 m	Vehicle	DEATH	2007
223	6/23/2007	UCFP100	M	2 to 3	SR 29, 3 m	Vehicle	DEATH	2007
224	6/23/2007	K199	F	20 mos.	CR 832, 0.6	Vehicle	DEATH	2007
222	6/14/2007	UCFP099	M	12 to 15 m	SR 82, 0.7	Vehicle	DEATH	2007
221	6/11/2007	UCFP098	M	20 to 24 m	SR 29, at Je	Vehicle	DEATH	2007
220	5/14/2007	UCFP097	F	4 to 5	Corkscrew	Vehicle	DEATH	2007
214	4/3/2007	UCFP094	M	2 to 3	I-75, 2 mile	Vehicle	DEATH	2007
213	3/30/2007	UCFP093	M	2	I-75, 0.5 m	Vehicle	DEATH	2007
210	3/9/2007	UCFP091	M	5 mos.	CR 832, W	Vehicle	DEATH	2007
207	1/24/2007	UCFP090	F	4 to 6 mos	CR 832, 1m	Vehicle	DEATH	2007
205	12/12/2006	UCFP089	M	3 to 5	County Lin	Vehicle	DEATH	2006
204	11/26/2006	UCFP088	F	2	US 41, bet	Vehicle	DEATH	2006
201	8/24/2006	UCFP087	M	3	Corkscrew	Vehicle	DEATH	2006
200	7/6/2006	UCFP086	U	unknown	SR 29, 0.6	Vehicle - ca	DEATH	2006
190	1/26/2006	UCFP079	F	2	CR 846, 2 r	Vehicle	DEATH	2006
189	1/25/2006	UCFP078	M	9 mos.	CR 846, 1 r	Vehicle	DEATH	2006
186	12/2/2005	K049	F	7.8	SR 29,1 mi	Vehicle	DEATH	2005
185	9/18/2005	UCFP076	M	1	US 41, 1.4	Vehicle	DEATH	2005
183	8/29/2005	K153	M	2.1	CR951, 1.2	Vehicle	DEATH	2005
182	6/19/2005	UCFP075	M	2	SR 29, Owl	Vehicle	DEATH	2005
178	4/7/2005	UCFP073	M	7 mos.	CR 951, S c	Vehicle	DEATH	2005
177	2/25/2005	UCFP072	M	2	SR 29, nea	Vehicle	DEATH	2005
174	12/6/2004	K128	M	2.5	CR 832, 1 r	Vehicle	DEATH	2004
173	12/1/2004	UCFP070	F	1	SR 29, Owl	Vehicle	DEATH	2004
171	10/25/2004	UCFP69	F	2	SR 29 2.5 n	Vehicle	DEATH	2004
168	8/17/2004	K094	M	3.3	I-75, near S	Vehicle	DEATH	2004
162	6/27/2004	UCFP066	M	~3	I-75, 93 mr	Vehicle	DEATH	2004
161	4/6/2004	UCFP065	M	~2	SR 29, 200	Vehicle	DEATH	2004
157	2/26/2004	UCFP063	M	~3.5	I-75, 99 mr	Vehicle	DEATH	2004
152	12/9/2003	UCFP060	M	~2 to 3	US 41, 1 m	Vehicle	DEATH	2003
150	11/2/2003	UCFP059	M	3 to 4 mos	CR 858, 1.2	Vehicle	DEATH	2003
147	6/30/2003	UCFP058	F	~1	CR 846, 3/4	Vehicle	DEATH	2003
141	6/3/2003	UCFP054	M	8 to 10 mo	SR 29, 1.7	Vehicle	DEATH	2003
140	5/25/2003	UCFP053	F	2 to 3	SR 29, 1.4	Vehicle	DEATH	2003
133	2/20/2003	FP106	F	3	SR 29, entr	Vehicle	DEATH	2003
132	1/26/2003	UCFP050 (I	M	3 to 4	CR 846, 3.	Vehicle	DEATH	2003
130	11/28/2002	FP099	M	33 mos	CR 846, 1/4	Vehicle	DEATH	2002
129	11/25/2002	UCFP049 (I	F	19 mos	CR 846, 3	Vehicle	DEATH	2002
127	11/10/2002	UCFP048	F	8 to 9 mos	CR 846, 5	Vehicle	DEATH	2002
122	7/1/2002	FP098	M	4 to 5	SR 29, 1 kn	Vehicle	DEATH	2002

121	4/10/2002	UCFP046	M	6 mos.	SR 29, 1/2	Vehicle	DEATH	2002
114	8/17/2001	UCFP043	M	2 to 3	CR 846, 1 r	Vehicle	DEATH	2001
113	6/14/2001	UCFP042	F	3 to 4	CR 846, 1 r	Vehicle	DEATH	2001
112	5/22/2001	UCFP041	M	2 to 3	SR 29, Sun	Vehicle	DEATH	2001
110	5/7/2001	UCFP039	F	10 mos.	SR 29, 1/2	Vehicle	DEATH	2001
111	5/7/2001	UCFP040	M	10 mos.	SR 29, 1/2	Vehicle	DEATH	2001
105	12/29/2000	UCFP037	F	5	CR 846, 4.5	Vehicle	DEATH	2000
102	8/13/2000	UCFP036	F	1.7	CR 846, ne	Vehicle	DEATH	2000
101	6/23/2000	UCFP035	M	1.5 to 2	CR 846, 2	Vehicle	DEATH	2000
98	3/23/2000	UCFP034	M	1.5 to 2	CR 846, 2 r	Vehicle	DEATH	2000
96	2/28/2000	K076	M	3 mos.	CR 858, 1 r	Vehicle	DEATH	2000
94	1/15/2000	FP063	M	5	SR 29, N of	Vehicle-dr	DEATH	2000
88	7/8/1999	UCFP027	F	2	Farm Road	Vehicle	DEATH	1999
81	7/17/1998	FP051	M	9	SR 29, Bea	Vehicle	DEATH	1998
80	6/13/1998	UCFP025	F	2	CR 846, 3 r	Vehicle	DEATH	1998
74	7/13/1997	UCFP031	U	UNK	CR 846, 1.5	Vehicle	DEATH	1997
71	4/24/1996	UCFP029	M	3 to 5	CR 832, 5.5	Vehicle	DEATH	1996
67	1/14/1995	FP052	F	3.3	CR 846 nea	Vehicle	DEATH	1995
63	3/3/1994	FP031	F	12 to 14	SR 29 Sunn	Vehicle	DEATH	1994
62	2/28/1994	UCFP023	M	8 mos.	County Lin	Vehicle	DEATH	1994
61	12/6/1993	FP050	M	2.5	CR 846, 5 r	Vehicle	DEATH	1993
59	8/9/1993	UCFP022	M	2 to 3	Daniels Rd,	Vehicle	DEATH	1993
55	11/9/1992	UCFP021	F	7 mos.	SR 29, Sun	Vehicle	DEATH	1992
48	2/4/1991	UCFP020	F	9 mos.	SR 29, at P	Vehicle	DEATH	1991
47	11/26/1990	FP037	M	4 to 5	SR 29, 0.5	Vehicle	DEATH	1990
37	1/25/1989	UCFP018	M	3	CR 850, 1.5	Vehicle	DEATH	1989
28	12/14/1987	FP013	M	6 to 8	SR 29 Sunn	Vehicle	DEATH	1987
25	11/15/1986	UCFP015	F	4 to 5	SR 84 (now	Vehicle	DEATH	1986
23	10/26/1985	FP007	M	10	SR 29, 4 m	Vehicle	DEATH	1985
21	4/18/1985	FP004	M	12+	SR 84 (now	Vehicle	DEATH	1985
19	1/8/1985	UCFP013-(	F	1.5 to 2	SR 84 (now	Vehicle	DEATH	1985
18	11/12/1984	UCFP012-(	F	8 to 10	SR 84 (now	Vehicle	DEATH	1984
14	12/14/1983	FP001	M	12 to 14	SR 84 (now	Vehicle	DEATH	1983
7	4/19/1981	UCFP006-(	F	2 to 3	SR 29 near	Vehicle	DEATH	1981
6	2/7/1980	UCFP005-(	M	1.5 to 2.5	SR 29 near	Vehicle	DEATH	1980
5	12/23/1979	UCFP004-(	F	1.5 to 2.5	SR 29 just I	Vehicle	DEATH	1979

NAD83E	NAD83N	CauseShor	DATE_SORT
440343	2891975	Disease	7/29/2011 0:00
436373	2932175	Disease	12/22/2010 0:00
464672	2910001	Disease	4/16/2008 0:00
457008	2897886	Disease	5/3/2007 0:00
457008	2897886	Disease	4/27/2007 0:00
471133	2938399	Disease	7/28/2004 0:00
471379	2929545	Disease	7/22/2004 0:00
467194	2935632	Disease	2/13/2004 0:00
463792	2938739	Disease	5/17/2003 0:00
476339	2914976	Disease	5/27/1992 0:00
475528	2913423	Disease	11/25/1989 0:00
469834	2898945	Disease	8/24/1988 0:00
463629	2903280	Disease or	12/2/1997 0:00
444507	2901327	Injured	4/25/2014 0:00
441795	2901094	Injured	5/13/2013 0:00
465598	2900595	Injured	2/14/1998 0:00
421522	2930493	Injured	4/7/1992 0:00
422562	2936632	Injured	11/29/1988 0:00
467963	2909321	Injured	6/17/1987 0:00
431269	2886200	Injured	5/12/1985 0:00
450113	2946109	Intaspecifi	11/2/2019 0:00
443987	2904443	Intaspecifi	12/29/2018 0:00
464626	2924788	Intraspecif	6/27/2019 0:00
446343	2929219	Intraspecif	8/14/2017 0:00
442995	2925273	Intraspecif	3/22/2017 0:00
445252	2894222	Intraspecif	8/29/2016 0:00
470754	2878256	ISA	8/9/2015 0:00
437544	2919326	ISA	3/30/2015 0:00
443102	2882562	ISA	3/20/2015 0:00
476803	2932808	ISA	12/31/2014 0:00
437969	2883331	ISA	4/11/2014 0:00
465089	2903487	ISA	12/11/2013 0:00
467771	2943810	ISA	2/1/2013 0:00
469878	2920440	ISA	1/26/2013 0:00
482344	2905027	ISA	5/21/2012 0:00
471367	2923762	ISA	5/18/2012 0:00
462430	2889381	ISA	2/27/2012 0:00
469224	2908189	ISA	1/5/2012 0:00
458884	2927078	ISA	7/6/2011 0:00
439160	2912018	ISA	6/1/2011 0:00
449388	2884684	ISA	3/2/2011 0:00
456810	2906704	ISA	12/23/2010 0:00
427706	2919067	ISA	10/15/2010 0:00
428936	2924514	ISA	1/16/2010 0:00
459374	2899450	ISA	6/12/2009 0:00
435452	2915916	ISA	4/9/2008 0:00

486816	2907943	ISA	1/10/2007 0:00
427977	2923726	ISA	3/11/2006 0:00
469938	2921469	ISA	1/1/2005 0:00
450406	2895887	ISA	11/22/2004 0:00
479007	2888961	ISA	7/7/2004 0:00
473125	2930457	ISA	3/15/2004 0:00
465228	2896405	ISA	10/17/2003 0:00
472378	2930052	ISA	5/10/2003 0:00
467496	2943851	ISA	2/22/2003 0:00
481007	2910064	ISA	1/15/2003 0:00
465318	2896243	ISA	10/16/2002 0:00
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466715	2942996	ISA	9/5/2002 0:00
447028	2919759	ISA	1/15/2002 0:00
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485927	2908569	ISA	11/8/1994 0:00
482075	2911254	ISA	7/8/1994 0:00
461282	2901483	ISA	2/26/1993 0:00
460837	2878301	ISA	2/19/1993 0:00
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463108	2894283	ISA	8/26/1988 0:00
462621	2903405	ISA	1/27/1987 0:00
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438606	2933975	Other	1/18/2016 0:00
440337	2875504	Other	11/2/2015 0:00
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455582	2898700	Other	1/23/2014 0:00
477170	2889331	Other	2/23/2012 0:00
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443002	2896786	Other	10/10/2009 0:00
480876	2906834	Other	4/21/2009 0:00
477435	2881964	Other	8/27/2007 0:00
477435	2881964	Other	8/27/2007 0:00
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434078	2885711	Other	4/18/1998 0:00
440612	2875625	Other	3/23/1985 0:00
457121	2874505	Other	1/17/1983 0:00
476336	2912801	Unknown	12/30/1899 0:00:00
437239	2905278	Unknown	12/30/1899 0:00:00
436949	2904445	Unknown	6/11/2017 0:00
449088	2901640	Unknown	2/23/2017 0:00

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481475	2891180	Unknown	6/16/2015 0:00
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441059	2903916	Unknown	8/4/2014 0:00
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445765	2929982	Unknown	9/14/2011 0:00
429466	2878078	Unknown	1/29/2010 0:00
447316	2941199	Unknown	9/15/2008 0:00
443711	2918211	Unknown	9/15/2008 0:00
464961	2898111	Unknown	8/6/2008 0:00
457504	2878948	Unknown	4/23/2008 0:00
457008	2897886	Unknown	5/3/2007 0:00
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464450	2898837	Unknown	11/18/1983 0:00
		Vehicle	
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434018	2937807	Vehicle	7/5/2019 0:00
		Vehicle	
431028	2939292	Vehicle	5/21/2019 0:00
469494	2922442	Vehicle	4/15/2019 0:00
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453445	2937513	Vehicle	12/8/2018 0:00
		Vehicle	
440248	2893907	Vehicle	11/5/2018 0:00
482234	2923139	Vehicle	10/17/2018 0:00
425849	2937811	Vehicle	10/17/2018 0:00

440594	2914928	Vehicle	9/10/2018 0:00
436195	2901231	Vehicle	8/1/2018 0:00
444398	2881823	Vehicle	7/21/2018 0:00
465849	2905569	Vehicle	6/25/2018 0:00
468154	2892861	Vehicle	5/18/2018 0:00
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465267	2875383	Vehicle	2/28/2018 0:00
468831	2922311	Vehicle	2/28/2018 0:00
454276	2916394	Vehicle	2/19/2018 0:00
458396	2918951	Vehicle	2/5/2018 0:00
0	0	Vehicle	1/13/2018 0:00
430009	2893988	Vehicle	1/7/2018 0:00
448599	2896292	Vehicle	12/9/2017 0:00
427086	2938453	Vehicle	11/23/2017 0:00
440593	2914679	Vehicle	11/7/2017 0:00
431376	2894656	Vehicle	7/18/2017 0:00
434401	2906053	Vehicle	7/3/2017 0:00
476225	2922602	Vehicle	6/16/2017 0:00
468689	2922283	Vehicle	4/20/2017 0:00
462624	2922152	Vehicle	3/14/2017 0:00
450561	2931297	Vehicle	3/9/2017 0:00
445726	2932677	Vehicle	3/4/2017 0:00
449255	2931682	Vehicle	2/27/2017 0:00
421789	2927119	Vehicle	12/10/2016 0:00
423435	2924385	Vehicle	12/9/2016 0:00
425337	2937400	Vehicle	12/8/2016 0:00
465765	2911797	Vehicle	12/7/2016 0:00
459840	2941775	Vehicle	11/20/2016 0:00
465836	2905545	Vehicle	11/16/2016 0:00
444626	2901349	Vehicle	10/31/2016 0:00
427205	2938572	Vehicle	10/28/2016 0:00
456695	2926971	Vehicle	10/2/2016 0:00
465441	2897227	Vehicle	8/14/2016 0:00
446336	2932501	Vehicle	8/5/2016 0:00
458456	2908417	Vehicle	6/16/2016 0:00
426002	2937857	Vehicle	5/26/2016 0:00
422859	2921332	Vehicle	4/26/2016 0:00
442711	2906561	Vehicle	4/15/2016 0:00
444053	2901324	Vehicle	4/10/2016 0:00
425385	2911541	Vehicle	4/9/2016 0:00
434362	2906112	Vehicle	4/6/2016 0:00
439936	2892818	Vehicle	4/1/2016 0:00
431721	2901236	Vehicle	3/25/2016 0:00
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420926	2938625	Vehicle	2/2/2016 0:00

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447258	2930661	Vehicle	12/15/2015 0:00
469937	2940274	Vehicle	12/8/2015 0:00
445326	2916359	Vehicle	11/23/2015 0:00
449994	2892752	Vehicle	10/23/2015 0:00
439610	2876037	Vehicle	10/8/2015 0:00
430515	2893907	Vehicle	9/30/2015 0:00
472684	2910202	Vehicle	9/22/2015 0:00
430857	2893841	Vehicle	9/18/2015 0:00
444240	2901319	Vehicle	7/30/2015 0:00
427645	2939120	Vehicle	7/8/2015 0:00
440610	2914266	Vehicle	7/5/2015 0:00
422857	2922300	Vehicle	4/30/2015 0:00
465771	2911308	Vehicle	4/13/2015 0:00
434965	2893008	Vehicle	4/3/2015 0:00
429869	2878940	Vehicle	3/8/2015 0:00
422915	2922176	Vehicle	3/7/2015 0:00
465511	2888327	Vehicle	2/25/2015 0:00
443049	2892800	Vehicle	1/25/2015 0:00
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458394	2920241	Vehicle	1/20/2015 0:00
434627	2893049	Vehicle	1/16/2015 0:00
442620	2900388	Vehicle	12/30/2014 0:00
441272	2901290	Vehicle	12/28/2014 0:00
429971	2880459	Vehicle	12/18/2014 0:00
440644	2901299	Vehicle	11/28/2014 0:00
472874	2921198	Vehicle	11/13/2014 0:00
434792	2906157	Vehicle	8/24/2014 0:00
434826	2906117	Vehicle	8/24/2014 0:00
443882	2926931	Vehicle	6/25/2014 0:00
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421083	2939808	Vehicle	5/1/2014 0:00
472937	2917981	Vehicle	4/25/2014 0:00
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425824	2904812	Vehicle	1/2/2014 0:00
447599	2892764	Vehicle	12/2/2013 0:00
421689	2938537	Vehicle	11/12/2013 0:00
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439756	2892872	Vehicle	7/15/2013 0:00
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445637	2897918	Vehicle	2/20/2013 0:00

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431994	2881506	Vehicle	11/19/2012 0:00
465514	2889930	Vehicle	11/14/2012 0:00
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452153	2937920	Vehicle	4/7/2012 0:00
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453015	2930599	Vehicle	1/2/2012 0:00
456647	2932165	Vehicle	10/30/2011 0:00
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465480	2915822	Vehicle	7/11/2011 0:00
463534	2917803	Vehicle	3/25/2011 0:00
445757	2872465	Vehicle	3/25/2011 0:00
425712	2910414	Vehicle	2/26/2011 0:00
436221	2892997	Vehicle	1/21/2011 0:00
436807	2892929	Vehicle	1/13/2011 0:00
456583	2946741	Vehicle	1/7/2011 0:00
438253	2901267	Vehicle	12/13/2010 0:00
466107	2942070	Vehicle	11/17/2010 0:00
465735	2913730	Vehicle	8/3/2010 0:00
463430	2917905	Vehicle	6/24/2010 0:00
431881	2881593	Vehicle	5/23/2010 0:00
441448	2874545	Vehicle	5/22/2010 0:00
438174	2901280	Vehicle	5/4/2010 0:00
447119	2937469	Vehicle	4/29/2010 0:00
424910	2913912	Vehicle	4/15/2010 0:00
441018	2892768	Vehicle	3/16/2010 0:00
446749	2930324	Vehicle	3/12/2010 0:00
426997	2890657	Vehicle	12/31/2009 0:00
465433	2878029	Vehicle	12/29/2009 0:00
443900	2926770	Vehicle	12/23/2009 0:00
462611	2922165	Vehicle	10/21/2009 0:00
462585	2922158	Vehicle	10/19/2009 0:00
462259	2913067	Vehicle	9/15/2009 0:00
438968	2892868	Vehicle	9/6/2009 0:00
450073	2892715	Vehicle	8/5/2009 0:00
458157	2916617	Vehicle	5/25/2009 0:00
465517	2885439	Vehicle	5/14/2009 0:00
421750	2934266	Vehicle	3/25/2009 0:00
462104	2919224	Vehicle	1/20/2009 0:00
465085	2892821	Vehicle	1/17/2009 0:00

460001	2908422	Vehicle	11/28/2008 0:00
427752	2930530	Vehicle	11/26/2008 0:00
465744	2911732	Vehicle	10/24/2008 0:00
450941	2916386	Vehicle	7/28/2008 0:00
429934	2880448	Vehicle	5/22/2008 0:00
427411	2942010	Vehicle	5/4/2008 0:00
429716	2899370	Vehicle	3/9/2008 0:00
468382	2892857	Vehicle	9/12/2007 0:00
463466	2917969	Vehicle	6/23/2007 0:00
465720	2942363	Vehicle	6/23/2007 0:00
431354	2939145	Vehicle	6/14/2007 0:00
465116	2873894	Vehicle	6/11/2007 0:00
431034	2925884	Vehicle	5/14/2007 0:00
436950	2892941	Vehicle	4/3/2007 0:00
422046	2925101	Vehicle	3/30/2007 0:00
466030	2942127	Vehicle	3/9/2007 0:00
464073	2942326	Vehicle	1/24/2007 0:00
472931	2919548	Vehicle	12/12/2006 0:00
431529	2881851	Vehicle	11/26/2006 0:00
430633	2926086	Vehicle	8/24/2006 0:00
465849	2904680	Vehicle	7/6/2006 0:00
440615	2914139	Vehicle	1/26/2006 0:00
471348	2922532	Vehicle	1/25/2006 0:00
464904	2873124	Vehicle	12/2/2005 0:00
431911	2881582	Vehicle	9/18/2005 0:00
431340	2891189	Vehicle	8/29/2005 0:00
465567	2915710	Vehicle	6/19/2005 0:00
431288	2887496	Vehicle	4/7/2005 0:00
465414	2877883	Vehicle	2/25/2005 0:00
463683	2942254	Vehicle	12/6/2004 0:00
465552	2915727	Vehicle	12/1/2004 0:00
465720	2913557	Vehicle	10/25/2004 0:00
437335	2892925	Vehicle	8/17/2004 0:00
444566	2892721	Vehicle	6/27/2004 0:00
465618	2900494	Vehicle	4/6/2004 0:00
435304	2892991	Vehicle	2/26/2004 0:00
442007	2874458	Vehicle	12/9/2003 0:00
463862	2908608	Vehicle	11/2/2003 0:00
451966	2916362	Vehicle	6/30/2003 0:00
465757	2912513	Vehicle	6/3/2003 0:00
465768	2911711	Vehicle	5/25/2003 0:00
465838	2905517	Vehicle	2/20/2003 0:00
450950	2916386	Vehicle	1/26/2003 0:00
440632	2912671	Vehicle	11/28/2002 0:00
463459	2922165	Vehicle	11/25/2002 0:00
468536	2922250	Vehicle	11/10/2002 0:00
465866	2904227	Vehicle	7/1/2002 0:00

465549	2882397	Vehicle	4/10/2002 0:00
479859	2923112	Vehicle	8/17/2001 0:00
479459	2923106	Vehicle	6/14/2001 0:00
465838	2905584	Vehicle	5/22/2001 0:00
465311	2876343	Vehicle	5/7/2001 0:00
465304	2876102	Vehicle	5/7/2001 0:00
466429	2922124	Vehicle	12/29/2000 0:00
476749	2922759	Vehicle	8/13/2000 0:00
461924	2922139	Vehicle	6/23/2000 0:00
478823	2923096	Vehicle	3/23/2000 0:00
463602	2908495	Vehicle	2/28/2000 0:00
465882	2904204	Vehicle	1/15/2000 0:00
481523	2908764	Vehicle	7/8/1999 0:00
465563	2899931	Vehicle	7/17/1998 0:00
480724	2923118	Vehicle	6/13/1998 0:00
468752	2922323	Vehicle	7/13/1997 0:00
465184	2942494	Vehicle	4/24/1996 0:00
465323	2922095	Vehicle	1/14/1995 0:00
465783	2905097	Vehicle	3/3/1994 0:00
472936	2916364	Vehicle	2/28/1994 0:00
468132	2922159	Vehicle	12/6/1993 0:00
422754	2936570	Vehicle	8/9/1993 0:00
465838	2905164	Vehicle	11/9/1992 0:00
465865	2903058	Vehicle	2/4/1991 0:00
465498	2893906	Vehicle	11/26/1990 0:00
446776	2930336	Vehicle	1/25/1989 0:00
465846	2904968	Vehicle	12/14/1987 0:00
458521	2892736	Vehicle	11/15/1986 0:00
465540	2886357	Vehicle	10/26/1985 0:00
460020	2892787	Vehicle	4/18/1985 0:00
458233	2892755	Vehicle	1/8/1985 0:00
458039	2892767	Vehicle	11/12/1984 0:00
461019	2892796	Vehicle	12/14/1983 0:00
465423	2877804	Vehicle	4/19/1981 0:00
465823	2907202	Vehicle	2/7/1980 0:00
465507	2893149	Vehicle	12/23/1979 0:00

Golden Gate Blvd (all sections except east of Everglades Blvd)

	2014	2015	2016	2017	2018	5 yr ave	5 yr trips
Q1	18,775	20,717	21,502	23,587	21,713		
Q2	19,976	19,421	21,348	24,417	23,990		
Q3	18,982	19,973	22,785	25,520	23,448		
Q4	19,790	20,214	23,374	24,011	24,641		
Total	77,523	80,324	89,009	97,535	93,791		
Avearge	19,381	20,081	22,252	24,384	23,448	21,909	39984077
					2273	add AADT (15% res, 5% cc	
					24182	future AADT	
					44131390		
					4147312.5		

Immokalee Rd between Collier Blvd and Oil Well Rd (east of Collier Blvd)

	2014	2015	2016	2017	2018	5 yr ave	5 yr trips
Q1	32,531	38,019	38,113	38,988	39,492		
Q2	32,409	32,817	32,910	36,189	33,781		
Q3	30,328	30,456	30,644	31,592	31,880		
Q4	32,032	32,179	32,936	33,828	34,416		
Total	127,300	133,471	134,603	140,597	139,569		
Avearge	31,825	33,368	33,651	35,149	34,892	33,777	61643025
					6701	add AADT (45% res, 10% c	
					40478	future AADT	
					73872806		

I-75 North between Bonita Beach Rd and Immokalee Rd (from FDOT)

	2018	5 yr ave	5 yr trips
south of county line	99,582		
north of county line	106,000		
Total	205,582		
Avearge	102,791	102,791	1.88E+08
	2156	add AADT (15% res, 0% cc	
	104947	future AADT	
	191528731		

Collier Blvd between White Blvd and I-75 (south of Golden Gate Pkwy)

	2014	2015	2016	2017	2018	5 yr ave	5 yr trips
Q1	24,120	24,547	24,751	25,225	25,856		
Q2	23,204	22,864	23,086	23,098	23,430		
Q3	22,501	24,097	22,491	22,880	23,164		
Q4	22,361	22,507	22,787	23,168	29,321		
Total	92,186	94,015	93,115	94,371	101,771		
Avearge	23,047	23,504	23,279	23,593	25,443	23,773	43385543
					1869	add AADT (13% res, 0% cc	
					25642	future AADT	

46796011

panther deaths in last 5 years (12/11/14 to 12/11/19)

7	5712011.01	
	1.7507E-07	
	7.72606872	deaths every 5 years with Project
	0.72606872	additional/project related deaths
	0.72606872	

panther deaths in last 5 years (12/11/14 to 12/11/19)

3	20547675	
	4.8667E-08	
	3.59519051	deaths every 5 years with Project
	0.59519051	additional/project related deaths

panther deaths in last 5 years (12/11/14 to 12/11/19)

1	187593575	
	5.3307E-09	
	1.02097703	deaths every 5 years with Project
	0.02097703	additional/project related deaths

panther deaths in last 5 years (12/11/14 to 12/11/19)

1	43385542.5	
	2.3049E-08	

	1.07860842	deaths every 5 years with Project
	0.07860842	additional/project related deaths
12	1.40	total additional/project related deaths

PANTHER COMPENSATION CALCULATOR

About

Development size		(hectares)
primary/d	secondary	other

Compensation		(hectares)
primary/d	secondary	other

(PHUs)	Suggested Required	Comp. Proposed
primary/d		
secondary		
other		

Acreage Comp. Ratio	
Primary Equiv. Comp Ratio	

Primary/d impacts fully compensated?	
Secondary impacts fully compensated?	
"Other" impacts fully compensated?	

No. of Panthers:	90
Base Ratio:	1.98

Relative values	
primary/d	1.000
secondary	0.690
other	0.333

DEVELOPMENT
Habitat Value before Project
Habitat Value after Project
Habitat Value Lost
Base Ratio
Suggested Compensation

Select Units
- (•) Acres
- ( ) Hectares

New Project

Clear All

COMPENSATION	
Habitat Value of Compensation	
Habitat Value after Restoration	
Restoration Lift Factor*	0.5
Final Value of Compensation	
Additional Compensation Needed	

***When converting Ag lands to non-forested native systems applicant gets full credit of lift**

PROJECT PLANNING INFO FOR PANTHER TABLE

Habitat Impact Acreage and Panther Units						Compensation Acreage and Panther Units.					
primary/d		secondary		other		primary/d		secondary		other	
Acres	PHU	Acres	PHU	Acres	PHU	Acres	PHU	Acres	PHU	Acres	PHU
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PROJECT WORKSHEET

Habitat Type	*Assigned value*	Habitat types of land to be developed: Primary/d Zone	Secondary Zone	Other Zone	Primary Equivalent Habitat Units	Habitat types of land after development: Primary/d Zone	Secondary Zone	Other Zone	Primary Equivalent Habitat Units
Pine forest	9.5				0				0
Hardwood-Pine	9.3				0				0
Cypress swamp	9.2				0				0
Hardwood swamp	9.2				0				0
Hardwood Forest	9				0				0
Dry prairie	6.3				0				0
Unimproved pasture	5.7				0				0
Shrub swamp/brush	5.5				0				0
Improved pasture	5.2		112.99		405				0
Cropland	4.8				0				0
Orchards/groves	4.7				0				0
Marsh/ wet prairie	4.7				0				0
Xeric scrub	4.5				0				0
Exotic/Nuisance plants	3		1.99		4				0
Coastal wetlands	3				0				0
Barren/Disturbed lands	3		136.67		283				0
Water	0		403.14		0				0
Urban	0				0				0
Reservoirs*					0				0
STA*					0				0
TOTAL		0.00	654.79	0.00	692.43	0.00	0.00	0.00	0.00

CONTINUE

CLEAR SHEET

COMPENSATION TO OFF-SET
1371
Habitat Units

***NOTE: The assigned value for Reservoirs and STAs varies by size, proposed future management, and their position in the landscape.**
See the associated methodology document for guidance on starting values and considerations.

COMPENSATION

Habitat Type	*Assigned value*	Habitat types of land being offered as compensation: Primary/d Zone	Secondary Zone	Other Zone	Equivalent Habitat Units	Habitat types of compensation land after restoration: Primary/d Zone	Secondary Zone	Other Zone	Equivalent Habitat Units
Pine forest	9.5				0				
Hardwood-Pine	9.3				0				
Cypress swamp	9.2				0				
Hardwood swamp	9.2				0				
Hardwood Forest	9				0				
Dry prairie	6.3				0				
Unimproved pasture	5.7				0				
Shrub swamp/brush	5.5				0				
Improved pasture	5.2				0				
Cropland	4.8				0				
Orchards/groves	4.7				0				
Marsh/ wet prairie	4.7				0				
Xeric scrub	4.5				0				
Exotic/Nuisance plants	3				0				
Coastal wetlands	3				0				
Barren/Disturbed lands	3				0				
Water	0				0				
Urban	0				0				
Reservoirs*					0				
STA*					0				
SubTotal		0.00	0.00	0.00	0.00				

CONTINUE

CLEAR SHEET

COMPENSATION PROPOSED
0
Habitat Units

0 Subtotal PHU with time lag factor

USE SECTION BELOW ONLY IF A NATIVE HABITAT IS BEING CREATED FROM AG LANDS

Unimproved pasture	5.7				0				
Improved pasture	5.2				0				
Cropland	4.8				0				
Orchards/groves	4.7				0				
Shrub swamp/brush	7								
Marsh/ wet prairie	7								
Xeric scrub	7								
Coastal wetlands	7								
SubTotal		0.00	0.00	0.00	0.00				

Values in green are only used when ag lands are restored to non-forested native habitat. Full restoration value is immediate in this instance only.

0 Subtotal PHU from Ag Restoration

***NOTE: The assigned value for Reservoirs and STAs varies by size, proposed future management, and their position in the landscape. See the associated methodology document for guidance on starting values and considerations.**

From: Shindle, David B
To: Cassler, Constance; Mcdonald, Kenneth; Kelso, Charles
Subject: Proposed villages in rural Collier draw concerns from environmentalists
Date: Monday, September 9, 2019 9:24:06 AM
Importance: High

Proposed villages in rural Collier draw concerns from environmentalists

Patrick Riley, Naples Daily News Published 6:00 a.m. ET Sept. 7, 2019

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Growth in rural Collier County could be taking a new form.

Large swaths of undeveloped land east of Golden Gate Estates, including 4,000 acres once slated to be a new town, might be transformed into a group of smaller villages, a move that has drawn concern from some environmentalists.

Arguing that bureaucracy and "economic overreach" by the county had forced its hand, Collier Enterprises earlier this year withdrew its Rural Lands West application for the new town. That project off Oil Well Road, east of Golden Gate Estates, would have included up to 10,000 homes. It could have had up to 1.9 million square feet of commercial development.

A map shows the location of three proposed villages in rural Collier County. *(Photo: Collier County)*

Instead, the company has put together plans for three 1,000-acre villages, stretching from just north of Oil Well Road to east of Golden Gate Boulevard East and potentially adding up to 7,850 homes to the rural area:

- Rivergrass Village — which would be north and south of Oil Well Road and east of Desoto Boulevard North — would allow for up to 2,500 homes. Plans for the village also propose a minimum of 62,500 square feet and a maximum of 80,000 square feet of "neighborhood-scaled retail and office uses" and a minimum of 25,000 square feet for civic, government, and institutional buildings.
- Longwater Village — which would be east of Desoto Boulevard North and south of Oil Well Road — would allow for up to 2,600 residences, 65,000 square feet of retail and office space and 25,000 square feet for civic, governmental, and institutional buildings.
- Bellmar Village — which would be east of Golden Gate Boulevard East — would allow for up to 2,750 housing units, 85,000 square feet of retail and office space and 27,500 square feet for civic, governmental, and institutional buildings.

ADVERTISING

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Southeast Region Vision: Together, we will connect lands and waters to sustain fish, wildlife and plants by being visionary leaders, bold innovators and trusted partners, working with and for people.

NOTE: All email correspondence and attachments received from or sent to me are subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

Rivergrass Village is under review by county staff and is expected to come before the Collier County Planning Commission Sept. 19. The county has not yet received any applications for Longwater and Bellmar villages, but pre-application meetings were held last month, according to county records.

A fourth village, called Hyde Park, is also under county review. The proposed 655-acre village, one mile east of Everglades Boulevard on the north side of Oil Well Road, is a project by Neal Communities of SWFL, LLC. It would include up to 1,800 dwellings, 45,000 square feet of retail/office space, and 18,000 square feet for civic uses.

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All four villages sit within the 185,000-acre Rural Lands Stewardship Area, where a voluntary program allows landowners to build towns and villages with shopping centers, schools and businesses in areas with low conservation value using credits earned by giving up their rights to develop more environmentally sensitive land.

The program is now undergoing a review by county officials who are looking to improve it. Commissioners are expected to take it up this fall.

ICYMI: Collier hearing examiner paves the way for Celebration Park parking lot despite neighborhood objections

More: Naples council OKs nearly $600K to plant 384 new trees, palms

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Villages 'easier to plan'

For Collier Enterprises, the move from town to villages was in part motivated by a more compact timeline and a reduction in costs.

Whereas planning for a town looks 20 or 30 years into the future, villages are smaller in scale and plans look closer to 10 years out, said Patrick Utter, senior vice president of real estate for Collier Enterprises.

“It’s much easier to plan the horizon,” he said.

More: New 'towns' pop up on rural land around Florida

That includes planning for roads, water, sewer, parks and emergency services. With Rural Lands West, the company had to “overbuild” certain infrastructure, Utter said. Major four- to six-lane roads, for instance, were needed to serve the project, driving up costs.

“We’re able to design the villages to match the infrastructure that’s already planned,” Utter said.

Aside from the fact that Rivergrass would include a golf course, Collier Enterprises' proposed villages are fairly similar, he said. The new communities will aim to provide goods and services not just to its residents but also to nearby Golden Gate Estates, Utter said.

Homes for Rivergrass are slated to price between $250,000 and $450,000. A projected 43% of homes will be at $300,000 or less, Utter said.

Utter said the company thinks the project will supply the market with a price range "that's hard to find" in Collier.

With the reduction in development footprint, the acreage slated for preservation has also shrunk.

Development of the town would have required preserving more than 12,000 acres of agriculture, wildlife habitat and environmental flowways. It also would have restored more than 900 acres of farm fields to wetlands and habitat.

The proposed villages will set aside 10,000 acres for preservation, Utter said. Some of it will include restoration, but less than what was proposed for the town.

Ninety percent of land slated for development is farm fields, Utter said.

"We're repurposing land that's been farmed for decades," he said.

ICYMI: Without proper permits, Celebration Park parking lot draws concerns from some neighbors

More: Gabriel the pit bull suffered severe burns and broken bones. A Bonita Springs vet and a dog rescue are giving him a second chance.

Conservancy: 'This is an absolute disaster'

The proposed villages have been met with concern from some environmental groups.

Representatives from the Conservancy of Southwest Florida, which opposed Rural Lands West, said all three villages proposed by Collier Enterprises will impact Florida panther habitat, including primary panther habitat and adult breeding habitat.

“These are the areas that best available science says development needs to be directed away from,” said Nicole Johnson, director of environmental policy for the Conservancy. “So environmentally, this is an absolute disaster.”

Johnson said the proposed development is “nothing more than absolute, massive urban sprawl.”

“Instead of having a cohesive new town, you have all of these smaller villages that are being brought in, I assume to avoid the infrastructure that new towns require,” she said.

To Johnson, the projects exemplify the “fundamental failure” of the RLSA. The intent of the program was to create self-sustaining communities, she said.

“And if less services, infrastructure, mix of communities and uses can be achieved through a series of villages instead of doing an actual town, from a planning standpoint, that’s very concerning,” Johnson said.

For both Rural Lands West and the new proposed villages, the location is inappropriate, said April Olson, a senior environmental planning specialist with the Conservancy.

The Conservancy supports a recommendation made by county staff in a white paper on the RLSA to create an “aggregation rule for villages,” Olson said.

“What they’re saying is if you have a lot of these smaller villages that are adjacent to

each other or very close to each other and under a common ownership, then … that project should apply to town standards, the stricter standards for towns," she said.

Less preservation, not as quickly

Although Rural Lands West wasn't perfect, said Brad Cornell, Southwest Florida policy associate for Audubon of the Western Everglades and Audubon Florida, it had more "self-sustaining urban features" and would have leveraged more conservation and restoration benefits.

"We're not getting as many acres and we're not getting them as quickly as we would have," he said.

Cornell said Audubon does not support Belmar Village because it is too close to the Florida Panther National Wildlife Refuge, but he said the other two villages will generate "good conservation benefits."

"It's just not as good as it could've been," he said.

ICYMI: Trump administration sets forth changes to Endangered Species Act

Meredith Budd, Southwest Florida field representative for the Florida Wildlife Federation, said the newly proposed villages also highlight the importance of moving forward with the county's review of the RLSA.

Although there has been broad agreement that the credit system should be recalibrated to make sure more credits are needed for development — thereby preserving or restoring more land — none of the proposed changes have been implemented, she said.

The new villages will presumably be grandfathered into the existing credit system, Budd said.

She agreed that Belmar Village's proximity to the Florida Panther National Wildlife Refuge is problematic.

Not only would it cause more wildlife-human conflict, Budd said, but it would also create a potential problem with conducting prescribed burns with homes that close to the refuge.

"It presents a real challenge," she said.

Connect with the reporter at patrick.riley@naplesnews.com or on Twitter @PatJRiley.

RIVERGRASS VILLAGE
SRA DEVELOPMENT DOCUMENT

Collier Enterprises Management, Inc.
2550 North Goodlette Road, Suite 100
Naples, FL 34103

The Rivergrass Professional Consulting Team includes:
Agnoli, Barber & Brundage (ABB) – Engineering
Coleman Yovanovich & Koester – Legal Counsel
Development Planning & Financing Group (DPFG) – Fiscal Analysis
Hole Montes, Inc. – Planning and Permitting
Passarella & Assoc., Inc. (PAI) – Environmental Permitting
Stearns Weaver Miller Weissler Alhadeff & Sitterson– Legal Counsel
Trebilcock Consulting Solutions, Inc. – Transportation
Water Science Associates – Water Permitting

CCPC DATE_____

BCC DATE _____

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EXHIBITS

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Exhibit A – Sheet 2:	SRA Master Plan (Black & White)
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Exhibit E	Natural Resource Assessment

I. OVERVIEW/VILLAGE DESIGN AND PROJECT DEVELOPMENT

Rivergrass Village Stewardship Receiving Area (SRA) is located in eastern Collier County in Sections 10, 14, 15, 22, 23, and 27, Township 48 South, and Range 28 East. Rivergrass Village SRA ("Village") contains a total of 998.78± acres. Approximately 46%+/- of the Village acreage is located north of Oil Well Road, with the remaining 54% ± located south of Oil Well Road. A large perimeter lake system runs along the eastern boundary of the Village, both north and south of Oil Well Road, serving both as part of the Village stormwater system and as a deterrent to wildlife. Lands to the east, north, and south of the Village are zoned A- Agriculture, with active agricultural operations. To the west, the Village abuts a proposed future ROW (Big Cypress Parkway). The land within the Village has been in active agricultural production for many years.

In accordance with the RLSA Overlay definition, the Village is primarily a residential community which includes a diversity of housing types and a maximum of 2,500 dwelling units. The Village includes a 20.91± acre mixed-use Village Center providing for the required neighborhood-scaled retail, office, civic, and community uses. The SRA is designed to encourage pedestrian/bicycle circulation via an interconnected sidewalk and pathway system serving the entire Village and with an interconnected system of streets, dispersing and reducing both the number and length of vehicle trips. The Village also includes an 18-hole golf course.

II. SRA STATEMENT OF SUITABILITY CRITERIA PER LDC SECTION 4.08.07., PARAGRAPHS A., B, and C. AND RLSA OVERLAY ATTAHCMENT C.

1. The SRA contains 998.78± acres.
2. The SRA does not include any lands with a Natural Resource Index (NRI) greater than 1.2.
3. The Village SRA does not include, nor is it adjacent to, any lands designated Flowway Stewardship Area (FSA) or Habitat Stewardship Area (HSA). The Village does not include any lands designated Water Retention Area (WRA); however, within the WRA, along the eastern boundary of the Village, there is perimeter lake system, designed for stormwater management purposes, and as a deterrent to wildlife. Portions of that lake system, outside of the Village boundary, are designated WRA.
4. The SRA does not include any lands within the Area of Critical State Concern (ACSC) Overlay.
5. The required minimum Open Space (35%) is 349.57 acres. The SRA master plan provides for 572.68± acres of Open Space (57.34± percent), 223.11 acres above the RLSA 35% requirement.
6. The SRA is designed to encourage pedestrian and bicycle circulation by including an interconnected sidewalk and pathway system serving all residential neighborhoods. The SRA provides parks within and accessible by neighborhoods. The SRA also includes one 18-hole golf course.
7. The SRA contains two Context Zones (as required for the Village form of SRA): Neighborhood General and mixed-use Village Center.
8. Within the Village Center Context Zone, The SRA includes neighborhood scaled retail and office uses, consistent with the ratios set forth in LDC Section provided in Section 4.08.07 J.1. within the mixed-use Village Center, which is a minimum of 62,500 square feet and a maximum of 80,000 square feet. A minimum of 25,000 square feet of civic, government, and institutional uses is required.
9. The SRA allows for up to 2,500 dwelling units (2.5 dwelling units per gross acre), of which a minimum of 250 units will be multi-family units, based upon the Land Development Code (LDC) definition of Multifamily Dwelling (a group of 3 or more dwelling units within a single building).

10. A minimum of 1 percent of the SRA gross acreage, (9.99 acres), will be provided in the form of Parks & Community Green Space.
11. The SRA has direct access to Oil Well Road, which is classified as an arterial road.
12. The SRA is consistent with the standards set forth in the RLSA Overlay Attachment C, applicable to Villages.
13. The total acreage requiring stewardship credits is 775.67 acres (total SRA acreage excluding open space exceeding 35%) acres. At the required 8 Stewardship Credits per acre, 6,205.36 Stewardship Credits are required to entitle the SRA.
14. The Village will be served by the Collier County Water and Sewer District.
15. The proposed schedule of development within the Village SRA, is as follows:
    a. Anticipated timeframe for receipt of required jurisdictional agency permits (or permit modifications) and date of commencement of residential development: two years from approval of this SRA.
    b. Anticipated sequence of residential development: 250 units per year commencing after receipt of jurisdictional permits.
    c. Anticipated timeframe for commencement of minimum required neighborhood retail and office uses: 8 years from date of approval of this SRA.
    d. Anticipated project completion date: twelve (12) years from date of approval of this SRA.

III. REQUIRED PERIMETER BUFFERS[1]

Adjacent to Oil Well Road	Minimum 25' wide Type D Buffer per LDC Section 4.06.02.C.4.
All other Perimeter Buffers	
Adjacent to Preserve or SSA	No Buffer Required
Adjacent to A – Agriculture	Minimum 10' wide Type "A" buffer per LDC Section 4.06.02.C.1.
Adjacent to Roadway Along SRA Western Boundary	Minimum 25' wide Type "D" Buffer per LDC Section 4.06.02.C.4.

Table 1: Village Perimeter Buffer Requirements

[1]At the developer's discretion, a 10-foot wide pathway may be located within required perimeter landscape buffers 25' or greater in width, provided the required plantings are located between the property line and the pathway, however, in such cases, the buffer width shall be increased in width by 5 feet above the minimum required width.
A 10-foot wide pathway may also be located within perimeter buffers that are less than 25' in width, however, in such cases, the buffer width shall be increased in width by 10 feet above the minimum required width.

IV. MAXIMUM ALLOWABLE DENSITY AND INTENSITY

The maximum total number of dwelling units in the Village shall not exceed 2,500 dwelling units. The minimum number of multi-family dwelling units shall be 250 dwelling units. Multi-family dwelling units may be located within both the Village Center and the Neighborhood General Context Zones. The minimum required amount of neighborhood commercial development within the Village Center is 62,500 square feet and the maximum shall not exceed 80,000 square feet. A minimum of 25,000 square feet of civic, governmental and institutional uses is required. Accessory dwelling units will be limited to guesthouses per LDC Sections 5.03.03.A, B and C."

V. CONTEXT ZONES

The village contains two distinct Context Zones: Neighborhood General and Village Center.

5.1 Neighborhood General Context Zone

The Neighborhood General Context Zone includes approximately 977.87± acres of land, including one 156.78 acre 18-hole golf course located on the portion of the Village south of Oil Well Road.

5.1.1 Allowable Uses and Structures

5.1.1. A. Permitted Uses and Structures[2]:

1) Single-Family dwelling units.
2) Multi-family dwelling units.
3) Senior/Group Housing, including but not limited to Adult Living Facilities (ALF) and Continuing Care Retirement Communities (CCRC), subject to Florida statutes and the applicable provisions of LDC Section 5.05.04 - Group Housing.
4) One 18-hole Golf Course
5) Utility pump/tank station for water/sewer, subject to the applicable standards set forth in Section 5.05.12 of the LDC.
6) Clubhouses and amenity centers for residents and guests.
7) Neighborhood recreation areas, limited to a maximum of 2.0 acres and a maximum of 10,000 square feet of building area. Neighborhood recreation areas may include swimming pools, tennis courts, pickle ball courts, and similar neighborhood recreation facilities.

5.1.1. B. Accessory Uses and Structures:

1) Typical accessory uses and structures incidental to residential development including walls, fences, gazebos, swimming pools, screen enclosures, utility buildings (subject to the applicable standards set forth in Section 5.05.12 of the LDC), chickee huts, air conditioning units, satellite antennas, and similar uses and structures.
2) Model homes, sales centers, and temporary uses are permitted throughout Neighborhood General in accordance with LDC Section 5.04.00, and as provided for in this SRA Document.
3) Clubhouses and amenity centers for residents and guests.
4) Neighborhood recreation areas, limited to a maximum of 2.0 acres and a maximum of 10,000 square feet of building area. Neighborhood recreation areas may include swimming pools, tennis courts, pickle ball courts, and similar neighborhood recreation facilities.
5) Passive parks, limited to landscaped or natural areas and may include hardscape pathways or seating areas, benches, shade structures such as gazebos or pavilions, docks or piers.

[2] Note: Existing agricultural operations may continue on an interim basis until a Site Development Plan or Subdivision Plat, as the case may be, is approved for a particular parcel.

5.1.2. Neighborhood General Development and Design Standards

5.1.2.A. Required Minimum Yards & Maximum Building Heights:

DEVELOPMENT STANDARDS	SINGLE AND TWO FAMILY		MULTI-FAMILY		CLUBHOUSES AND AMENITY CENTERS PER 5.1.1A(6) and 5.1.1. B.(3); NEIGHBORHOOD RECREATION AREAS PER 5.1.1A. and 5.1.1.B.
	SINGLE FAMILY DETACHED	SINGLE FAMILY ATTACHED & TWO-FAMILY	ZERO LOT LINE & TOWNHOME[4]	ALF, CCRC & OTHER MULTI-FAMILY[5]	
PRINCIPAL STRUCTURES					
MIN. LOT AREA	5,000 S.F. / UNIT	3,000 S.F. / UNIT	2,500 S.F./UNIT	20,000 S.F./LOT	N/A
MIN. LOT WIDTH	40'	30'	20'/UNIT	100'	N/A
MIN. FLOOR AREA	1,200 S.F	1,200 S.F./ UNIT	1,200 S.F./UNIT	700 S.F./UNIT	N/A
FLOOR AREA RATIO	N/A	N/A	N/A	0.45 (only applies to ALF/CCRC)	N/A
MIN. FRONT YARD[1]	20'	20'	20'	20'	10'
MIN. SIDE YARD[2]	5'	0 OR 5'	0 or 5'	10'	10'
MIN. REAR YARD[6]	10'	10'	10'	20'	10'
MIN. LAKE SETBACK[3]	20'	20'	20'	20'	20'
MIN. DISTANCE BETWEEN STRUCTURES	10'	10'	10'	15' OR ½ SUM of BH for Structures Exceeding 35' BH	10'
MAX. BUILDING HEIGHT - ZONED	42'	42'	42'	3.5 Stories NTE 50'	3.5 Stories NTE 50'
MAX. BUILDING HEIGHT - ACTUAL	50'	50'	50'	62'	62'
ACCESSORY STRUCTURES					
MIN. FRONT YARD	SPS	SPS	SPS	SPS	SPS
MIN. SIDE YARD	SPS	SPS	SPS	SPS	10'
MIN. REAR YARD[6]	5'	5'	5'	5'	5'
MIN. LAKE SETBACK[3]	10'	10'	5'	5'	5'
MAX. HEIGHT ZONED & ACTUAL	SPS	SPS	SPS	42'	SPS

Table 1: Neighborhood General - Required Minimum Yards Maximum Building Height

S.P.S. = same as for principal structure; NTE = not to exceed; S.F. = square feet; BH = building height; N/A = not applicable

Footnotes:

1. Front yards shall be measured as follows:
   - Setback is measured from the back of curb (if curbed) or edge of pavement (if not curbed).
   - If the parcel has frontage on two streets (corner lot), the frontage providing vehicular access to the unit shall be considered the front yard. The setback along the other frontage shall be a minimum of 10'.
   - In no case shall the setback be less than 23 feet from the edge of an adjacent sidewalk, except in the case of side-loaded garages where the garage is designed in such a way that a vehicle can be parked in the driveway without conflicting with, or encroaching upon, the adjacent sidewalk.
2. 5' minimum side setbacks for single-family attached, two-family, must be accompanied by another 5' minimum side setback on adjoining lot to achieve minimum 10' separation.
3. The required 20' lake maintenance easement shall be provided in a separate platted tract and the setback for both principal and accessory structures may be reduced to 0'.
4. Zero Lot Line and Townhome Development means 3 or more attached units, typically one or 2 stories in height.
5. Other Multi-family means 3 or more units other than Zero Lot Line or Townhome Development, typically more than 2 stories in height.
6. Rear Setback for lots abutting Golf Course is 0' for both Principal and Accessory Structures.

5.1.2.B. Required Development Standards for Utility Sites and Structures:

The required Development Standards for Utility Sites and Structures shall be as required by LDC Section 5.05.12, as applicable.

5.2 Village Center Context Zone

The Village Center Context Zone includes 20.91± acres of land.

5.2.1. Allowable Uses and Structures

The Village Center is mixed use in nature, allowing multi-family development, and neighborhood-scale commercial and office uses, and civic, governmental, and institutional uses. A minimum of 62,500 square feet and maximum of 80,000 square feet of neighborhood-scale commercial and office uses shall be provided. A minimum of 25,000 square feet of civic, governmental and institutional uses shall be provided.

5.2.1.A. Permitted Uses

- Multi-Family Dwelling Units subject to the applicable development standards set forth in Paragraph 5.1.2.A, Table 1.; and,

- The following neighborhood-scale commercial and office uses, and civic, governmental, and institutional uses, as identified with a number from the Standard Industrial Classification Manual (1987), or as otherwise provided for within this section, are permitted by right, or as accessory uses within the Village Center.

    1) Accounting and Bookkeeping services (8721).
    2) Amusements and recreation services (7999 – limited to bicycle sales and rental).
    3) Apparel and accessory stores (5611 - 5699).
    4) Auto and home supply stores (5531).
    5) Banks, credit unions and trusts (6011 - 6099).
    6) Barber shops (7241, except for barber schools).
    7) Beauty shops (7231, except for beauty schools).
    8) Child day care services (8351).
    9) Churches.
    10) Civic, social and fraternal associations (8641).
    11) Computer and computer software stores (5734).
    12) Dry cleaning plants (7216, nonindustrial dry cleaning only).
    13) Drug stores (5912).
    14) Eating places (5812 only). All establishments engaged in the retail sale of alcoholic beverages for on-premise consumption are subject to locational requirements of section 5.05.01.
    15) Engineering, Architectural and Surveying Services (8711-8713)
    16) Essential services, subject to Section 2.01.03.
    17) Federal and federally-sponsored credit agencies (6111).
    18) Food stores (groups 5411 - 5499).
    19) Garment pressing, and agents for laundries and drycleaners (7212).

20) Gasoline service stations (5541, subject to LDC Section 5.05.05).
21) General merchandise stores (5331 - 5399).
22) Group care facilities (category I and II, except for homeless shelters); care units, except for homeless shelters; nursing homes; assisted living facilities pursuant to F.S. §400.402 and ch.58A-5 F.A.C.; and continuing care retirement communities pursuant to F.S. §651 and ch. 4-193 F.A.C.; all subject to Section 5.05.04 of the LDC.
23) Hardware stores (5251).
24) Health services, offices and clinics (8011 - 8049, 8071, 8082, 8092, and 8099).
25 Household appliance stores (5722).
26) Insurance carriers, agents and brokers (6311 - 6399, 6411).
27) Legal services (8111).
28) Libraries (8231).
29) Mortgage bankers and loan correspondents (6162).
30) Paint stores (5231).
31) Passenger Car Rental (7514)
32) Physical fitness facilities (7991; 7911, except discotheques).
33) Public Safety Facilities and other governmental services including, but not limited to, fire, emergency management and law enforcement facilities, and public libraries (8231, 9221, 9222, 9224, 9229, 9111, 9121, 9131, 9199).
34) Real Estate (6531 - 6552).
35) Retail Nurseries, Lawn and Garden Supply Stores (5261).
36) Retail services - miscellaneous (5921 - 5963 except pawnshops and building materials, 5992-5999, except auction rooms, awning shops, gravestones, hot tubs, monuments, swimming pools, tombstones and whirlpool baths).
37) Elementary and Secondary Schools, Colleges, Universities, Professional Schools and Technical Institutes, public or private (8211, 8221-8222)
38) Tax return preparation services (7291).
39) Travel agencies (4724, no other transportation services).
40) United State Postal Service (4311, except major distribution center).
41) Veterinary services (0742, excluding outdoor kenneling).
42) Any other use which is comparable and compatible in nature with foregoing list of permitted uses, is considered to be a neighborhood scale commercial, office, or civic, governmental, or institutional uses, as determined by the Board of Zoning Appeals or the Hearing Examiner, pursuant to the applicable procedures set forth in LDC Section 10.08.00.

5.2.1.B. Accessory Uses

1) Customary accessory uses to residential multi-family development subject to the applicable development standards set forth in Paragraph 5.1.2.A, Table 1, including but not limited to pools, tennis courts, bocci ball courts, and other similar recreational facilities l facilities.
2) Uses and structures that are accessory and incidental to the permitted neighborhood-scale commercial and office uses, and civic, governmental, and institutional uses above.
3) Parking structures detached or attached, not to exceed 35 feet in Actual height.

5.2.2. Village Center Development and Design Standards

5.2.2.A. Required Minimum Yards (Setbacks) and Maximum Building Heights:

DEVELOPMENT STANDARDS	ALF, CCRC & MULTI-FAMILY ONLY BUILDINGS	NON-RESIDENTIAL AND MIXED USE BUILDINGS
PRINCIPAL STRUCTURES		
MIN. LOT AREA	20,000 S.F.	10,000 S.F.
MIN. LOT WIDTH	100'	100'
MIN. FLOOR AREA	700 S.F. Per Unit	800 S.F. for Commercial Units 700 S.F. for Residential Units
MIN. SETBACK FROM OILWELL AND ENTRANCE ROAD[1]	20'	20'
FRONT YARDS[2]	0 to 10'	0 to 10'
MINIMUM SETBACK FROM A RESIDENTIAL TRACT	0'	20'
MINIMUM SETBACK FROM A NONRESIDENTIAL TRACT	15'	5'
MIN. LAKE SETBACK[3]	20'	20'
MIN. PRESERVE SETBACK	25'	25'
MIN. DISTANCE BETWEEN STRUCTURES	15 Feet or ½ Sum of BH, whichever is greater	15 Feet or ½ Sum of BH, whichever is greater
MAX. BUILDING HEIGHT - ZONED	4 Stories NTE 50'	4 Stories NTE 50'
MAX. BUILDING HEIGHT - ACTUAL	60'	60'
MAX FAR (APPLIES ONLY TO ALF/CCRC/)	0.45	N/A
ACCESSORY STRUCTURES		
MIN. FRONT YARD (ALL)	SPS	SPS
MIN. SETBACK FROM A RESIDENTIAL TRACT	SPS	SPS
MIN. SETBACK FROM A NONRESIDENTIAL TRACT	SPS	SPS
MIN. LAKE SETBACK[3]	20'	20'
MIN. PRESERVE SETBACK	10'	10'
MIN. DISTANCE BETWEEN STRUCTURES	10'	10'
MAX. HEIGHT - ZONED & ACTUAL	35'	35'

Table 2: Village Center - Required Minimum Yards Maximum Building Height

Footnotes:

1. Tracts abutting the minimum required 25'wide landscape buffer (located in a separate platted tract adjacent to Oil Well Road) shall provide a front yard setback, measured from the abutting landscape buffer tract. Tracts abutting the project entrance road shall provide a front yard setback measured from the 10 foot landscape buffer tract adjacent to the entry road.
2. Except as described in footnote 1 above, front yards for parcels abutting a street or internal driveway shall be measured from the back of curb (if curbed) or edge of pavement (if not curbed). This excludes public roads.
3. The required 20' lake maintenance easement shall be provided in a separate platted tract and the setback for both principal and accessory structures may be reduced to 0'.

S.P.S. = same as for principal structure; NTE = not to exceed; S.F. = square feet; BH = building height; N/A = not applicable

5.2.3. Village Center Required Parking:

All required parking shall be consistent with the requirements of the LDC, unless reductions from those requirements are permitted through a shared parking analysis, as required below.

At the time of submittal of the first Site Development Plan (SDP) providing for commercial or other nonresidential uses within the Village Center, a Shared Parking Plan shall be submitted as required in LDC Section 4.08.07.J.3.d.ii.q). Parking shall be determined utilizing the modal splits and parking demands for various uses recognized by ITE, ULI or other sources or studies. The analysis shall demonstrate the number of parking spaces available to more than one use or function, recognizing the required parking will vary depending on the multiple functions or uses in close proximity which are unlikely to require the spaces at the same time. At the discretion of the County manager or designee, the shared parking plan may be deferred to a subsequent SDP or SDP Amendment in order to allow for a more comprehensive parking demand analysis based upon the additional mix of uses at the time of the subsequent SDP or SDP Amendment.

VI. EXCAVATIONS

The following criteria shall apply to excavations within the Rivergrass SRA: (1) All excavation permit applications within the Rivergrass SRA and related Stewardship Sending Areas (SSAs) shall be reviewed as Development Excavation Permit applications. Within the boundary of the Rivergrass SRA and related SSA(s), fill material may be hauled from one construction site to another. Crossing County roadways from one area within the Rivergrass SRA or related SSA to another area within the SRA or SSA shall be acceptable under the Development Excavation Permit. (2) Fill may be placed up to, but not within, the edge of all conservation easements, preserves, and Water Retention Area (WRA's).

VII. DEVIATIONS

7.1. Village Center Standards

1) A deviation from LDC Section 4.08.07.J.3.a.v.: "Village Design Criteria," which requires that the Village Center be developed in a progressive rural to urban continuum with the greatest density, intensity and diversity occurring within the Village Center, to the least density intensity and diversity occurring within the Neighborhood General, to instead allow the Village Center to be located as depicted on the SRA Master Plan.

2) A deviation from LDC Section 4.08.07.J.3.d.ii.p)ii) "General Parking Criteria," which states "The majority of parking spaces shall be provided off-street in the rear of buildings or along the side secondary streets. Parking is prohibited in front of buildings," to instead allow parking in front of buildings in the Village Center. A Type 'D' buffer per LDC at time of permitting will be required when parking is adjacent to or abutting a road.

3) A deviation from LDC Section 4.08.07.J.3.d.ii.q), which requires that the majority of parking be located in the rear of buildings and prohibits parking in the front of buildings except on street parking within the right-of-way to instead allow parking in the front, side and rear yards. A Type 'D' buffer per LDC at time of permitting will be required when parking is adjacent to or abutting a road.

4) A deviation from LDC Section 4.08.07.J.3.d.ii.q), which requires that "parking structures fronting on a primary street shall include ground floor retail" to instead require ground floor

retail in parking structures supporting non-residential or mixed use development only, and not in the case of parking structures supporting only residential development.

5) A deviation from LDC Section 4.08.07.J.2.d.iii.e).i) and LDC Section 4.08.07.J.3.d.iii, "Maximum Multi-family lot size," which requires that multi-family residential lots be limited to a maximum of 4 acres, to instead allow lot sizes for multi-family to exceed 4 acres.

7.2. Neighborhood General Standards (which apply per LDC Section4.08.07.J.3.d.iii)

1) A deviation from LDC Section 4.08.07.J.2.d.iii.a) "Neighborhood General" Context Zone, which requires the inclusion of "residential, neighborhood scale goods and services, civic, institutional, parks, schools and accessory uses" within the Neighborhood General Context Zone, to instead not require neighborhood scale goods and services or schools as permitted uses within the Neighborhood General Context Zone.

2) A deviation from LDC Section 4.08.07.J.2.d.iii.f)iv), "Non-residential uses," which states "the maximum square footage per [non-residential] use shall be 3,000 square feet and per location shall be 15,000 square feet," to instead allow the Golf Club and Amenity Center sites and related uses to be a maximum of 50,000 square feet each.

3) A Deviation from LDC Section 4.08.07J.d.iii.e)ii), which states that in the case of "Multi-Family residential," "side yard setbacks shall be a minimum of 10 feet and rear yard setbacks shall be a minimum of 20 feet for the primary structure…" to instead allow for a side yard setback of 0 or 5 feet and a rear yard setback of 10 feet for zero lot line and townhome development, as set forth in Table 1: Neighborhood General - Required Minimum Yards and Maximum Building Height.

4) A deviation from LDC Section 4.08.07.J.2.d.iii.e)i) and LDC Section 4.08.07.J.3.d.iii, "Maximum Multi-family lot size," which requires that multi-family residential lots be limited to a maximum of 4 acres, to instead allow lot sizes for multi-family to exceed 4 acres.

7.3 Transportation Standards

1) A deviation from LDC Section: 6.06.01.J, "Street System Requirements," which states that "Cul-de-sacs in excess of 1,000 feet shall not be permitted unless existing topographical conditions or other natural features preclude a street layout to avoid longer cul-de-sacs," to instead allow the maximum permanent cul-de-sac length to be 1,200 feet as measured along the center line of the right-of-way from the intersecting right-of-way center line to the end of the cul-de-sac right-of-way.

2) A deviation from LDC Section 4.08.07.J.1.b. "Figure(s) 5, 6, and 7, Local Street |Neighborhood General" for cross-sections requiring 5-foot-wide sidewalks on both sides of a local street, to instead allow for a 10-foot-wide sidewalk or multi-use pathway on only one side of such street only where residential development is located on only one side of the street.

3) A deviation from LDC Section 4.08.07.J.1.b(6), "Figures 5, 6, and 7, Local Street Neighborhood General," which requires a 6-foot-wide planting area between the travel lane and the sidewalk, to instead allow for a 5-foot-wide planting area in the same location for local roads within the project in Neighborhood General. In such cases, either a root barrier or structural soil shall be utilized. If the option of structural soil is utilized, a minimum of 2 c.f. of structural soil per square feet of mature tree crown projection shall be provided.

7.4 Sign Standards

1) A deviation from LDC Section 5.06.02.B.5.a, "On-premises directional signs within residential districts," which requires on-premise directional signs to be set back a minimum of 10 feet from the edge of the roadway, paved surface or back of the curb, to instead allow a minimum setback of 5 feet from the edge of the roadway, paved surface or back of the curb, limited to signs internal to the SRA only. This excludes signage along County owned roadways.

2) A deviation from LDC Section 5.06.02.B.6, "On-premises signs within residential districts," which allows "two ground signs with a maximum height of 8 feet at each entrance to a multi-family or single-family development," to instead allow a maximum height of 12 feet for such signs, limited to the two primary project entrances from Oil Well Road (not including access points to the Village Center Tract).

7.5 Landscape Standards

1) A deviation from LDC Section 4.06.02.C., Buffer Requirements, "Types of buffers," Table 2.4 Information, Footnote (3) which requires "Buffer areas between commercial outparcels located within a shopping center, Business Park, or similar commercial development may have a shared buffer 15 feet wide with each abutting property contributing 7.5 feet", to instead allow a shared buffer 10 feet wide with each abutting property contributing 5 feet.

7.6 Other Deviations

1) A deviation from LDC Section 4.05.04.G, "Parking Space Requirements," which requires 1 parking space per 100 square feet for recreation facilities (indoor) sports, exercise, fitness, aerobics, or health clubs to instead allow for parking for the Golf Club and Amenity Center sites to be calculated at 1 space per 200 square feet of indoor square footage, excluding kitchen or storage space.

2) A deviation from LDC Section 3.05.10.A.2. – "Location Criteria," which requires that "LSPA [littoral shelf planting areas] shall be concentrated in one location of the lake(s), preferably adjacent to a preserve area," to instead allow for required littoral shelf planting areas to be aggregated in certain specific development lakes, including the development lake and WRA system that runs along the eastern perimeter of the SRA.

3) A deviation from LDC Section 5.03.02.D.1, "Fences and Walls, Commercial or Industrial Zoning Districts," which states that fences or walls in commercial or industrial areas are limited to a maximum height of 8 feet, to instead allow a maximum height of 10 feet.

4) A Deviation from LDC Section 4.03.08.C, "Potable Water System," which states "separate potable water and reuse waterlines…shall be provided…by the applicant at no cost to Collier County for all subdivisions and developments" and "Reuse water lines, pumps, and other appurtenances will not be maintained by Collier County," to instead allow for such facilities and/or appurtenances to be conveyed to and maintained by Collier County, as further detailed in the DCA for this SRA.

VIII. DEVELOPER/OWNER COMMITMENTS

8.1. Planning

A. One entity (hereinafter the Managing Entity) shall be responsible for monitoring of the SRA, as may be required by Collier County, and until no longer required by Collier County. The monitoring and report shall follow the same procedures and requirements set forth in LDC Section 10.02.02.F, PUD Monitoring Report requirements. This entity shall also be responsible for satisfying all commitments set forth in the SRA Document and the Landowner Contribution Agreement dated _____ between the County, the owners and the Managing Entity. At the time of this SRA approval, the Managing Entity is Collier Enterprises Management, Inc. Should the Managing Entity desire to transfer the monitoring and commitments to a successor entity, then it must provide a copy of a legally binding document, to be approved for legal sufficiency by the County Attorney. After such approval, the Managing Entity will be released of its obligations upon written approval of the transfer by County staff, and the successor entity shall become the Managing Entity. As Owner and Developer sell off tracts, the Managing Entity shall provide written notice to County that includes, if applicable, an acknowledgement of the commitments required by the SRA Document and the Landowner Contribution Agreement by the new owner and the new owner's agreement to comply with the Commitments through the Managing Entity, but the Managing Entity will not be relieved of its responsibility under this Section. When the County determines that the SRA Document commitments and the Developer Agreement commitments have been fulfilled, the Managing Entity shall no longer be responsible for the monitoring of this SRA.

B. Issuance of a development permit by a County does not in any way create any rights on the part of the applicant to obtain a permit from a state or federal agency and does not create any liability on the part of the county for issuance of the permit if the applicant fails to obtain requisite approvals or fulfill the obligations imposed by a state or federal agency or undertakes actions that result in a violation of state or federal law.

C. All other applicable state or federal permits must be obtained before commencement of the development.

D. Owner shall provide an annual SRA monitoring report, in a form similar to a PUD monitoring report, identifying the number of residential units constructed by type within the SRA, and amount of retail, office, civic, government, and institution square footage constructed within the SRA. The Report shall also address whether or not or to what degree the Developer Commitments contained herein and in the Landowner's Contribution Agreement have been satisfied.

8.2. Environmental

A. The Developer shall adhere to the Florida Fish and Wildlife Conservation Commission Black Bear Management Plan, as applicable. The informational brochure created by the Florida Fish and Wildlife Conservation Commission (FWCC) and titled "A Guide to Living in Bear County" will be distributed to future homeowners and construction/maintenance personnel. Residents will be provided with information on how to secure their garbage containers to discourage bears from foraging in trash receptacles and the project will utilize bear-proof dumpsters in locations to be determined at the time of Site Development Plan (SDP) approval.

8.3. Transportation

A. Intensity of uses under any development scenario for the SRA is limited to a maximum of 1,978 two-way, unadjusted, average weekday pm peak hour total trips based on the use codes in the ITE Manual on trip generation rates in effect at the time of application for SDP/SDPA or subdivision plat approval.

B. The Owner shall convey to Collier County, at no cost to Collier County, an easement in a form acceptable to Collier County to accommodate a transit stop and shelter within the SRA at a location agreed to by the Collier County Public Transit Division Director. As part of the site improvements authorized by the initial Site Development Plan within the SRA, the Owner shall, at its sole expense, convey the easement and install the shelter and related site improvements for the transit stop, utilizing a design consistent with established CAT architectural standards or consistent with project architectural standards if agreed to by CAT.

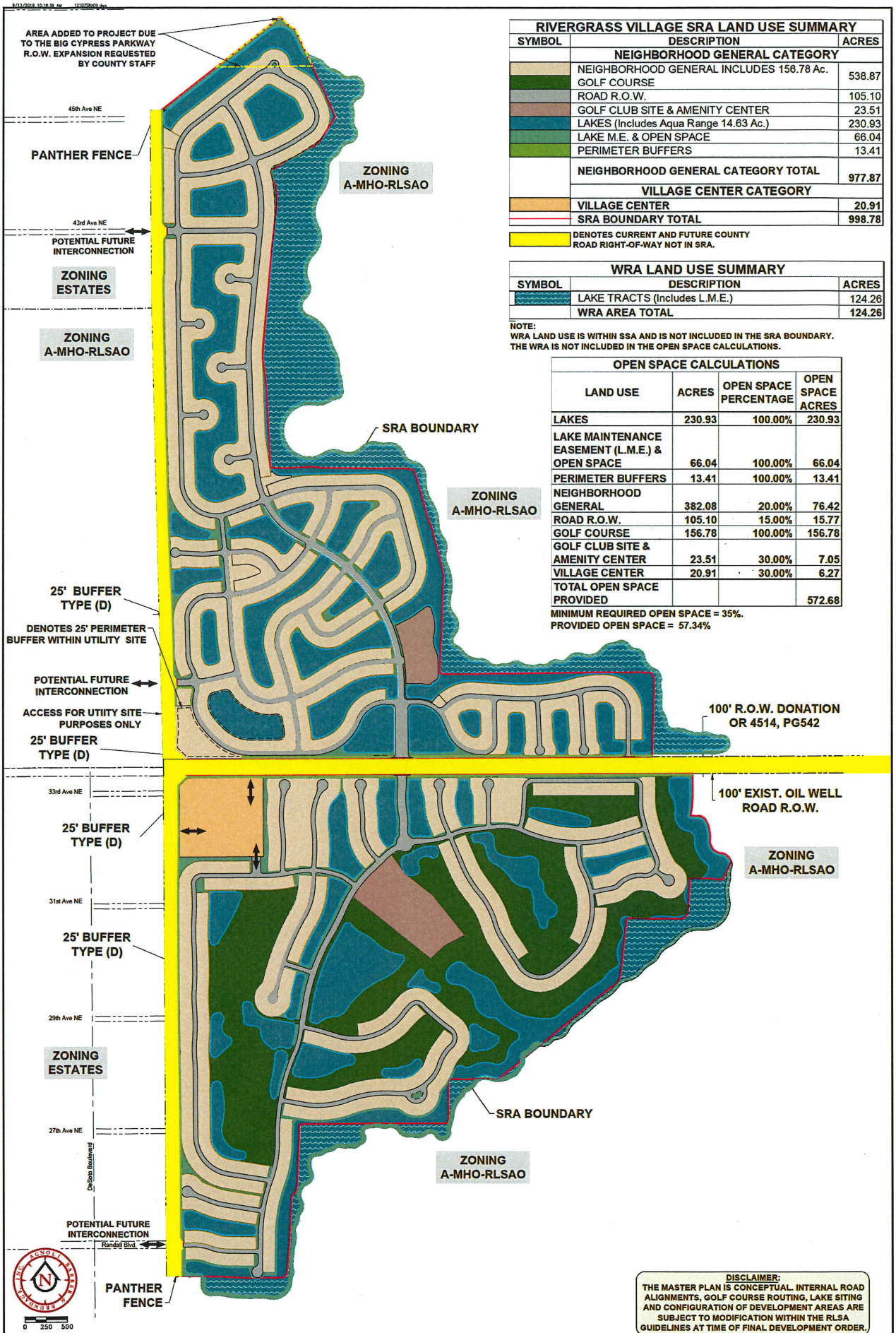
C. No more than 1,750 dwelling units will be issued certificates of occupancy until a minimum of 30,000 sq. ft. of the neighborhood retail and office uses have been developed and issued certificate(s) of occupancy.

8.4 Parks and Recreation

A. The SRA shall include a minimum of one (1) children's playground that conforms to appropriate ASTM standards, which shall be a minimum of 2,500 square feet in size. The playground shall be located in the Amenity Center Tract depicted on the SRA Master Plan.

8.5 Other

A. Street trees will be provided throughout the Village in locations required by LDC Section 4.08.07. Such street trees shall be spaced forty feet (40') on center and shall have a minimum average mature canopy spread of twenty feet (20') or alternatively, for species with an average mature spread less than 20', street trees shall be spaced a distance equal to twice the average mature spread.



RIVERGRASS VILLAGE SRA LAND USE SUMMARY

SYMBOL	DESCRIPTION	ACRES
	NEIGHBORHOOD GENERAL CATEGORY	
	NEIGHBORHOOD GENERAL INCLUDES 156.78 Ac. GOLF COURSE	538.87
	ROAD R.O.W.	105.10
	GOLF CLUB SITE & AMENITY CENTER	23.51
	LAKES (Includes Aqua Range 14.63 Ac.)	230.93
	LAKE M.E. & OPEN SPACE	66.04
	PERIMETER BUFFERS	13.41
	NEIGHBORHOOD GENERAL CATEGORY TOTAL	**977.87**
	VILLAGE CENTER CATEGORY	
	VILLAGE CENTER	20.91
	SRA BOUNDARY TOTAL	998.78

DENOTES CURRENT AND FUTURE COUNTY ROAD RIGHT-OF-WAY NOT IN SRA.

WRA LAND USE SUMMARY

SYMBOL	DESCRIPTION	ACRES
	LAKE TRACTS (Includes L.M.E.)	124.26
	WRA AREA TOTAL	124.26

NOTE:
WRA LAND USE IS WITHIN SSA AND IS NOT INCLUDED IN THE SRA BOUNDARY.
THE WRA IS NOT INCLUDED IN THE OPEN SPACE CALCULATIONS.

OPEN SPACE CALCULATIONS

LAND USE	ACRES	OPEN SPACE PERCENTAGE	OPEN SPACE ACRES
LAKES	230.93	100.00%	230.93
LAKE MAINTENANCE EASEMENT (L.M.E.) & OPEN SPACE	66.04	100.00%	66.04
PERIMETER BUFFERS	13.41	100.00%	13.41
NEIGHBORHOOD GENERAL	382.08	20.00%	76.42
ROAD R.O.W.	105.10	15.00%	15.77
GOLF COURSE	156.78	100.00%	156.78
GOLF CLUB SITE & AMENITY CENTER	23.51	30.00%	7.05
VILLAGE CENTER	20.91	30.00%	6.27
TOTAL OPEN SPACE PROVIDED			572.68

MINIMUM REQUIRED OPEN SPACE = 35%.
PROVIDED OPEN SPACE = 57.34%

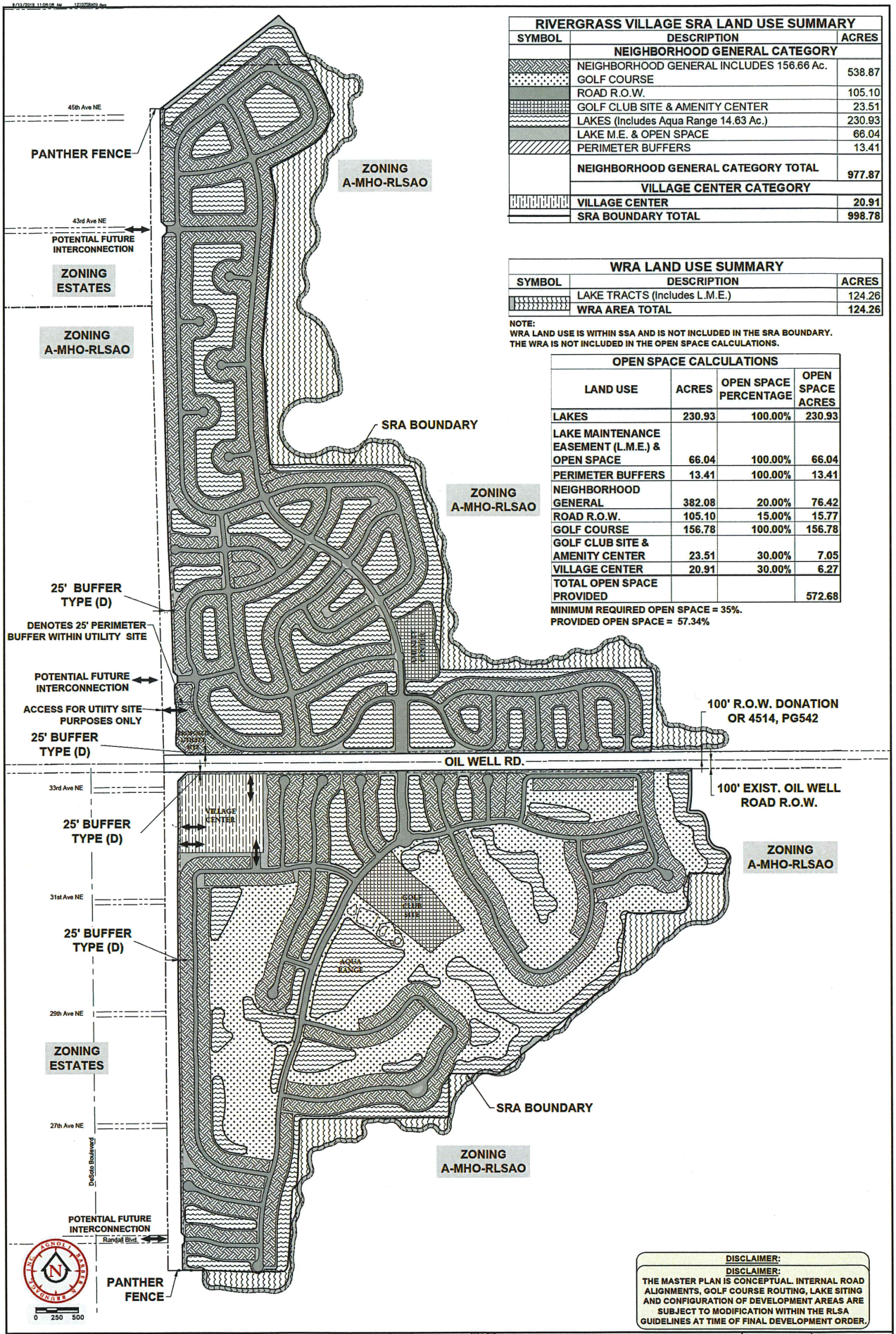
DISCLAIMER:
THE MASTER PLAN IS CONCEPTUAL. INTERNAL ROAD ALIGNMENTS, GOLF COURSE ROUTING, LAKE SITING AND CONFIGURATION OF DEVELOPMENT AREAS ARE SUBJECT TO MODIFICATION WITHIN THE RLSA GUIDELINES AT TIME OF FINAL DEVELOPMENT ORDER.

AGNOLI BARBER & BRUNDAGE, INC.
Professional Engineers, Planners, Surveyors & Landscape Architects
7400 Trail Blvd, Suite 200 - Naples, FL - 34108 Ph.: (239) 597-3111 - Fax: (239) 566-2203
Certificate of Authorization Nos. EB 3664, EB 3664 & LC26000620

NO.	DATE	REVISIONS	BY
D	09/11/19	Responses per 4th County review comments	ROP
C	08/09/19	Responses per 3rd County review comments	ROP
B	07/15/19	Responses per 2nd County review comments	ROP
A	05/29/19	Changes in response to county review comments	ROP

PROJECT NAME:	COLLIER ENTERPRISES MANAGEMENT, INC. RIVERGRASS VILLAGE
PLAN SET TITLE:	SRA SUBMITTAL PLANS
DWG. TITLE:	EXHIBIT (A) MASTER PLAN COLOR

DESIGNED BY: ABB	PROJECT No.: 14-0018-CV
DATE: 05/19	ACAD FILE: 12107SRA09
DRAWN BY: ROP	HORIZ. SCALE: 1"=1000'11X17
DATE: 05/19	VERT. SCALE: N/A
CHECKED BY: DJA	PLAN STAGE: REVIEW
DATE: 05/19	VERTICAL DATUM: N/A
DRAWING FILE No.: 12107	SHEET 1 OF 6



RIVERGRASS VILLAGE SRA LAND USE SUMMARY		
SYMBOL	DESCRIPTION	ACRES
	NEIGHBORHOOD GENERAL CATEGORY	
	NEIGHBORHOOD GENERAL INCLUDES 156.66 Ac. GOLF COURSE	538.87
	ROAD R.O.W.	105.10
	GOLF CLUB SITE & AMENITY CENTER	23.51
	LAKES (Includes Aqua Range 14.63 Ac.)	230.93
	LAKE M.E. & OPEN SPACE	66.04
	PERIMETER BUFFERS	13.41
	NEIGHBORHOOD GENERAL CATEGORY TOTAL	**977.87**
	VILLAGE CENTER CATEGORY	
	VILLAGE CENTER	**20.91**
	SRA BOUNDARY TOTAL	**998.78**

WRA LAND USE SUMMARY		
SYMBOL	DESCRIPTION	ACRES
	LAKE TRACTS (Includes L.M.E.)	124.26
	WRA AREA TOTAL	**124.26**

NOTE:
WRA LAND USE IS WITHIN SSA AND IS NOT INCLUDED IN THE SRA BOUNDARY.
THE WRA IS NOT INCLUDED IN THE OPEN SPACE CALCULATIONS.

OPEN SPACE CALCULATIONS			
LAND USE	ACRES	OPEN SPACE PERCENTAGE	OPEN SPACE ACRES
LAKES	230.93	100.00%	230.93
LAKE MAINTENANCE EASEMENT (L.M.E.) & OPEN SPACE	66.04	100.00%	66.04
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NEIGHBORHOOD GENERAL	382.08	20.00%	76.42
ROAD R.O.W.	105.10	15.00%	15.77
GOLF COURSE	156.78	100.00%	156.78
GOLF CLUB SITE & AMENITY CENTER	23.51	30.00%	7.05
VILLAGE CENTER	20.91	30.00%	6.27
TOTAL OPEN SPACE PROVIDED			572.68

MINIMUM REQUIRED OPEN SPACE = 35%.
PROVIDED OPEN SPACE = 57.34%

DISCLAIMER:

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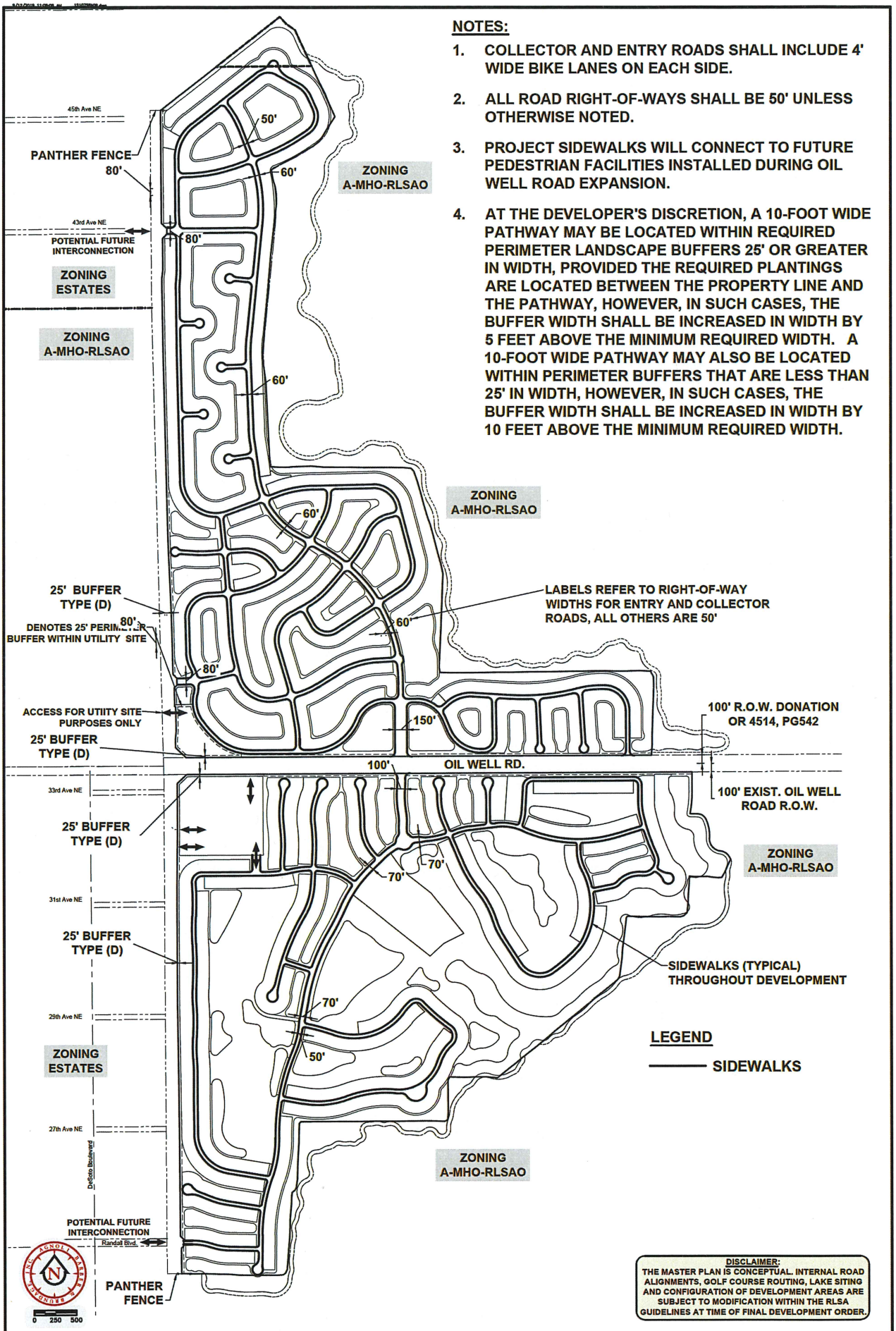
B	07/15/19	Responses per 2nd County review comments	ROP
A	05/29/19	Changes in response to county review comments	ROP

PROJECT NAME:	*COLLIER ENTERPRISES MANAGEMENT, INC. RIVERGRASS VILLAGE*
PLAN SET TITLE:	*SRA SUBMITTAL PLANS*
DWG. TITLE:	*EXHIBIT (A) MASTER PLAN BLACK & WHITE*

DESIGNED BY: ABB	PROJECT No.: 14-0018-CV
DATE: 05/19	ACAD FILE: 12107SRA09
DRAWN BY: ROP	HORIZ. SCALE: 1"=1000'11X17
DATE: 05/19	VERT. SCALE: N/A
CHECKED BY: DJA	PLAN STAGE: REVIEW
DATE: 05/19	VERTICAL DATUM: N/A
DRAWING FILE No.: 12107	SHEET 2 OF 6



NOTES:

1. COLLECTOR AND ENTRY ROADS SHALL INCLUDE 4' WIDE BIKE LANES ON EACH SIDE.
2. ALL ROAD RIGHT-OF-WAYS SHALL BE 50' UNLESS OTHERWISE NOTED.
3. PROJECT SIDEWALKS WILL CONNECT TO FUTURE PEDESTRIAN FACILITIES INSTALLED DURING OIL WELL ROAD EXPANSION.
4. AT THE DEVELOPER'S DISCRETION, A 10-FOOT WIDE PATHWAY MAY BE LOCATED WITHIN REQUIRED PERIMETER LANDSCAPE BUFFERS 25' OR GREATER IN WIDTH, PROVIDED THE REQUIRED PLANTINGS ARE LOCATED BETWEEN THE PROPERTY LINE AND THE PATHWAY, HOWEVER, IN SUCH CASES, THE BUFFER WIDTH SHALL BE INCREASED IN WIDTH BY 5 FEET ABOVE THE MINIMUM REQUIRED WIDTH. A 10-FOOT WIDE PATHWAY MAY ALSO BE LOCATED WITHIN PERIMETER BUFFERS THAT ARE LESS THAN 25' IN WIDTH, HOWEVER, IN SUCH CASES, THE BUFFER WIDTH SHALL BE INCREASED IN WIDTH BY 10 FEET ABOVE THE MINIMUM REQUIRED WIDTH.

LEGEND

——— SIDEWALKS

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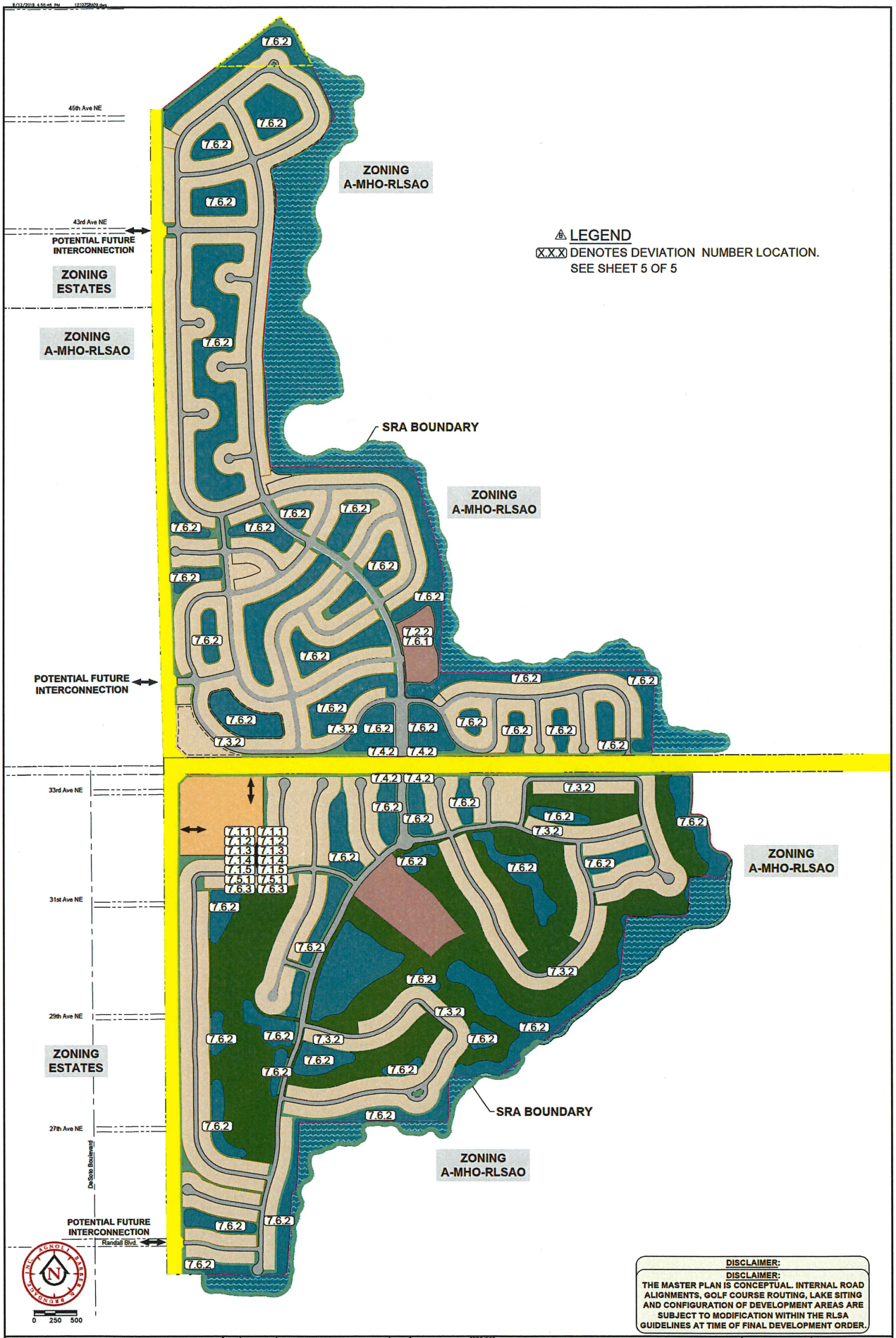
B	07/15/19	Responses per 2nd County review comments	ROP
A	05/29/19	Changes in response to county review comments	ROP

PROJECT NAME:	COLLIER ENTERPRISES MANAGEMENT, INC. RIVERGRASS VILLAGE
PLAN SET TITLE:	SRA SUBMITTAL PLANS
DWG. TITLE:	EXHIBIT (A) SRA MOBILITY PLAN

DESIGNED BY: ABB	PROJECT No.: 14-0018-CV
DATE: 05/19	ACAD FILE: 121075RA09
DRAWN BY: ROP	HORIZ. SCALE: 1"=1000'11X17
DATE: 05/19	VERT. SCALE: N/A
CHECKED BY: DJA	PLAN STAGE: REVIEW
DATE: 05/19	VERTICAL DATUM: N/A
DRAWING FILE No.: 12107	SHEET 3 OF 6



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NO.	DATE	REVISIONS	BY
D	09/11/19	Responses per 4th County review comments	ROP
C	08/09/19	Responses per 3rd County review comments	ROP
B	07/15/19	Responses per 2nd County review comments	ROP
A	05/29/19	Changes in response to county review comments	ROP

PROJECT NAME: *COLLIER ENTERPRISES MANAGEMENT, INC.*
RIVERGRASS VILLAGE

PLAN SET TITLE: *SRA SUBMITTAL PLANS*

DWG. TITLE: *EXHIBIT (A)*
SRA MASTER PLAN WITH DEVIATIONS

DESIGNED BY:	ABB
DATE:	05/19
DRAWN BY:	ROP
DATE:	05/19
CHECKED BY:	DJA
DATE:	05/19
DRAWING FILE No.:	12107
PROJECT No.:	14-0018-CV
ACAD FILE:	12107SRA09
HORIZ. SCALE:	1"=1000'11X17
VERT. SCALE:	N/A
PLAN STAGE:	REVIEW
VERTICAL DATUM:	N/A
SHEET	4 OF 6

DEVIATIONS:

7.1. Village Center Standards

1. A deviation from LDC Section 4.08.07.J.3.a.v.: "Village Design Criteria," which requires that the Village Center be developed in a progressive rural to urban continuum with the greatest density, intensity and diversity occurring within the Village Center, to the least density intensity and diversity occurring within the Neighborhood General, to instead allow the Village Center to be located as depicted on the SRA Master Plan.

2. A deviation from LDC Section 4.08.07.J.3.d.ii.p)ii) "General Parking Criteria," which states "The majority of parking spaces shall be provided off-street in the rear of buildings or along the side secondary streets. Parking is prohibited in front of buildings," to instead allow parking in front of buildings in the Village Center. A Type 'D' buffer per LDC at time of permitting will be required when parking is adjacent to or abutting a road.

3. A deviation from LDC Section 4.08.07.J.3.d.ii.q), which requires that the majority of parking be located in the rear of buildings and prohibits parking in the front of buildings except on street parking within the right-of-way to instead allow parking in the front, side and rear yards. A Type 'D' buffer per LDC at time of permitting will be required when parking is adjacent to or abutting a road.

4. A deviation from LDC Section 4.08.07.J.3.d.ii.q), which requires that "parking structures fronting on a primary street shall include ground floor retail" to instead require ground floor retail in parking structures supporting non-residential or mixed use development only, and not in the case of parking structures supporting only residential development.

5. A deviation from LDC Section 4.08.07.J.2.d.iii.e).i) and LDC Section 4.08.07.J.3.d.iii, "Maximum Multi-family lot size," which requires that multi-family residential lots be limited to a maximum of 4 acres, to instead allow lot sizes for multi-family to exceed 4 acres.

7.2. Neighborhood General Standards (which apply per LDC Section4.08.07.J.3.d.iii)

1. A deviation from LDC Section 4.08.07.J.2.d.iii.a) "Neighborhood General" Context Zone, which requires the inclusion of "residential, neighborhood scale goods and services, civic, institutional, parks, schools and accessory uses" within the Neighborhood General Context Zone, to instead not require neighborhood scale goods and services or schools as permitted uses within the Neighborhood General Context Zone.

2. A deviation from LDC Section 4.08.07.J.2.d.iii.f)iv), "Non-residential uses," which states "the maximum square footage per [non-residential] use shall be 3,000 square feet and per location shall be 15,000 square feet," to instead allow the Golf Club and Amenity Center sites and related uses to be a maximum of 50,000 square feet each.

3. A Deviation from LDC Section 4.08.07J.d.iii.e)ii), which states that in the case of "Multi-Family residential," "side yard setbacks shall be a minimum of 10 feet and rear yard setbacks shall be a minimum of 20 feet for the primary structure..." to instead allow for a side yard setback of 0 or 5 feet and a rear yard setback of 10 feet for zero lot line and townhome development, as set forth in Table 1: Neighborhood General - Required Minimum Yards and Maximum Building Height.

4. A deviation from LDC Section 4.08.07.J.2.d.iii.e)i) and LDC Section 4.08.07.J.3.d.iii, "Maximum Multi-family lot size," which requires that multi-family residential lots be limited to a maximum of 4 acres, to instead allow lot sizes for multi-family to exceed 4 acres.

7.3 Transportation Standards

1. A deviation from LDC Section: 6.06.01.J, "Street System Requirements," which states that "Cul-de-sacs in excess of 1,000 feet shall not be permitted unless existing topographical conditions or other natural features preclude a street layout to avoid longer cul-de-sacs," to instead allow the maximum permanent cul-de-sac length to be 1,200 feet as measured along the center line of the right-of-way from the intersecting right-of-way center line to the end of the cul-de-sac right-of-way.

2. A deviation from LDC Section 4.08.07.J.1.b. "Figure(s) 5, 6, and 7, Local Street |Neighborhood General" for cross-sections requiring 5-foot-wide sidewalks on both sides of a local street, to instead allow for a 10-foot-wide sidewalk or multi-use pathway on only one side of such street only where residential development is located on only one side of the street.

3. A deviation from LDC Section 4.08.07.J.1.b(6), "Figures 5, 6, and 7, Local Street Neighborhood General," which requires a 6-foot-wide planting area between the travel lane and the sidewalk, to instead allow for a 5-foot-wide planting area in the same location for local roads within the project in Neighborhood General. In such cases, either a root barrier or structural soil shall be utilized. If the option of structural soil is utilized, a minimum of 2 c.f. of structural soil per square feet of mature tree crown projection shall be provided.

DEVIATIONS CONTINUED:

7.4 Sign Standards

1. A deviation from LDC Section 5.06.02.B.5.a, "On-premises directional signs within residential districts," which requires on-premise directional signs to be set back a minimum of 10 feet from the edge of the roadway, paved surface or back of the curb, to instead allow a minimum setback of 5 feet from the edge of the roadway, paved surface or back of the curb, limited to signs internal to the SRA only. This excludes signage along County owned roadways.

2. A deviation from LDC Section 5.06.02.B.6, "On-premises signs within residential districts," which allows "two ground signs with a maximum height of 8 feet at each entrance to a multi-family or single-family development," to instead allow a maximum height of 12 feet for such signs, limited to the two primary project entrances from Oil Well Road (not including access points to the Village Center Tract).

7.5 Landscape Standards

1. A deviation from LDC Section 4.06.02.C., Buffer Requirements, "Types of buffers," Table 2.4 Information, Footnote (3) which requires "Buffer areas between commercial outparcels located within a shopping center, Business Park, or similar commercial development may have a shared buffer 15 feet wide with each abutting property contributing 7.5 feet", to instead allow a shared buffer 10 feet wide with each abutting property contributing 5 feet.

7.6 Other Deviations

1. A deviation from LDC Section 4.05.04.G, "Parking Space Requirements," which requires 1 parking space per 100 square feet for recreation facilities (indoor) sports, exercise, fitness, aerobics, or health clubs to instead allow for parking for the Golf Club and Amenity Center sites to be calculated at 1 space per 200 square feet of indoor square footage, excluding kitchen or storage space.

2. A deviation from LDC Section 3.05.10.A.2. - "Location Criteria," which requires that "LSPA [littoral shelf planting areas] shall be concentrated in one location of the lake(s), preferably adjacent to a preserve area," to instead allow for required littoral shelf planting areas to be aggregated in certain specific development lakes, including the development lake and WRA system that runs along the eastern perimeter of the SRA.

3. A deviation from LDC Section 5.03.02.D.1, "Fences and Walls, Commercial or Industrial Zoning Districts," which states that fences or walls in commercial or industrial areas are limited to a maximum height of 8 feet, to instead allow a maximum height of 10 feet.

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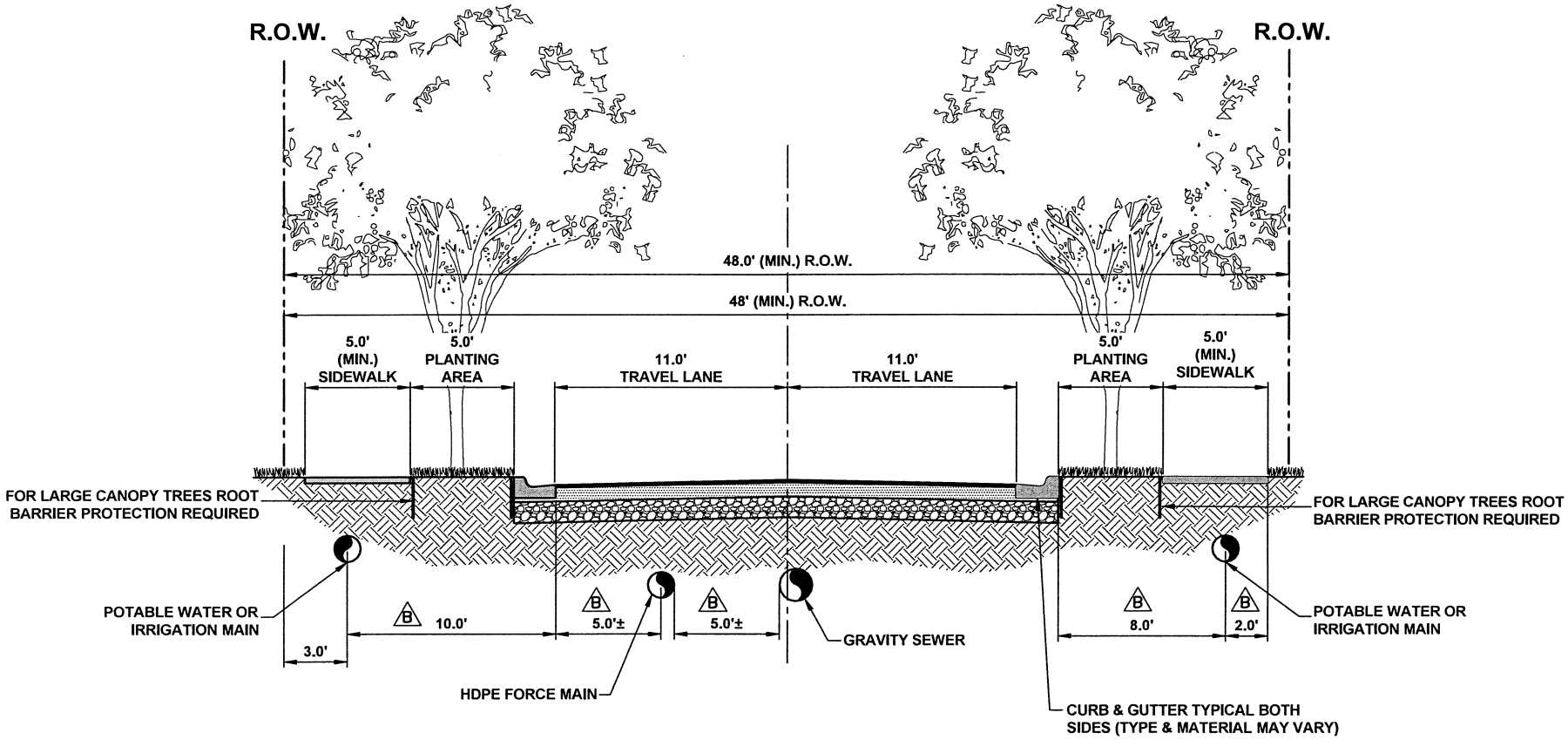
D	09/11/19	Responses per 4th County review comments	ROP
C	08/09/19	Responses per 3rd County review comments	ROP
B	07/15/19	Responses per 2nd County review comments	ROP
A	05/29/19	Changes in response to county review comments	ROP

PROJECT NAME: COLLIER ENTERPRISES MANAGEMENT, INC. RIVERGRASS VILLAGE
PLAN SET TITLE: SRA SUBMITTAL PLANS
DWG. TITLE: EXHIBIT (A) SRA MASTER PLAN DEVIATION DESCRIPTIONS

DESIGNED BY: ABB	PROJECT No.: 14-0018-CV
DATE: 05/19	ACAD FILE: 12107SRA09
DRAWN BY: ROP	HORIZ. SCALE: 1"=1000'11X17
DATE: 05/19	VERT. SCALE: N/A
CHECKED BY: DJA	PLAN STAGE: REVIEW
DATE: 05/19	VERTICAL DATUM: N/A
DRAWING FILE No.: 12107	SHEET 6 OF 6



SRA LOCAL STREET
R.O.W. SECTION

AGNOLI BARBER & BRUNDAGE, INC.
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Collier County: 7400 Tamiami Trail N. - Naples, FL - 34108 Ph.: (239) 597-3111 - Fax: (239) 566-2203
Certificate of Authorization Nos. LB 3664 and EB 3664

NO.	DATE	REVISIONS	BY
B	07/15/19	Responses to 2nd County Review Comments	ROP

PROJECT NAME: COLLIER ENTERPRISES MANAGEMENT, INC
RIVERGRASS VILLAGE

PLAN SET TITLE: SRA SUBMITTAL PLANS

DWG. TITLE: EXHIBIT (A) TYPICAL LOCAL STREET CROSS SECTION

DESIGNED BY: ABB		PROJECT No.: 14-0018-CV	
DATE: 02/19		ACAD FILE: 12107SRA09	
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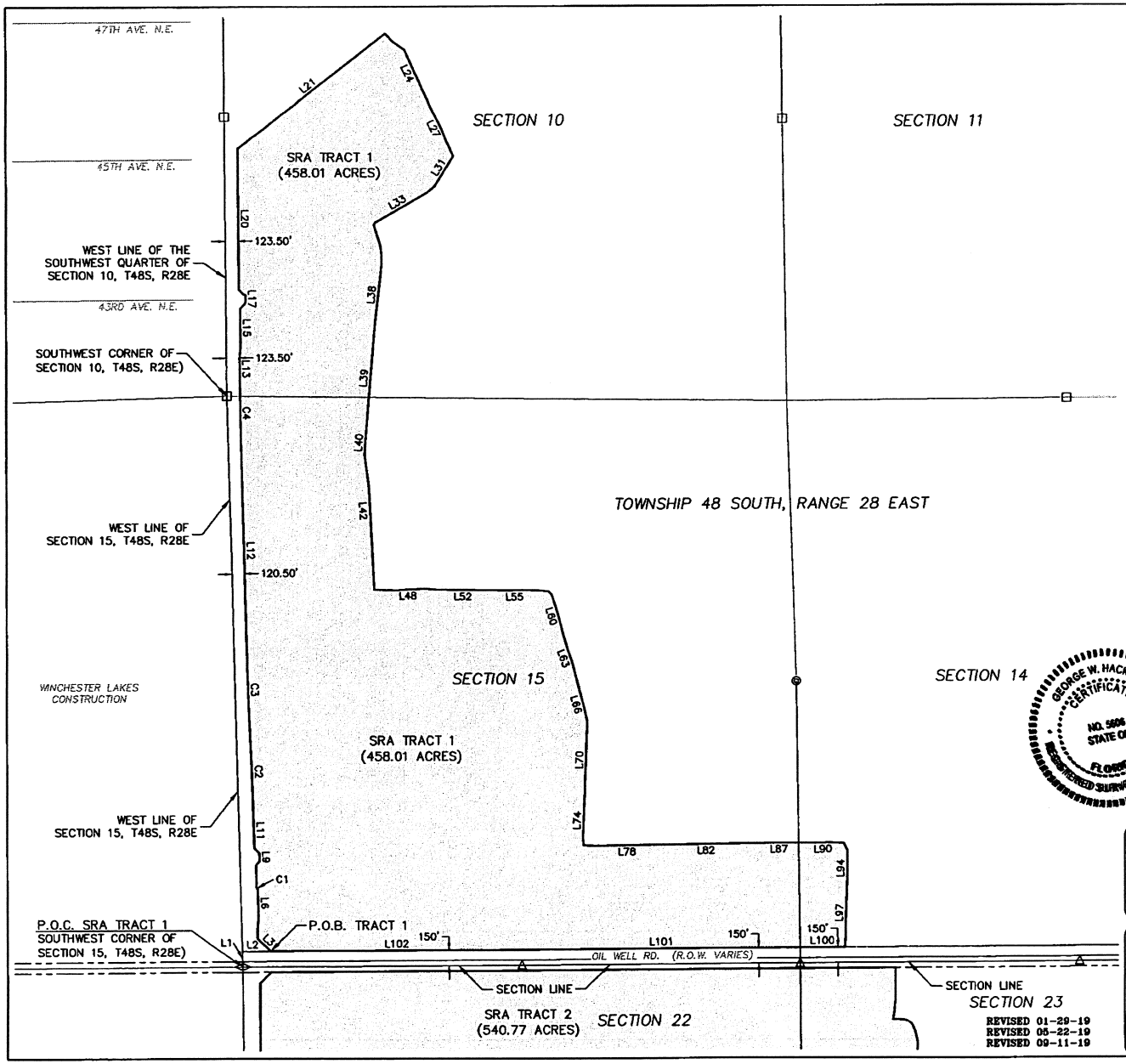
DATE: 02/19		VERT. SCALE: N/A	
CHECKED BY: DJA		PLAN STAGE: REVIEW	
DATE: 02/19		LAYOUT TAB: 2	
DRAWING FILE No.: 12107		SHEET 6 OF 6	

EXHIBIT B



N

SCALE: 1" = 1000'

GENERAL NOTES:

1. DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
2. COORDINATES AND BEARINGS ARE BASED ON THE FLORIDA STATE PLANE GRID, EAST ZONE, 83 / 90 ADJUSTMENT.
3. THE LEGAL DESCRIPTIONS FOR EACH PARCEL IN THIS SKETCH AND DESCRIPTION ARE WRITTEN IN A CLOCKWISE DIRECTION.
4. THE LINE AND CURVE NUMBERS PROCEED IN A CLOCKWISE DIRECTION AROUND EACH PARCEL AND ARE IN CONSECUTIVE ORDER. THE FIRST AND LAST LINE AND CURVE NUMBERS FOR EACH PARCEL ARE SHOWN ALONG WITH OCCASIONAL LINE AND CURVE NUMBER DEPICTIONS, FOR MAP CLARITY PURPOSES.
5. P.O.C. = POINT OF COMMENCEMENT.
   P.O.B. = POINT OF BEGINNING.

P.O.B. COORDINATE LISTING PER TRACT:

SRA TRACT 1 = E. 488292.66 N. 712883.76

SRA TRACT 2 = E. 488299.30 N. 712683.79

PREPARED FOR THE BENEFIT OF:
COLLIER ENTERPRISES MANAGEMENT, INC.

AGNOLI, BARBER & BRUNDAGE, INC.
PROFESSIONAL ENGINEERS, PLANNERS, SURVEYORS & LANDSCAPE ARCHITECTS

GEORGE W. HACKNEY CERTIFICATE NO. 5606 STATE OF FLORIDA REGISTERED SURVEYOR & MAPPER

George W. Hackney

GEORGE W. HACKNEY, P.S.M. No. 5606 SEPTEMBER 11, 2019

LEGAL DESCRIPTIONS ATTACHED HERETO

NOT A SURVEY

REVISED 01-29-19
REVISED 05-22-19
REVISED 09-11-19

for: COLLIER ENTERPRISES MANAGEMENT, INC.

title: SKETCH AND DESCRIPTION OF THE RIVERGRASS SRA TRACT 1
BEING PART OF
SECTIONS 10, 14 AND 15
TOWNSHIP 48 SOUTH, RANGE 28 EAST
COLLIER COUNTY, FLORIDA

AGNOLI BARBER & BRUNDAGE, INC.
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Certificate of Authorization Nos. LB 3064, EB 3064 and LC26000630

bk:	pg:	date: JAN. 14, 2019
		scale: 1" = 1000'
		cogo #: 8378 / 14-0018

design:	
drawn:	JAN
checked:	GWH
acad #:	12102-SD1
view:	LIMITS
project #:	14-0018
sheet #:	1 of 5
file #:	12102

EXHIBIT B

TRACT 1 LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 01°27'11" W	150.03'
L2	N 89°44'36" E	267.37'
L3	N 46°27'11" W	168.59'
L4	N 01°15'52" W	98.06'
L5	N 05°34'42" E	100.72'
L6	N 01°15'52" W	282.14'
L7	N 01°15'52" W	210.74'
L8	N 43°32'49" E	48.71'
L9	N 01°27'11" W	80.00'
L10	N 46°27'11" W	64.93'
L11	N 01°15'52" W	338.97'
L12	N 01°27'11" W	1862.06'
L13	N 00°25'50" W	144.76'
L14	N 06°24'31" E	100.77'
L15	N 00°25'50" W	370.50'
L16	N 44°34'10" E	70.20'
L17	N 00°25'50" W	80.00'
L18	S 89°34'10" W	12.00'
L19	N 45°25'50" W	70.20'
L20	N 00°25'50" W	1328.34'
L21	N 51°59'09" E	1784.63'
L22	S 43°35'16" E	112.09'
L23	S 54°40'31" E	129.64'
L24	S 24°40'19" E	433.97'
L25	S 25°23'25" E	231.30'
L26	S 27°32'27" E	92.23'
L27	S 27°32'27" E	71.38'
L28	S 21°54'03" E	117.24'
L29	S 24°19'16" E	174.92'
L30	S 12°23'41" W	2.34'
L31	S 32°09'27" W	339.25'
L32	S 52°01'13" W	100.40'
L33	S 60°42'36" W	566.48'
L34	S 22°58'58" W	25.53'
L35	S 17°42'38" E	185.76'
L36	S 08°50'57" E	84.78'
L37	S 00°37'18" E	111.35'
L38	S 06°25'55" W	579.63'
L39	S 04°51'04" W	1008.13'
L40	S 04°03'32" W	227.10'
L41	S 07°36'03" E	307.77'
L42	S 02°55'35" E	450.55'
L43	S 02°50'32" E	532.54'
L44	S 87°41'14" E	100.82'
L45	S 89°24'35" E	37.91'
L46	S 89°24'02" E	81.30'
L47	N 84°39'21" E	75.01'
L48	N 88°33'44" E	59.98'
L49	N 87°35'40" E	139.27'
L50	S 84°42'44" E	130.07'
L51	S 89°32'11" E	147.65'

TRACT 1 LINE TABLE (CONT.)		
LINE	BEARING	DISTANCE
L52	S 89°52'52" E	156.15'
L53	S 88°57'20" E	188.96'
L54	S 89°41'06" E	131.58'
L55	N 89°41'36" E	177.16'
L56	S 89°26'36" E	147.86'
L57	S 84°43'55" E	101.39'
L58	S 41°55'22" E	47.92'
L59	S 19°09'53" E	111.96'
L60	S 16°32'54" E	153.04'
L61	S 15°10'48" E	136.90'
L62	S 16°15'30" E	151.98'
L63	S 20°19'26" E	103.56'
L64	S 15°22'59" E	129.81'
L65	S 14°53'35" E	209.16'
L66	S 15°10'56" E	129.48'
L67	S 12°02'51" E	126.36'
L68	S 02°40'13" W	140.11'
L69	S 01°53'41" W	155.98'
L70	S 01°52'27" W	127.99'
L71	S 02°03'44" W	131.45'
L72	S 01°42'03" W	100.08'
L73	S 02°55'04" W	105.23'
L74	S 02°38'14" W	339.69'
L75	S 07°27'21" E	62.88'
L76	S 88°18'24" E	115.67'
L77	N 89°56'54" E	233.19'
L78	N 88°55'25" E	127.66'
L79	N 89°10'46" E	196.35'
L80	N 89°57'03" E	161.31'
L81	N 88°48'44" E	199.43'
L82	N 89°29'45" E	274.04'
L83	N 89°15'30" E	181.32'
L84	N 88°24'35" E	99.68'
L85	N 89°41'41" E	88.89'
L86	N 88°56'20" E	108.92'
L87	N 89°19'04" E	161.23'
L88	S 88°39'37" E	106.23'
L89	S 89°55'34" E	148.00'
L90	N 88°27'14" E	147.30'
L91	S 87°18'29" E	135.47'
L92	S 26°41'05" E	76.71'
L93	S 01°02'04" E	108.01'
L94	S 01°46'53" W	128.59'
L95	S 01°59'21" W	164.22'
L96	S 01°53'56" W	115.91'
L97	S 01°58'46" W	159.80'
L98	S 00°08'30" W	113.36'
L99	S 03°38'14" W	130.20'
L100	S 89°44'31" W	427.12'
L101	S 89°44'43" W	2667.40'
L102	S 89°44'36" W	2406.94'

TRACT 1 CURVE TABLE			
CURVE	RADIUS	DELTA ANGLE	ARC LENGTH
C1	11.00'	95°12'57"	18.28'
C2	25047.00'	1°43'58"	757.50'
C3	29183.00'	1°32'39"	786.46'
C4	42953.00'	1°01'22"	766.67'

REVISED 01-29-19
REVISED 05-22-19
REVISED 09-11-19

LEGAL DESCRIPTIONS ATTACHED HERETO

NOT A SURVEY

for: COLLIER ENTERPRISES MANAGEMENT, INC.

title: SKETCH AND DESCRIPTION OF THE RIVERGRASS SRA TRACT 1
BEING PART OF
SECTIONS 22, 23 AND 27
TOWNSHIP 48 SOUTH, RANGE 28 EAST
COLLIER COUNTY, FLORIDA

AGNOLI BARBER & BRUNDAGE, INC.
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7400 Trail Blvd., Suite 200, Naples, FL 34108 Ph.: (239)597-3111 Fax: (239)566-2203
Certificate of Authorization Nos. LB 3664, ED 3664 and LC26000620

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drawn: JAN
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acad #: 12102-SD1
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REF. ABB DWG #12102-SD1 (SRA TRACT 1-REV.DOC)

EXHIBIT B

LEGAL DESCRIPTION OF RIVERGRASS SRA, TRACT 1

ALL THAT PART SECTIONS 10, 14 AND 15, TOWNSHIP 48 SOUTH, RANGE 28 EAST, COLLIER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE AFORESAID SECTION 15;
THENCE N 01°27'11" W ALONG THE WEST LINE OF SAID SECTION 15 A DISTANCE OF 150.03 FEET TO AN INTERSECTION WITH A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 15;
THENCE ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 267.37 FEET TO THE POINT OF BEGINNING OF THE TRACT HEREIN BEING DESCRIBED, SAID POINT OF BEGINNING OF TRACT 1 HAVING A NORTHING COORDINATE VALUE OF 712883.76 AND AN EASTING COORDINATE VALUE OF 488292.66 BASED ON THE FLORIDA STATE PLANE EAST ZONE, 83/90 ADJUSTMENT;

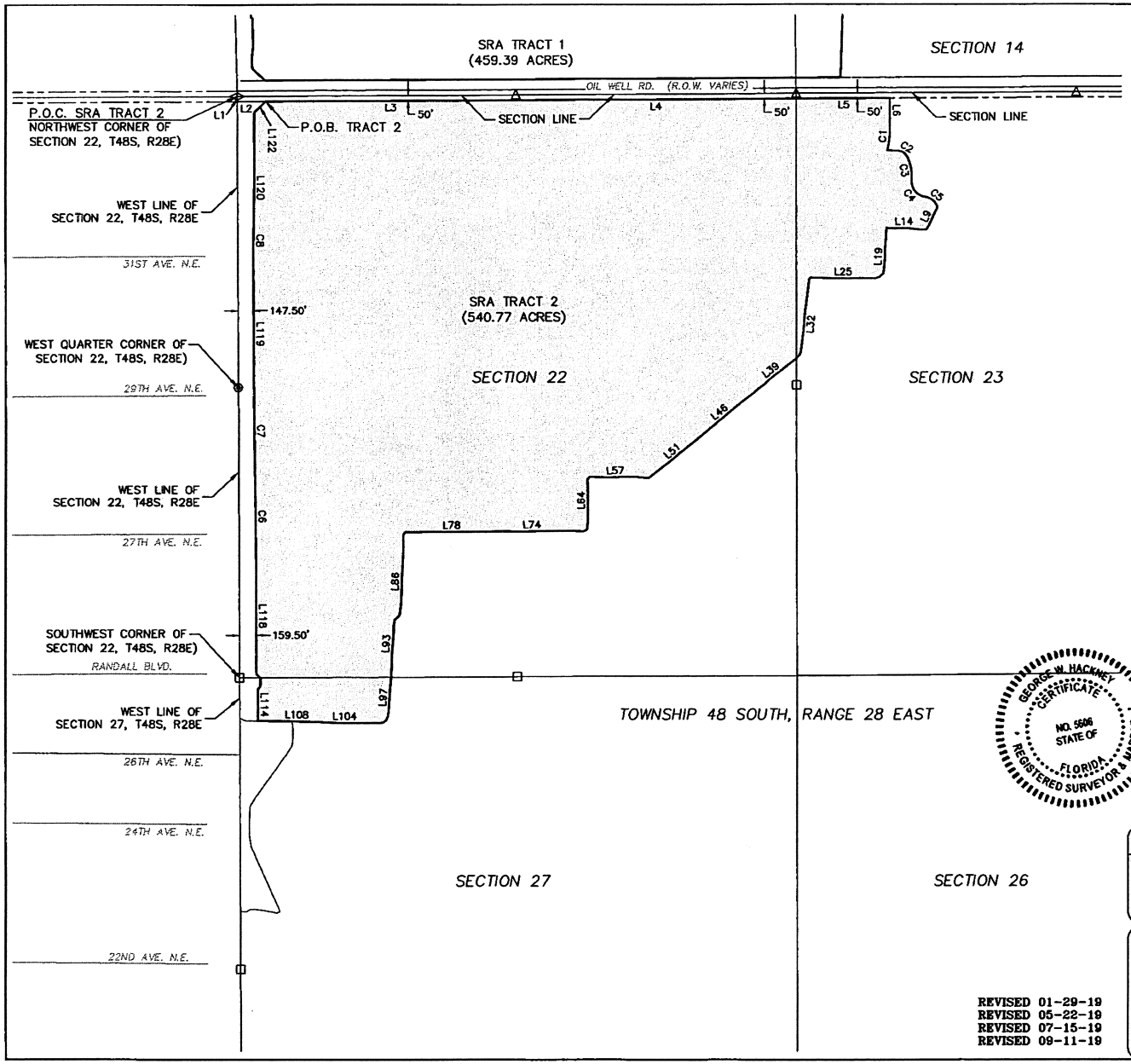
THENCE LEAVING SAID PARALLEL LINE N 46°27'11" W A DISTANCE OF 168.59 FEET;
THENCE N 01°15'52" W A DISTANCE OF 98.06 FEET;
THENCE N 05°34'42" E A DISTANCE OF 100.72 FEET;
THENCE N 01°15'52" W A DISTANCE OF 282.14 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHEASTERLY WHOSE RADIUS POINT BEARS N 06°28'49" W AND HAVING A RADIUS OF 11.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 95°12'57" AN ARC DISTANCE OF 18.28 FEET;
THENCE N 01°15'52" W A DISTANCE OF 210.74 FEET;
THENCE N 43°32'49" E A DISTANCE OF 48.71 FEET;
THENCE N 01°27'11" W A DISTANCE OF 80.00 FEET;
THENCE N 46°27'11" W A DISTANCE OF 64.93 FEET;
THENCE N 01°15'52" W A DISTANCE OF 338.97 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 25047.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°43'58" AN ARC DISTANCE OF 757.50 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 29183.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°32'39" AN ARC DISTANCE OF 786.46 FEET TO AN INTERSECTION WITH A LINE 120.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 15;
THENCE ALONG SAID PARALLEL LINE N 01°27'11" W A DISTANCE OF 1862.06 FEET TO THE BEGINNING OF A CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 42953.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°01'22" AN ARC DISTANCE OF 766.67 FEET TO AN INTERSECTION WITH A LINE 123.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 10;
THENCE ALONG SAID PARALLEL LINE N 00°25'50" W A DISTANCE OF 144.76 FEET;
THENCE LEAVING SAID PARALLEL LINE N 06°24'31" E A DISTANCE OF 100.77 FEET;
THENCE N 00°25'50" W A DISTANCE OF 370.50 FEET;
THENCE N 44°34'10" E A DISTANCE OF 70.20 FEET

THENCE N 00°25'50" W A DISTANCE OF 80.00 FEET;
THENCE S 89°34'10" W A DISTANCE OF 12.00 FEET;
THENCE N 45°25'50" W A DISTANCE OF 70.20 FEET TO AN INTERSECTION WITH A LINE 123.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF AFORESAID SECTION 10;
THENCE ALONG SAID PARALLEL LINE N 00°25'50" W A DISTANCE OF 1328.34 FEET;
THENCE LEAVING SAID PARALLEL LINE N 51°59'09" E A DISTANCE OF 1784.63 FEET;
THENCE S 43°35'16" E A DISTANCE OF 112.09 FEET;
THENCE S 54°40'31" E A DISTANCE OF 129.64 FEET;
THENCE S 24°40'19" E A DISTANCE OF 433.97 FEET;
THENCE S 25°23'25" E A DISTANCE OF 231.30 FEET;
THENCE S 27°32'27" E A DISTANCE OF 92.23 FEET;
THENCE S 27°32'27" E A DISTANCE OF 71.38 FEET;
THENCE S 21°54'03" E A DISTANCE OF 117.24 FEET;
THENCE S 24°19'16" E A DISTANCE OF 174.92 FEET;
THENCE S 12°23'41" W A DISTANCE OF 2.34 FEET;
THENCE S 32°09'27" W A DISTANCE OF 339.25 FEET;
THENCE S 52°01'13" W A DISTANCE OF 100.40 FEET;
THENCE S 60°42'36" W A DISTANCE OF 566.48 FEET;
THENCE S 22°58'58" W A DISTANCE OF 25.53 FEET;
THENCE S 17°42'38" E A DISTANCE OF 185.76 FEET;
THENCE S 08°50'57" E A DISTANCE OF 84.78 FEET;
THENCE S 00°37'18" E A DISTANCE OF 111.35 FEET;
THENCE S 06°25'55" W A DISTANCE OF 579.63 FEET;
THENCE S 04°51'04" W A DISTANCE OF 1008.13 FEET;
THENCE S 04°03'32" W A DISTANCE OF 227.10 FEET;
THENCE S 07°36'03" E A DISTANCE OF 307.77 FEET;
THENCE S 02°55'35" E A DISTANCE OF 450.55 FEET;
THENCE S 02°50'32" E A DISTANCE OF 532.54 FEET;
THENCE S 87°41'14" E A DISTANCE OF 100.82 FEET;
THENCE S 89°24'35" E A DISTANCE OF 37.91 FEET;
THENCE S 89°24'02" E A DISTANCE OF 81.30 FEET;
THENCE N 84°39'21" E A DISTANCE OF 75.01 FEET;
THENCE N 88°33'44" E A DISTANCE OF 59.98 FEET;
THENCE N 87°35'40" E A DISTANCE OF 139.27 FEET;
THENCE S 84°42'44" E A DISTANCE OF 130.07 FEET;
THENCE S 89°32'11" E A DISTANCE OF 147.65 FEET;
THENCE S 89°52'52" E A DISTANCE OF 156.15 FEET;
THENCE S 88°57'20" E A DISTANCE OF 188.96 FEET;
THENCE S 89°41'06" E A DISTANCE OF 131.58 FEET;
THENCE N 89°41'36" E A DISTANCE OF 177.16 FEET;
THENCE S 89°26'36" E A DISTANCE OF 147.86 FEET;
THENCE S 84°43'55" E A DISTANCE OF 101.39 FEET;
THENCE S 41°55'22" E A DISTANCE OF 47.92 FEET;
THENCE S 19°09'53" E A DISTANCE OF 111.96 FEET;
THENCE S 16°32'54" E A DISTANCE OF 153.04 FEET;
THENCE S 15°10'48" E A DISTANCE OF 136.90 FEET;
THENCE S 16°15'30" E A DISTANCE OF 151.98 FEET;
THENCE S 20°19'26" E A DISTANCE OF 103.56 FEET;
THENCE S 15°22'59" E A DISTANCE OF 129.81 FEET;
THENCE S 14°53'35" E A DISTANCE OF 209.16 FEET;
THENCE S 15°10'56" E A DISTANCE OF 129.48 FEET;
THENCE S 12°02'51" E A DISTANCE OF 126.36 FEET;
THENCE S 02°40'13" W A DISTANCE OF 140.11 FEET;
THENCE S 01°53'41" W A DISTANCE OF 155.98 FEET;
THENCE S 01°52'27" W A DISTANCE OF 127.99 FEET;
THENCE S 02°03'44" W A DISTANCE OF 131.45 FEET;

THENCE S 01°42'03" W A DISTANCE OF 100.08 FEET;
THENCE S 02°55'04" W A DISTANCE OF 105.23 FEET;
THENCE S 02°38'14" W A DISTANCE OF 339.69 FEET;
THENCE S 07°27'21" E A DISTANCE OF 62.88 FEET;
THENCE S 88°18'24" E A DISTANCE OF 115.67 FEET;
THENCE N 89°56'54" E A DISTANCE OF 233.19 FEET;
THENCE N 88°55'25" E A DISTANCE OF 127.66 FEET;
THENCE N 89°10'46" E A DISTANCE OF 196.35 FEET;
THENCE N 89°57'03" E A DISTANCE OF 161.31 FEET;
THENCE N 88°48'44" E A DISTANCE OF 199.43 FEET;
THENCE N 89°29'45" E A DISTANCE OF 274.04 FEET;
THENCE N 89°15'30" E A DISTANCE OF 181.32 FEET;
THENCE N 88°24'35" E A DISTANCE OF 99.68 FEET;
THENCE N 89°41'41" E A DISTANCE OF 88.89 FEET;
THENCE N 88°56'20" E A DISTANCE OF 108.92 FEET;
THENCE N 89°19'04" E A DISTANCE OF 161.23 FEET;
THENCE S 88°39'37" E A DISTANCE OF 106.23 FEET;
THENCE S 89°55'34" E A DISTANCE OF 148.00 FEET;
THENCE N 88°27'14" E A DISTANCE OF 147.30 FEET;
THENCE S 87°18'29" E A DISTANCE OF 135.47 FEET;
THENCE S 26°41'05" E A DISTANCE OF 76.71 FEET;
THENCE S 01°02'04" E A DISTANCE OF 108.01 FEET;
THENCE S 01°46'53" W A DISTANCE OF 128.59 FEET;
THENCE S 01°59'21" W A DISTANCE OF 164.22 FEET;
THENCE S 01°53'56" W A DISTANCE OF 115.91 FEET;
THENCE S 01°58'46" W A DISTANCE OF 159.80 FEET;
THENCE S 00°08'30" W A DISTANCE OF 113.36 FEET;
THENCE S 03°38'14" W A DISTANCE OF 130.20 FEET TO AN INTERSECTION WITH A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF THE AFORESAID SECTION 14;
THENCE ALONG SAID PARALLEL LINE S 89°44'31" W A DISTANCE OF 427.12 FEET;
THENCE S 89°44'43" W ALONG A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 15 A DISTANCE OF 2667.40 FEET;
THENCE S 89°44'36" W ALONG A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 15 A DISTANCE OF 2406.94 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED.

CONTAINING A TOTAL AREA OF APPROXIMATELY 458.01 ACRES.
REF. ABB DWG #12102-SD1 (SRA TRACT 1-REV.DOC)

EXHIBIT B



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SCALE: 1" = 1000'

GENERAL NOTES:

1. DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
2. COORDINATES AND BEARINGS ARE BASED ON THE FLORIDA STATE PLANE GRID, EAST ZONE, 83 / 90 ADJUSTMENT.
3. THE LEGAL DESCRIPTIONS FOR EACH PARCEL IN THIS SKETCH AND DESCRIPTION ARE WRITTEN IN A CLOCKWISE DIRECTION.
4. THE LINE AND CURVE NUMBERS PROCEED IN A CLOCKWISE DIRECTION AROUND EACH PARCEL AND ARE IN CONSECUTIVE ORDER. THE FIRST AND LAST LINE AND CURVE NUMBERS FOR EACH PARCEL ARE SHOWN ALONG WITH OCCASIONAL LINE AND CURVE NUMBER DEPICTIONS, FOR MAP CLARITY PURPOSES.
5. P.O.C. = POINT OF COMMENCEMENT.
   P.O.B. = POINT OF BEGINNING.

P.O.B. COORDINATE LISTING PER TRACT:

SRA TRACT 1 = E. 488175.80 N. 712883.24

SRA TRACT 2 = E. 488229.33 N. 712683.47

PREPARED FOR THE BENEFIT OF:
COLLIER ENTERPRISES MANAGEMENT, INC.

AGNOLI, BARBER & BRUNDAGE, INC.
PROFESSIONAL ENGINEERS, PLANNERS, SURVEYORS
& LANDSCAPE ARCHITECTS

GEORGE W. HACKNEY CERTIFICATE NO. 5606 STATE OF FLORIDA REGISTERED SURVEYOR & MAPPER

George W. Hackney

GEORGE W. HACKNEY, P.S.M. NO. 5606 SEPTEMBER 11, 2019

LEGAL DESCRIPTIONS ATTACHED HERETO

NOT A SURVEY

REVISED 01-29-19
REVISED 05-22-19
REVISED 07-15-19
REVISED 09-11-19

for: COLLIER ENTERPRISES MANAGEMENT, INC.

title: SKETCH AND DESCRIPTION OF THE RIVERGRASS SRA TRACT 2
BEING PART OF
SECTIONS 22, 23 AND 27
TOWNSHIP 48 SOUTH, RANGE 28 EAST
COLLIER COUNTY, FLORIDA

AGNOLI BARBER & BRUNDAGE, INC.
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Certificate of Authorization Nos. LB 3864, EB 3864 and LCB0000820

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drawn:	JAN
checked:	GWH
acad #:	12102-SD2
view:	LIMITS
project #:	14-0018
sheet #:	1 of 6
file #:	12102

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REF. ABB DWG #12102-SD2 (SRA TRACT 2-REV.DOC)

EXHIBIT B

LEGAL DESCRIPTION OF RIVERGRASS SRA, TRACT 2

ALL THAT PART SECTIONS 22, 23 AND 27, TOWNSHIP 48 SOUTH, RANGE 28 EAST, COLLIER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF THE AFORESAID SECTION 22;
THENCE S 00°15'52" E ALONG THE WEST LINE OF SAID SECTION 22 A DISTANCE OF 50.00 FEET TO AN INTERSECTION WITH A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 22;
THENCE ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 269.97 FEET TO THE POINT OF BEGINNING OF THE TRACT HEREIN BEING DESCRIBED, SAID POINT OF BEGINNING OF TRACT 2 HAVING A NORTHING COORDINATE VALUE OF 712683.79 AND AN EASTING COORDINATE VALUE OF 488299.30 BASED ON THE FLORIDA STATE PLANE EAST ZONE, 83/90 ADJUSTMENT;

THENCE CONTINUING ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 2401.19 FEET;
THENCE N 89°44'43" E ALONG A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 22 A DISTANCE OF 2667.40 FEET;
THENCE N 89°44'31" E ALONG A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF NORTHWEST QUARTER OF AFORESAID SECTION 23 A DISTANCE OF 906.16 FEET;
THENCE LEAVING SAID PARALLEL LINE S 00°15'17" E A DISTANCE OF 240.22 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 1260.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 11°31'33" AN ARC DISTANCE OF 253.47 FEET;
THENCE S 88°46'59" E A DISTANCE OF 91.02 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 112.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 64°09'25" AN ARC DISTANCE OF 125.41 FEET TO THE BEGINNING OF A COMPOUND CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 452.50 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 28°22'04" AN ARC DISTANCE OF 224.04 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE NORTHEASTERLY AND HAVING A RADIUS OF 145.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 86°32'48" AN ARC DISTANCE OF 219.03 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 145.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 64°54'46" AN ARC DISTANCE OF 164.28 FEET;
THENCE S 26°22'26" W A DISTANCE OF 78.76 FEET;
THENCE S 23°34'22" W A DISTANCE OF 86.60 FEET;
THENCE S 29°16'43" W A DISTANCE OF 71.59 FEET;
THENCE S 89°10'15" W A DISTANCE OF 48.17 FEET;
THENCE N 84°13'50" W A DISTANCE OF 68.87 FEET;
THENCE N 81°39'21" W A DISTANCE OF 58.00 FEET;
THENCE S 88°31'22" W A DISTANCE OF 73.27 FEET;

THENCE S 89°52'05" W A DISTANCE OF 74.62 FEET;
THENCE N 86°38'30" W A DISTANCE OF 59.97 FEET;
THENCE S 02°15'48" W A DISTANCE OF 96.14 FEET;
THENCE S 04°50'51" W A DISTANCE OF 102.27 FEET;
THENCE S 02°25'20" W A DISTANCE OF 149.64 FEET;
THENCE S 07°13'14" W A DISTANCE OF 81.69 FEET;
THENCE S 48°52'58" W A DISTANCE OF 55.18 FEET;
THENCE S 71°37'57" W A DISTANCE OF 40.89 FEET;
THENCE N 88°32'46" W A DISTANCE OF 141.83 FEET;
THENCE S 88°29'37" W A DISTANCE OF 97.42 FEET;
THENCE N 89°39'35" W A DISTANCE OF 135.85 FEET;
THENCE N 89°08'23" W A DISTANCE OF 108.95 FEET;
THENCE N 87°54'42" W A DISTANCE OF 137.83 FEET;
THENCE S 40°55'18" W A DISTANCE OF 22.02 FEET;
THENCE S 06°06'28" W A DISTANCE OF 77.11 FEET;
THENCE S 07°11'52" W A DISTANCE OF 132.49 FEET;
THENCE S 07°08'24" W A DISTANCE OF 152.64 FEET;
THENCE S 04°07'46" W A DISTANCE OF 121.96 FEET;
THENCE S 07°31'04" W A DISTANCE OF 124.64 FEET;
THENCE S 08°20'22" W A DISTANCE OF 83.85 FEET;
THENCE S 25°49'33" W A DISTANCE OF 37.83 FEET;
THENCE S 47°59'25" W A DISTANCE OF 51.41 FEET;
THENCE S 51°45'07" W A DISTANCE OF 74.36 FEET;
THENCE S 51°47'20" W A DISTANCE OF 104.73 FEET;
THENCE S 51°58'26" W A DISTANCE OF 128.55 FEET;
THENCE S 45°42'58" W A DISTANCE OF 56.22 FEET;
THENCE S 52°27'49" W A DISTANCE OF 82.31 FEET;
THENCE S 49°59'31" W A DISTANCE OF 88.78 FEET;
THENCE S 51°51'20" W A DISTANCE OF 94.46 FEET;
THENCE S 50°46'19" W A DISTANCE OF 102.93 FEET;
THENCE S 51°15'09" W A DISTANCE OF 83.29 FEET;
THENCE S 50°51'46" W A DISTANCE OF 109.82 FEET;
THENCE S 49°13'58" W A DISTANCE OF 79.67 FEET;
THENCE S 51°18'11" W A DISTANCE OF 172.20 FEET;
THENCE S 51°10'53" W A DISTANCE OF 200.05 FEET;
THENCE S 52°46'54" W A DISTANCE OF 30.58 FEET;
THENCE S 49°14'37" W A DISTANCE OF 104.15 FEET;
THENCE S 52°46'51" W A DISTANCE OF 96.07 FEET;
THENCE S 51°43'33" W A DISTANCE OF 147.84 FEET;
THENCE S 48°39'56" W A DISTANCE OF 36.37 FEET;
THENCE N 84°45'00" W A DISTANCE OF 133.18 FEET;
THENCE S 89°13'29" W A DISTANCE OF 121.46 FEET;
THENCE S 88°20'38" W A DISTANCE OF 118.91 FEET;
THENCE N 88°43'01" W A DISTANCE OF 98.43 FEET;
THENCE N 88°59'13" W A DISTANCE OF 77.80 FEET;
THENCE S 80°31'23" W A DISTANCE OF 13.27 FEET;
THENCE S 48°19'20" W A DISTANCE OF 22.69 FEET;
THENCE S 00°57'07" W A DISTANCE OF 34.49 FEET;
THENCE S 00°45'26" E A DISTANCE OF 119.90 FEET;
THENCE S 00°15'35" W A DISTANCE OF 103.01 FEET;
THENCE S 01°00'53" E A DISTANCE OF 99.24 FEET;
THENCE S 01°53'12" W A DISTANCE OF 72.46 FEET;
THENCE S 04°23'00" W A DISTANCE OF 52.96 FEET;
THENCE S 41°48'13" W A DISTANCE OF 17.26 FEET;
THENCE S 68°59'38" W A DISTANCE OF 26.41 FEET;
THENCE N 88°31'10" W A DISTANCE OF 100.90 FEET;

THENCE N 89°01'25" W A DISTANCE OF 112.75 FEET;
THENCE S 89°07'39" W A DISTANCE OF 122.98 FEET;
THENCE S 89°46'43" W A DISTANCE OF 70.59 FEET;
THENCE S 89°13'58" W A DISTANCE OF 159.94 FEET;
THENCE N 89°37'16" W A DISTANCE OF 240.87 FEET;
THENCE S 88°40'02" W A DISTANCE OF 166.89 FEET;
THENCE S 89°59'32" W A DISTANCE OF 184.11 FEET;
THENCE S 89°23'49" W A DISTANCE OF 189.16 FEET;
THENCE N 89°44'21" W A DISTANCE OF 93.45 FEET;
THENCE S 89°39'15" W A DISTANCE OF 196.80 FEET;
THENCE S 89°28'24" W A DISTANCE OF 67.13 FEET;
THENCE S 41°06'47" W A DISTANCE OF 26.45 FEET;
THENCE S 00°55'43" W A DISTANCE OF 118.75 FEET;
THENCE S 01°43'01" W A DISTANCE OF 105.72 FEET;
THENCE S 03°18'52" W A DISTANCE OF 165.99 FEET;
THENCE S 02°11'04" W A DISTANCE OF 115.64 FEET;
THENCE S 01°43'01" W A DISTANCE OF 145.69 FEET;
THENCE S 07°24'50" W A DISTANCE OF 107.70 FEET;
THENCE S 28°32'55" W A DISTANCE OF 31.17 FEET;
THENCE S 51°24'00" W A DISTANCE OF 42.37 FEET;
THENCE S 09°11'15" W A DISTANCE OF 47.74 FEET;
THENCE S 02°14'28" W A DISTANCE OF 98.75 FEET;
THENCE S 04°43'32" W A DISTANCE OF 166.81 FEET;
THENCE S 00°25'06" W A DISTANCE OF 82.79 FEET;
THENCE S 02°42'44" W A DISTANCE OF 146.20 FEET;
THENCE S 05°15'28" W A DISTANCE OF 113.45 FEET;
THENCE S 03°54'14" W A DISTANCE OF 156.22 FEET;
THENCE S 05°06'20" W A DISTANCE OF 97.63 FEET;
THENCE S 25°26'40" W A DISTANCE OF 45.35 FEET;
THENCE S 55°43'03" W A DISTANCE OF 34.61 FEET;
THENCE S 86°14'12" W A DISTANCE OF 69.57 FEET;
THENCE N 88°41'18" W A DISTANCE OF 115.92 FEET;
THENCE S 88°18'29" W A DISTANCE OF 131.51 FEET;
THENCE N 89°11'14" W A DISTANCE OF 99.12 FEET;
THENCE N 88°32'55" W A DISTANCE OF 119.46 FEET;
THENCE N 85°56'30" W A DISTANCE OF 95.13 FEET;
THENCE N 88°47'07" W A DISTANCE OF 137.39 FEET;
THENCE N 89°02'52" W A DISTANCE OF 125.10 FEET;
THENCE N 74°39'30" W A DISTANCE OF 8.34 FEET;
THENCE S 89°55'45" W A DISTANCE OF 99.35 FEET;
THENCE N 89°16'01" W A DISTANCE OF 75.76 FEET;
THENCE N 88°36'52" W A DISTANCE OF 98.69 FEET;
THENCE S 88°23'02" W A DISTANCE OF 25.59 FEET;
THENCE N 00°15'51" W A DISTANCE OF 298.90 FEET;
THENCE N 44°44'09" E A DISTANCE OF 35.36 FEET;
THENCE N 00°15'51" W A DISTANCE OF 80.00 FEET;
THENCE N 45°16'37" W A DISTANCE OF 52.32 FEET TO AN INTERSECTION WITH A LINE 159.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 22;
THENCE ALONG SAID PARALLEL LINE N 00°16'37" W A DISTANCE OF 1092.22 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 54039.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°51'01" AN ARC DISTANCE OF 801.91 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 54961.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°51'46" AN ARC DISTANCE OF 827.61 FEET TO AN INTERSECTION WITH A LINE 147.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 22;

THENCE ALONG SAID PARALLEL LINE N 00°15'52" W A DISTANCE OF 1011.84 FEET TO THE BEGINNING OF A CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 37941.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°08'41" AN ARC DISTANCE OF 758.09 FEET;
THENCE N 00°52'50" E A DISTANCE OF 246.58 FEET;
THENCE N 00°15'52" W A DISTANCE OF 583.85 FEET;
THENCE N 45°56'24" E A DISTANCE OF 152.35 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED.

CONTAINING A TOTAL AREA OF APPROXIMATELY 540.77 ACRES.
REF. ABB DWG #12102-SD2 (SRA TRACT 2-REV.DOC)

EXHIBIT "C"
LOCATION MAP

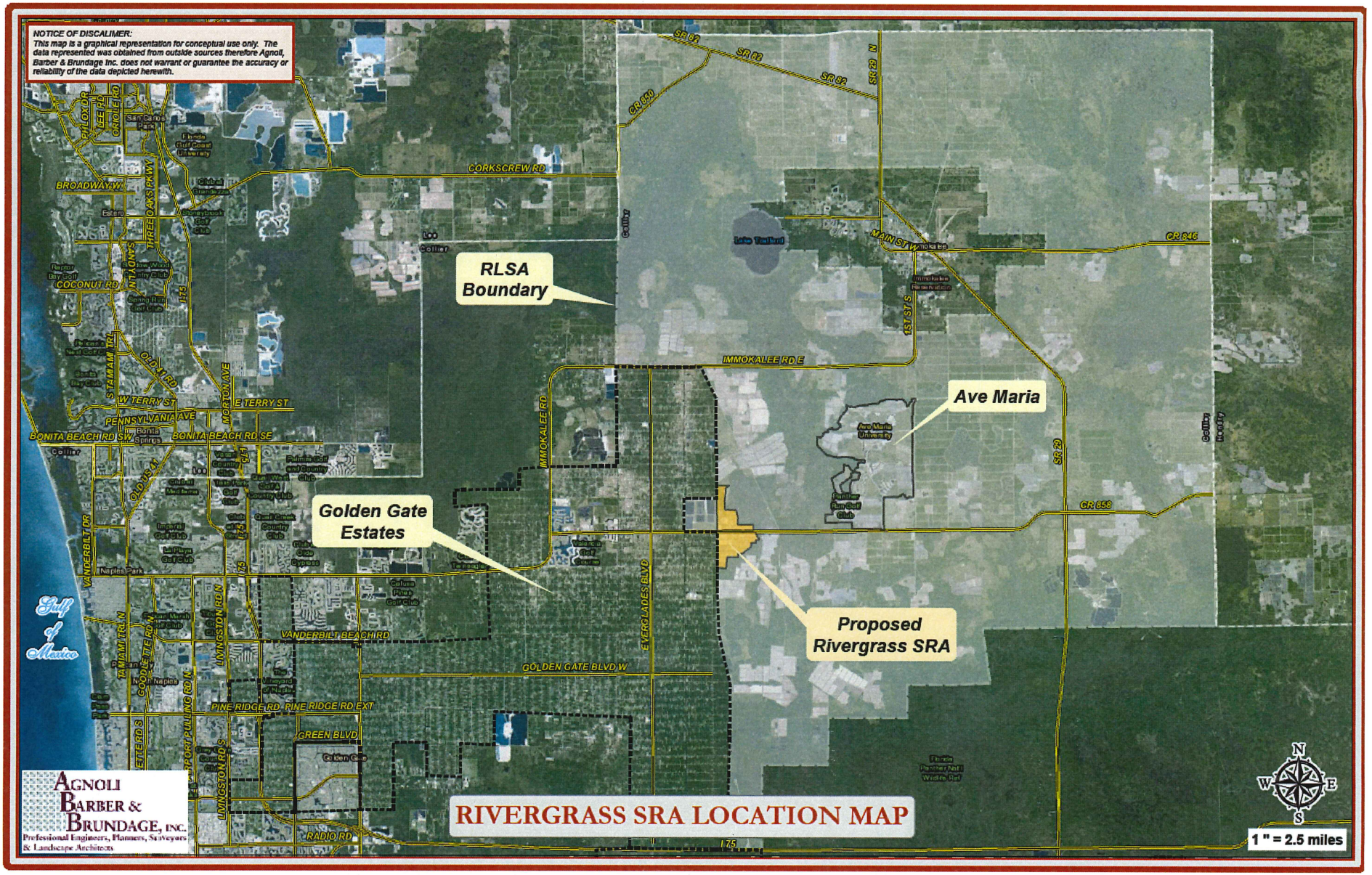

EXHIBIT D-1

COLLIER COUNTY GOVERNMENT
GROWTH MANAGEMENT DEPARTMENT
www.colliergov.net

2800 NORTH HORSESHOE DRIVE
NAPLES, FLORIDA 34104
(239) 252-2400 FAX: (239) 252-6358

COVENANT OF UNIFIED CONTROL

The undersigned do hereby swear or affirm that we are the fee simple titleholders and owners of record of property commonly known as CDC Land Investments, LLC
2550 Goodlette Road North, Suite 100, Naples, FL 34103
(Street address and City, State and Zip Code)

and legally described in *Attachment A* attached hereto.

The property described herein is the subject of an application for Rivergrass SRA. We hearby designate Patrick Utter, legal representative thereof, as the legal representatives of the property and as such, these individuals are authorized to legally bind all owners of the property in the course of seeking the necessary approvals to develop. This authority includes, but is not limited to, the hiring and authorization of agents to assist in the preparation of applications, plans, surveys, and studies necessary to obtain zoning approval on the site. These representatives will remain the only entity to authorize development activity on the property until such time as a new or amended covenant of unified control is delivered to Collier County.

The undersigned recognize the following and will be guided accordingly in the pursuit of development of the project:

1. The property will be developed and used in conformity with the approved master plan including all conditions placed on the development and all commitments agreed to by the applicant in connection with the SRA document.
2. The legal representative identified herein is responsible for compliance with all terms, conditions, safeguards, and stipulations made at the time of approval of the master plan, even if the property is subsequently sold in whole or in part, unless and until a new or amended covenant of unified control is delivered to and recorded by Collier County.
3. A departure from the provisions of the approved plans or a failure to comply with any requirements, conditions, or safeguards provided for in the planned unit development process will constitute a violation of the Land Development Code.
4. All terms and conditions of the Rivergrass SRA approval will be incorporated into covenants and restrictions which run with the land so as to provide notice to subsequent owners that all development activity within the Rivergrass SRA development must be consistent with those terms and conditions.
5. So long as this covenant is in force, Collier County can, upon the discovery of noncompliance with the terms, safeguards, and conditions of the Rivergrass SRA development, seek equitable relief as necessary to compel compliance. The County will not issue permits, certificates, or licenses to occupy or use any part of the planned unit development and the County may stop ongoing construction activity until the project is brought into compliance with all terms, conditions and safeguards of the Rivergrass SRA development.

Patrick L. Utter

Owner

Printed Name

Owner

Patrick L. Utter

Printed Name

STATE OF FLORIDA)
COUNTY OF COLLIER)

Sworn to (or affirmed) and subscribed before me this 16th day of August, 2019 by Patrick L. Utter who is personally known to me or has produced _____ as identification.

Valerie L. Pike
Notary Public - State of Florida
Commission # GG 22100
Expires 08/17/2020

Notary Public
(Name typed, printed or stamped)

AGNOLI
BARBER &
BRUNDAGE, INC.
Professional Engineers, Planners & Land Surveyors
Collier County: 7400 Tamiami Trail N. - Naples, FL - 34108 Ph.: (239) 597-3111 - Fax: (239) 566-2203

REF. ABB DWG #12102-SD1 (SRA TRACT 1-REV.DOC)

ATTACHMENT A

LEGAL DESCRIPTION OF RIVERGRASS SRA, TRACT 1

ALL THAT PART SECTIONS 10, 14 AND 15, TOWNSHIP 48 SOUTH, RANGE 28 EAST, COLLIER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE AFORESAID SECTION 15;
THENCE N 01°27'11" W ALONG THE WEST LINE OF SAID SECTION 15 A DISTANCE OF 150.03 FEET TO AN INTERSECTION WITH A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 15;
THENCE ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 267.37 FEET TO THE POINT OF BEGINNING OF THE TRACT HEREIN BEING DESCRIBED, SAID POINT OF BEGINNING OF TRACT 1 HAVING A NORTHING COORDINATE VALUE OF 712883.76 AND AN EASTING COORDINATE VALUE OF 488292.66 BASED ON THE FLORIDA STATE PLANE EAST ZONE, 83/90 ADJUSTMENT;

THENCE LEAVING SAID PARALLEL LINE N 46°27'11" W A DISTANCE OF 168.59 FEET;
THENCE N 01°15'52" W A DISTANCE OF 98.06 FEET;
THENCE N 05°34'42" E A DISTANCE OF 100.72 FEET;
THENCE N 01°15'52" W A DISTANCE OF 282.14 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHEASTERLY WHOSE RADIUS POINT BEARS N 06°28'49" W AND HAVING A RADIUS OF 11.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 95°12'57" AN ARC DISTANCE OF 18.28 FEET;
THENCE N 01°15'52" W A DISTANCE OF 210.74 FEET;
THENCE N 43°32'49" E A DISTANCE OF 48.71 FEET;
THENCE N 01°27'11" W A DISTANCE OF 80.00 FEET;
THENCE N 46°27'11" W A DISTANCE OF 64.93 FEET;
THENCE N 01°15'52" W A DISTANCE OF 338.97 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 25047.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°43'58" AN ARC DISTANCE OF 757.50 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 29183.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°32'39" AN ARC DISTANCE OF 786.46 FEET TO AN INTERSECTION WITH A LINE 120.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 15;
THENCE ALONG SAID PARALLEL LINE N 01°27'11" W A DISTANCE OF 1862.06 FEET TO THE BEGINNING OF A CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 42953.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°01'22" AN ARC DISTANCE OF 766.67 FEET TO AN INTERSECTION WITH A LINE 123.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 10;
THENCE ALONG SAID PARALLEL LINE N 00°25'50" W A DISTANCE OF 144.76 FEET;
THENCE LEAVING SAID PARALLEL LINE N 06°24'31" E A DISTANCE OF 100.77 FEET;
THENCE N 00°25'50" W A DISTANCE OF 370.50 FEET;
THENCE N 44°34'10" E A DISTANCE OF 70.20 FEET

THENCE N 00°25'50" W A DISTANCE OF 80.00 FEET;
THENCE S 89°34'10" W A DISTANCE OF 12.00 FEET;
THENCE N 45°25'50" W A DISTANCE OF 70.20 FEET TO AN INTERSECTION WITH A LINE 123.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF AFORESAID SECTION 10;
THENCE ALONG SAID PARALLEL LINE N 00°25'50" W A DISTANCE OF 1328.34 FEET;
THENCE LEAVING SAID PARALLEL LINE N 51°59'09" E A DISTANCE OF 1784.63 FEET;
THENCE S 43°35'16" E A DISTANCE OF 112.09 FEET;
THENCE S 54°40'31" E A DISTANCE OF 129.64 FEET;
THENCE S 24°40'19" E A DISTANCE OF 433.97 FEET;
THENCE S 25°23'25" E A DISTANCE OF 231.30 FEET;
THENCE S 27°32'27" E A DISTANCE OF 92.23 FEET;
THENCE S 27°32'27" E A DISTANCE OF 71.38 FEET;
THENCE S 21°54'03" E A DISTANCE OF 117.24 FEET;
THENCE S 24°19'16" E A DISTANCE OF 174.92 FEET;
THENCE S 12°23'41" W A DISTANCE OF 2.34 FEET;
THENCE S 32°09'27" W A DISTANCE OF 339.25 FEET;
THENCE S 52°01'13" W A DISTANCE OF 100.40 FEET;
THENCE S 60°42'36" W A DISTANCE OF 566.48 FEET;
THENCE S 22°58'58" W A DISTANCE OF 25.53 FEET;
THENCE S 17°42'38" E A DISTANCE OF 185.76 FEET;
THENCE S 08°50'57" E A DISTANCE OF 84.78 FEET;
THENCE S 00°37'18" E A DISTANCE OF 111.35 FEET;
THENCE S 06°25'55" W A DISTANCE OF 579.63 FEET;
THENCE S 04°51'04" W A DISTANCE OF 1008.13 FEET;
THENCE S 04°03'32" W A DISTANCE OF 227.10 FEET;
THENCE S 07°36'03" E A DISTANCE OF 307.77 FEET;
THENCE S 02°55'35" E A DISTANCE OF 450.55 FEET;
THENCE S 02°50'32" E A DISTANCE OF 532.54 FEET;
THENCE S 87°41'14" E A DISTANCE OF 100.82 FEET;
THENCE S 89°24'35" E A DISTANCE OF 37.91 FEET;
THENCE S 89°24'02" E A DISTANCE OF 81.30 FEET;
THENCE N 84°39'21" E A DISTANCE OF 75.01 FEET;
THENCE N 88°33'44" E A DISTANCE OF 59.98 FEET;
THENCE N 87°35'40" E A DISTANCE OF 139.27 FEET;
THENCE S 84°42'44" E A DISTANCE OF 130.07 FEET;
THENCE S 89°32'11" E A DISTANCE OF 147.65 FEET;
THENCE S 89°52'52" E A DISTANCE OF 156.15 FEET;
THENCE S 88°57'20" E A DISTANCE OF 188.96 FEET;
THENCE S 89°41'06" E A DISTANCE OF 131.58 FEET;
THENCE N 89°41'36" E A DISTANCE OF 177.16 FEET;
THENCE S 89°26'36" E A DISTANCE OF 147.86 FEET;
THENCE S 84°43'55" E A DISTANCE OF 101.39 FEET;
THENCE S 41°55'22" E A DISTANCE OF 47.92 FEET;
THENCE S 19°09'53" E A DISTANCE OF 111.96 FEET;
THENCE S 16°32'54" E A DISTANCE OF 153.04 FEET;
THENCE S 15°10'48" E A DISTANCE OF 136.90 FEET;
THENCE S 16°15'30" E A DISTANCE OF 151.98 FEET;
THENCE S 20°19'26" E A DISTANCE OF 103.56 FEET;
THENCE S 15°22'59" E A DISTANCE OF 129.81 FEET;
THENCE S 14°53'35" E A DISTANCE OF 209.16 FEET;
THENCE S 15°10'56" E A DISTANCE OF 129.48 FEET;
THENCE S 12°02'51" E A DISTANCE OF 126.36 FEET;
THENCE S 02°40'13" W A DISTANCE OF 140.11 FEET;
THENCE S 01°53'41" W A DISTANCE OF 155.98 FEET;
THENCE S 01°52'27" W A DISTANCE OF 127.99 FEET;
THENCE S 02°03'44" W A DISTANCE OF 131.45 FEET;

THENCE S 01°42'03" W A DISTANCE OF 100.08 FEET;
THENCE S 02°55'04" W A DISTANCE OF 105.23 FEET;
THENCE S 02°38'14" W A DISTANCE OF 339.69 FEET;
THENCE S 07°27'21" E A DISTANCE OF 62.88 FEET;
THENCE S 88°18'24" E A DISTANCE OF 115.67 FEET;
THENCE N 89°56'54" E A DISTANCE OF 233.19 FEET;
THENCE N 88°55'25" E A DISTANCE OF 127.66 FEET;
THENCE N 89°10'46" E A DISTANCE OF 196.35 FEET;
THENCE N 89°57'03" E A DISTANCE OF 161.31 FEET;
THENCE N 88°48'44" E A DISTANCE OF 199.43 FEET;
THENCE N 89°29'45" E A DISTANCE OF 274.04 FEET;
THENCE N 89°15'30" E A DISTANCE OF 181.32 FEET;
THENCE N 88°24'35" E A DISTANCE OF 99.68 FEET;
THENCE N 89°41'41" E A DISTANCE OF 88.89 FEET;
THENCE N 88°56'20" E A DISTANCE OF 108.92 FEET;
THENCE N 89°19'04" E A DISTANCE OF 161.23 FEET;
THENCE S 88°39'37" E A DISTANCE OF 106.23 FEET;
THENCE S 89°55'34" E A DISTANCE OF 148.00 FEET;
THENCE N 88°27'14" E A DISTANCE OF 147.30 FEET;
THENCE S 87°18'29" E A DISTANCE OF 135.47 FEET;
THENCE S 26°41'05" E A DISTANCE OF 76.71 FEET;
THENCE S 01°02'04" E A DISTANCE OF 108.01 FEET;
THENCE S 01°46'53" W A DISTANCE OF 128.59 FEET;
THENCE S 01°59'21" W A DISTANCE OF 164.22 FEET;
THENCE S 01°53'56" W A DISTANCE OF 115.91 FEET;
THENCE S 01°58'46" W A DISTANCE OF 159.80 FEET;
THENCE S 00°08'30" W A DISTANCE OF 113.36 FEET;
THENCE S 03°38'14" W A DISTANCE OF 130.20 FEET TO AN INTERSECTION WITH A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF THE AFORESAID SECTION 14;
THENCE ALONG SAID PARALLEL LINE S 89°44'31" W A DISTANCE OF 427.12 FEET;
THENCE S 89°44'43" W ALONG A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 15 A DISTANCE OF 2667.40 FEET;
THENCE S 89°44'36" W ALONG A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 15 A DISTANCE OF 2406.94 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED.

CONTAINING A TOTAL AREA OF APPROXIMATELY 458.01 ACRES.
REF. ABB DWG #12102-SD1 (SRA TRACT 1-REV.DOC)

AGNOLI
BARBER &
BRUNDAGE, INC.
Professional Engineers, Planners & Land Surveyors
Collier County: 7400 Tamiami Trail N. - Naples, FL - 34108 Ph.: (239) 597-3111 - Fax: (239) 566-2203

REF. ABB DWG #12102-SD2 (SRA TRACT 2-REV.DOC)

ATTACHMENT A

LEGAL DESCRIPTION OF RIVERGRASS SRA, TRACT 2

ALL THAT PART SECTIONS 22, 23 AND 27, TOWNSHIP 48 SOUTH, RANGE 28 EAST, COLLIER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF THE AFORESAID SECTION 22;
THENCE S 00°15'52" E ALONG THE WEST LINE OF SAID SECTION 22 A DISTANCE OF 50.00 FEET TO AN INTERSECTION WITH A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 22;
THENCE ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 269.97 FEET TO THE POINT OF BEGINNING OF THE TRACT HEREIN BEING DESCRIBED, SAID POINT OF BEGINNING OF TRACT 2 HAVING A NORTHING COORDINATE VALUE OF 712683.79 AND AN EASTING COORDINATE VALUE OF 488299.30 BASED ON THE FLORIDA STATE PLANE EAST ZONE, 83/90 ADJUSTMENT;

THENCE CONTINUING ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 2401.19 FEET;
THENCE N 89°44'43" E ALONG A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 22 A DISTANCE OF 2667.40 FEET;
THENCE N 89°44'31" E ALONG A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF NORTHWEST QUARTER OF AFORESAID SECTION 23 A DISTANCE OF 906.16 FEET;
THENCE LEAVING SAID PARALLEL LINE S 00°15'17" E A DISTANCE OF 240.22 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 1260.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 11°31'33" AN ARC DISTANCE OF 253.47 FEET;
THENCE S 88°46'59" E A DISTANCE OF 91.02 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 112.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 64°09'25" AN ARC DISTANCE OF 125.41 FEET TO THE BEGINNING OF A COMPOUND CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 452.50 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 28°22'04" AN ARC DISTANCE OF 224.04 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE NORTHEASTERLY AND HAVING A RADIUS OF 145.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 86°32'48" AN ARC DISTANCE OF 219.03 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 145.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 64°54'46" AN ARC DISTANCE OF 164.28 FEET;
THENCE S 26°22'26" W A DISTANCE OF 78.76 FEET;
THENCE S 23°34'22" W A DISTANCE OF 86.60 FEET;
THENCE S 29°16'43" W A DISTANCE OF 71.59 FEET;
THENCE S 89°10'15" W A DISTANCE OF 48.17 FEET;
THENCE N 84°13'50" W A DISTANCE OF 68.87 FEET;
THENCE N 81°39'21" W A DISTANCE OF 58.00 FEET;
THENCE S 88°31'22" W A DISTANCE OF 73.27 FEET;

THENCE S 89°52'05" W A DISTANCE OF 74.62 FEET;
THENCE N 86°38'30" W A DISTANCE OF 59.97 FEET;
THENCE S 02°15'48" W A DISTANCE OF 96.14 FEET;
THENCE S 04°50'51" W A DISTANCE OF 102.27 FEET;
THENCE S 02°25'20" W A DISTANCE OF 149.64 FEET;
THENCE S 07°13'14" W A DISTANCE OF 81.69 FEET;
THENCE S 48°52'58" W A DISTANCE OF 55.18 FEET;
THENCE S 71°37'57" W A DISTANCE OF 40.89 FEET;
THENCE N 88°32'46" W A DISTANCE OF 141.83 FEET;
THENCE S 88°29'37" W A DISTANCE OF 97.42 FEET;
THENCE N 89°39'35" W A DISTANCE OF 135.85 FEET;
THENCE N 89°08'23" W A DISTANCE OF 108.95 FEET;
THENCE N 87°54'42" W A DISTANCE OF 137.83 FEET;
THENCE S 40°55'18" W A DISTANCE OF 22.02 FEET;
THENCE S 06°06'28" W A DISTANCE OF 77.11 FEET;
THENCE S 07°11'52" W A DISTANCE OF 132.49 FEET;
THENCE S 07°08'24" W A DISTANCE OF 152.64 FEET;
THENCE S 04°07'46" W A DISTANCE OF 121.96 FEET;
THENCE S 07°31'04" W A DISTANCE OF 124.64 FEET;
THENCE S 08°20'22" W A DISTANCE OF 83.85 FEET;
THENCE S 25°49'33" W A DISTANCE OF 37.83 FEET;
THENCE S 47°59'25" W A DISTANCE OF 51.41 FEET;
THENCE S 51°45'07" W A DISTANCE OF 74.36 FEET;
THENCE S 51°47'20" W A DISTANCE OF 104.73 FEET;
THENCE S 51°58'26" W A DISTANCE OF 128.55 FEET;
THENCE S 45°42'58" W A DISTANCE OF 56.22 FEET;
THENCE S 52°27'49" W A DISTANCE OF 82.31 FEET;
THENCE S 49°59'31" W A DISTANCE OF 88.78 FEET;
THENCE S 51°51'20" W A DISTANCE OF 94.46 FEET;
THENCE S 50°46'19" W A DISTANCE OF 102.93 FEET;
THENCE S 51°15'09" W A DISTANCE OF 83.29 FEET;
THENCE S 50°51'46" W A DISTANCE OF 109.82 FEET;
THENCE S 49°13'58" W A DISTANCE OF 79.67 FEET;
THENCE S 51°18'11" W A DISTANCE OF 172.20 FEET;
THENCE S 51°10'53" W A DISTANCE OF 200.05 FEET;
THENCE S 52°46'54" W A DISTANCE OF 30.58 FEET;
THENCE S 49°14'37" W A DISTANCE OF 104.15 FEET;
THENCE S 52°46'51" W A DISTANCE OF 96.07 FEET;
THENCE S 51°43'33" W A DISTANCE OF 147.84 FEET;
THENCE S 48°39'56" W A DISTANCE OF 36.37 FEET;
THENCE N 84°45'00" W A DISTANCE OF 133.18 FEET;
THENCE S 89°13'29" W A DISTANCE OF 121.46 FEET;
THENCE S 88°20'38" W A DISTANCE OF 118.91 FEET;
THENCE N 88°43'01" W A DISTANCE OF 98.43 FEET;
THENCE N 88°59'13" W A DISTANCE OF 77.80 FEET;
THENCE S 80°31'23" W A DISTANCE OF 13.27 FEET;
THENCE S 48°19'20" W A DISTANCE OF 22.69 FEET;
THENCE S 00°57'07" W A DISTANCE OF 34.49 FEET;
THENCE S 00°45'26" E A DISTANCE OF 119.90 FEET;
THENCE S 00°15'35" W A DISTANCE OF 103.01 FEET;
THENCE S 01°00'53" E A DISTANCE OF 99.24 FEET;
THENCE S 01°53'12" W A DISTANCE OF 72.46 FEET;
THENCE S 04°23'00" W A DISTANCE OF 52.96 FEET;
THENCE S 41°48'13" W A DISTANCE OF 17.26 FEET;
THENCE S 68°59'38" W A DISTANCE OF 26.41 FEET;
THENCE N 88°31'10" W A DISTANCE OF 100.90 FEET;

THENCE N 89°01'25" W A DISTANCE OF 112.75 FEET;
THENCE S 89°07'39" W A DISTANCE OF 122.98 FEET;
THENCE S 89°46'43" W A DISTANCE OF 70.59 FEET;
THENCE S 89°13'58" W A DISTANCE OF 159.94 FEET;
THENCE N 89°37'16" W A DISTANCE OF 240.87 FEET;
THENCE S 88°40'02" W A DISTANCE OF 166.89 FEET;
THENCE S 89°59'32" W A DISTANCE OF 184.11 FEET;
THENCE S 89°23'49" W A DISTANCE OF 189.16 FEET;
THENCE N 89°44'21" W A DISTANCE OF 93.45 FEET;
THENCE S 89°39'15" W A DISTANCE OF 196.80 FEET;
THENCE S 89°28'24" W A DISTANCE OF 67.13 FEET;
THENCE S 41°06'47" W A DISTANCE OF 26.45 FEET;
THENCE S 00°55'43" W A DISTANCE OF 118.75 FEET;
THENCE S 01°43'01" W A DISTANCE OF 105.72 FEET;
THENCE S 03°18'52" W A DISTANCE OF 165.99 FEET;
THENCE S 02°11'04" W A DISTANCE OF 115.64 FEET;
THENCE S 01°43'01" W A DISTANCE OF 145.69 FEET;
THENCE S 07°24'50" W A DISTANCE OF 107.70 FEET;
THENCE S 28°32'55" W A DISTANCE OF 31.17 FEET;
THENCE S 51°24'00" W A DISTANCE OF 42.37 FEET;
THENCE S 09°11'15" W A DISTANCE OF 47.74 FEET;
THENCE S 02°14'28" W A DISTANCE OF 98.75 FEET;
THENCE S 04°43'32" W A DISTANCE OF 166.81 FEET;
THENCE S 00°25'06" W A DISTANCE OF 82.79 FEET;
THENCE S 02°42'44" W A DISTANCE OF 146.20 FEET;
THENCE S 05°15'28" W A DISTANCE OF 113.45 FEET;
THENCE S 03°54'14" W A DISTANCE OF 156.22 FEET;
THENCE S 05°06'20" W A DISTANCE OF 97.63 FEET;
THENCE S 25°26'40" W A DISTANCE OF 45.35 FEET;
THENCE S 55°43'03" W A DISTANCE OF 34.61 FEET;
THENCE S 86°14'12" W A DISTANCE OF 69.57 FEET;
THENCE N 88°41'18" W A DISTANCE OF 115.92 FEET;
THENCE S 88°18'29" W A DISTANCE OF 131.51 FEET;
THENCE N 89°11'14" W A DISTANCE OF 99.12 FEET;
THENCE N 88°32'55" W A DISTANCE OF 119.46 FEET;
THENCE N 85°56'30" W A DISTANCE OF 95.13 FEET;
THENCE N 88°47'07" W A DISTANCE OF 137.39 FEET;
THENCE N 89°02'52" W A DISTANCE OF 125.10 FEET;
THENCE N 74°39'30" W A DISTANCE OF 8.34 FEET;
THENCE S 89°55'45" W A DISTANCE OF 99.35 FEET;
THENCE N 89°16'01" W A DISTANCE OF 75.76 FEET;
THENCE N 88°36'52" W A DISTANCE OF 98.69 FEET;
THENCE S 88°23'02" W A DISTANCE OF 25.59 FEET;
THENCE N 00°15'51" W A DISTANCE OF 298.90 FEET;
THENCE N 44°44'09" E A DISTANCE OF 35.36 FEET;
THENCE N 00°15'51" W A DISTANCE OF 80.00 FEET;
THENCE N 45°16'37" W A DISTANCE OF 52.32 FEET TO AN INTERSECTION WITH A LINE 159.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 22;
THENCE ALONG SAID PARALLEL LINE N 00°16'37" W A DISTANCE OF 1092.22 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 54039.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°51'01" AN ARC DISTANCE OF 801.91 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 54961.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°51'46" AN ARC DISTANCE OF 827.61 FEET TO AN INTERSECTION WITH A LINE 147.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 22;

THENCE ALONG SAID PARALLEL LINE N 00°15'52" W A DISTANCE OF 1011.84 FEET TO THE BEGINNING OF A CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 37941.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°08'41" AN ARC DISTANCE OF 758.09 FEET;
THENCE N 00°52'50" E A DISTANCE OF 246.58 FEET;
THENCE N 00°15'52" W A DISTANCE OF 583.85 FEET;
THENCE N 45°56'24" E A DISTANCE OF 152.35 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED.

CONTAINING A TOTAL AREA OF APPROXIMATELY 540.77 ACRES.
REF. ABB DWG #12102-SD2 (SRA TRACT 2-REV.DOC)

EXHIBIT D-2

COLLIER COUNTY GOVERNMENT
GROWTH MANAGEMENT DEPARTMENT
www.colliergov.net

2800 NORTH HORSESHOE DRIVE
NAPLES, FLORIDA 34104
(239) 252-2400 FAX: (239) 252-6358

COVENANT OF UNIFIED CONTROL

The undersigned do hereby swear or affirm that we are the fee simple titleholders and owners of record of property commonly known as Collier Land Holdings, LTD.
2550 Goodlette Road North, Suite 100, Naples, FL 34103
(Street address and City, State and Zip Code)

and legally described in *Attachment A* attached hereto.

The property described herein is the subject of an application for Rivergrass SRA. We hearby designate Patrick Utter, legal representative thereof, as the legal representatives of the property and as such, these individuals are authorized to legally bind all owners of the property in the course of seeking the necessary approvals to develop. This authority includes, but is not limited to, the hiring and authorization of agents to assist in the preparation of applications, plans, surveys, and studies necessary to obtain zoning approval on the site. These representatives will remain the only entity to authorize development activity on the property until such time as a new or amended covenant of unified control is delivered to Collier County.

The undersigned recognize the following and will be guided accordingly in the pursuit of development of the project:

1. The property will be developed and used in conformity with the approved master plan including all conditions placed on the development and all commitments agreed to by the applicant in connection with the SRA document.
2. The legal representative identified herein is responsible for compliance with all terms, conditions, safeguards, and stipulations made at the time of approval of the master plan, even if the property is subsequently sold in whole or in part, unless and until a new or amended covenant of unified control is delivered to and recorded by Collier County.
3. A departure from the provisions of the approved plans or a failure to comply with any requirements, conditions, or safeguards provided for in the planned unit development process will constitute a violation of the Land Development Code.
4. All terms and conditions of the Rivergrass SRA approval will be incorporated into covenants and restrictions which run with the land so as to provide notice to subsequent owners that all development activity within the Rivergrass SRA development must be consistent with those terms and conditions.
5. So long as this covenant is in force, Collier County can, upon the discovery of noncompliance with the terms, safeguards, and conditions of the Rivergrass SRA development, seek equitable relief as necessary to compel compliance. The County will not issue permits, certificates, or licenses to occupy or use any part of the planned unit development and the County may stop ongoing construction activity until the project is brought into compliance with all terms, conditions and safeguards of the Rivergrass SRA development.

Owner

Printed Name

Patrick L. Utter

Owner

Patrick L. Utter

Printed Name

STATE OF FLORIDA)
COUNTY OF COLLIER)

Sworn to (or affirmed) and subscribed before me this 16th day of August, 2019 by Patrick L. Utter who is personally known to me or has produced _____ as identification.

Valerie L. Pike
Notary Public - State of Florida
Commission # GG 22100
Expires 08/17/2020

Notary Public
(Name typed, printed or stamped)

AGNOLI
BARBER &
BRUNDAGE, INC.
Professional Engineers, Planners & Land Surveyors
Collier County: 7400 Tamiami Trail N. - Naples, FL - 34108 Ph.: (239) 597-3111 - Fax: (239) 566-2203

REF. ABB DWG #12102-SD1 (SRA TRACT 1-REV.DOC)

ATTACHMENT A

LEGAL DESCRIPTION OF RIVERGRASS SRA, TRACT 1

ALL THAT PART SECTIONS 10, 14 AND 15, TOWNSHIP 48 SOUTH, RANGE 28 EAST, COLLIER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE AFORESAID SECTION 15;
THENCE N 01°27'11" W ALONG THE WEST LINE OF SAID SECTION 15 A DISTANCE OF 150.03 FEET TO AN INTERSECTION WITH A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 15;
THENCE ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 267.37 FEET TO THE POINT OF BEGINNING OF THE TRACT HEREIN BEING DESCRIBED, SAID POINT OF BEGINNING OF TRACT 1 HAVING A NORTHING COORDINATE VALUE OF 712883.76 AND AN EASTING COORDINATE VALUE OF 488292.66 BASED ON THE FLORIDA STATE PLANE EAST ZONE, 83/90 ADJUSTMENT;

THENCE LEAVING SAID PARALLEL LINE N 46°27'11" W A DISTANCE OF 168.59 FEET;
THENCE N 01°15'52" W A DISTANCE OF 98.06 FEET;
THENCE N 05°34'42" E A DISTANCE OF 100.72 FEET;
THENCE N 01°15'52" W A DISTANCE OF 282.14 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHEASTERLY WHOSE RADIUS POINT BEARS N 06°28'49" W AND HAVING A RADIUS OF 11.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 95°12'57" AN ARC DISTANCE OF 18.28 FEET;
THENCE N 01°15'52" W A DISTANCE OF 210.74 FEET;
THENCE N 43°32'49" E A DISTANCE OF 48.71 FEET;
THENCE N 01°27'11" W A DISTANCE OF 80.00 FEET;
THENCE N 46°27'11" W A DISTANCE OF 64.93 FEET;
THENCE N 01°15'52" W A DISTANCE OF 338.97 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 25047.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°43'58" AN ARC DISTANCE OF 757.50 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 29183.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°32'39" AN ARC DISTANCE OF 786.46 FEET TO AN INTERSECTION WITH A LINE 120.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 15;
THENCE ALONG SAID PARALLEL LINE N 01°27'11" W A DISTANCE OF 1862.06 FEET TO THE BEGINNING OF A CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 42953.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°01'22" AN ARC DISTANCE OF 766.67 FEET TO AN INTERSECTION WITH A LINE 123.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 10;
THENCE ALONG SAID PARALLEL LINE N 00°25'50" W A DISTANCE OF 144.76 FEET;
THENCE LEAVING SAID PARALLEL LINE N 06°24'31" E A DISTANCE OF 100.77 FEET;
THENCE N 00°25'50" W A DISTANCE OF 370.50 FEET;
THENCE N 44°34'10" E A DISTANCE OF 70.20 FEET

THENCE N 00°25'50" W A DISTANCE OF 80.00 FEET;
THENCE S 89°34'10" W A DISTANCE OF 12.00 FEET;
THENCE N 45°25'50" W A DISTANCE OF 70.20 FEET TO AN INTERSECTION WITH A LINE 123.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF AFORESAID SECTION 10;
THENCE ALONG SAID PARALLEL LINE N 00°25'50" W A DISTANCE OF 1328.34 FEET;
THENCE LEAVING SAID PARALLEL LINE N 51°59'09" E A DISTANCE OF 1784.63 FEET;
THENCE S 43°35'16" E A DISTANCE OF 112.09 FEET;
THENCE S 54°40'31" E A DISTANCE OF 129.64 FEET;
THENCE S 24°40'19" E A DISTANCE OF 433.97 FEET;
THENCE S 25°23'25" E A DISTANCE OF 231.30 FEET;
THENCE S 27°32'27" E A DISTANCE OF 92.23 FEET;
THENCE S 27°32'27" E A DISTANCE OF 71.38 FEET;
THENCE S 21°54'03" E A DISTANCE OF 117.24 FEET;
THENCE S 24°19'16" E A DISTANCE OF 174.92 FEET;
THENCE S 12°23'41" W A DISTANCE OF 2.34 FEET;
THENCE S 32°09'27" W A DISTANCE OF 339.25 FEET;
THENCE S 52°01'13" W A DISTANCE OF 100.40 FEET;
THENCE S 60°42'36" W A DISTANCE OF 566.48 FEET;
THENCE S 22°58'58" W A DISTANCE OF 25.53 FEET;
THENCE S 17°42'38" E A DISTANCE OF 185.76 FEET;
THENCE S 08°50'57" E A DISTANCE OF 84.78 FEET;
THENCE S 00°37'18" E A DISTANCE OF 111.35 FEET;
THENCE S 06°25'55" W A DISTANCE OF 579.63 FEET;
THENCE S 04°51'04" W A DISTANCE OF 1008.13 FEET;
THENCE S 04°03'32" W A DISTANCE OF 227.10 FEET;
THENCE S 07°36'03" E A DISTANCE OF 307.77 FEET;
THENCE S 02°55'35" E A DISTANCE OF 450.55 FEET;
THENCE S 02°50'32" E A DISTANCE OF 532.54 FEET;
THENCE S 87°41'14" E A DISTANCE OF 100.82 FEET;
THENCE S 89°24'35" E A DISTANCE OF 37.91 FEET;
THENCE S 89°24'02" E A DISTANCE OF 81.30 FEET;
THENCE N 84°39'21" E A DISTANCE OF 75.01 FEET;
THENCE N 88°33'44" E A DISTANCE OF 59.98 FEET;
THENCE N 87°35'40" E A DISTANCE OF 139.27 FEET;
THENCE S 84°42'44" E A DISTANCE OF 130.07 FEET;
THENCE S 89°32'11" E A DISTANCE OF 147.65 FEET;
THENCE S 89°52'52" E A DISTANCE OF 156.15 FEET;
THENCE S 88°57'20" E A DISTANCE OF 188.96 FEET;
THENCE S 89°41'06" E A DISTANCE OF 131.58 FEET;
THENCE N 89°41'36" E A DISTANCE OF 177.16 FEET;
THENCE S 89°26'36" E A DISTANCE OF 147.86 FEET;
THENCE S 84°43'55" E A DISTANCE OF 101.39 FEET;
THENCE S 41°55'22" E A DISTANCE OF 47.92 FEET;
THENCE S 19°09'53" E A DISTANCE OF 111.96 FEET;
THENCE S 16°32'54" E A DISTANCE OF 153.04 FEET;
THENCE S 15°10'48" E A DISTANCE OF 136.90 FEET;
THENCE S 16°15'30" E A DISTANCE OF 151.98 FEET;
THENCE S 20°19'26" E A DISTANCE OF 103.56 FEET;
THENCE S 15°22'59" E A DISTANCE OF 129.81 FEET;
THENCE S 14°53'35" E A DISTANCE OF 209.16 FEET;
THENCE S 15°10'56" E A DISTANCE OF 129.48 FEET;
THENCE S 12°02'51" E A DISTANCE OF 126.36 FEET;
THENCE S 02°40'13" W A DISTANCE OF 140.11 FEET;
THENCE S 01°53'41" W A DISTANCE OF 155.98 FEET;
THENCE S 01°52'27" W A DISTANCE OF 127.99 FEET;
THENCE S 02°03'44" W A DISTANCE OF 131.45 FEET;

THENCE S 01°42'03" W A DISTANCE OF 100.08 FEET;
THENCE S 02°55'04" W A DISTANCE OF 105.23 FEET;
THENCE S 02°38'14" W A DISTANCE OF 339.69 FEET;
THENCE S 07°27'21" E A DISTANCE OF 62.88 FEET;
THENCE S 88°18'24" E A DISTANCE OF 115.67 FEET;
THENCE N 89°56'54" E A DISTANCE OF 233.19 FEET;
THENCE N 88°55'25" E A DISTANCE OF 127.66 FEET;
THENCE N 89°10'46" E A DISTANCE OF 196.35 FEET;
THENCE N 89°57'03" E A DISTANCE OF 161.31 FEET;
THENCE N 88°48'44" E A DISTANCE OF 199.43 FEET;
THENCE N 89°29'45" E A DISTANCE OF 274.04 FEET;
THENCE N 89°15'30" E A DISTANCE OF 181.32 FEET;
THENCE N 88°24'35" E A DISTANCE OF 99.68 FEET;
THENCE N 89°41'41" E A DISTANCE OF 88.89 FEET;
THENCE N 88°56'20" E A DISTANCE OF 108.92 FEET;
THENCE N 89°19'04" E A DISTANCE OF 161.23 FEET;
THENCE S 88°39'37" E A DISTANCE OF 106.23 FEET;
THENCE S 89°55'34" E A DISTANCE OF 148.00 FEET;
THENCE N 88°27'14" E A DISTANCE OF 147.30 FEET;
THENCE S 87°18'29" E A DISTANCE OF 135.47 FEET;
THENCE S 26°41'05" E A DISTANCE OF 76.71 FEET;
THENCE S 01°02'04" E A DISTANCE OF 108.01 FEET;
THENCE S 01°46'53" W A DISTANCE OF 128.59 FEET;
THENCE S 01°59'21" W A DISTANCE OF 164.22 FEET;
THENCE S 01°53'56" W A DISTANCE OF 115.91 FEET;
THENCE S 01°58'46" W A DISTANCE OF 159.80 FEET;
THENCE S 00°08'30" W A DISTANCE OF 113.36 FEET;
THENCE S 03°38'14" W A DISTANCE OF 130.20 FEET TO AN INTERSECTION WITH A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF THE AFORESAID SECTION 14;
THENCE ALONG SAID PARALLEL LINE S 89°44'31" W A DISTANCE OF 427.12 FEET;
THENCE S 89°44'43" W ALONG A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 15 A DISTANCE OF 2667.40 FEET;
THENCE S 89°44'36" W ALONG A LINE 150.00 FEET NORTHERLY FROM AND PARALLEL WITH THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 15 A DISTANCE OF 2406.94 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED.

CONTAINING A TOTAL AREA OF APPROXIMATELY 458.01 ACRES.
REF. ABB DWG #12102-SD1 (SRA TRACT 1-REV.DOC)

AGNOLI
BARBER &
BRUNDAGE, INC.
Professional Engineers, Planners & Land Surveyors
Collier County: 7400 Tamiami Trail N. - Naples, FL - 34108 Ph.: (239) 597-3111 - Fax: (239) 566-2203

REF. ABB DWG #12102-SD2 (SRA TRACT 2-REV.DOC)

ATTACHMENT A

LEGAL DESCRIPTION OF RIVERGRASS SRA, TRACT 2

ALL THAT PART SECTIONS 22, 23 AND 27, TOWNSHIP 48 SOUTH, RANGE 28 EAST, COLLIER COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF THE AFORESAID SECTION 22;
THENCE S 00°15'52" E ALONG THE WEST LINE OF SAID SECTION 22 A DISTANCE OF 50.00 FEET TO AN INTERSECTION WITH A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 22;
THENCE ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 269.97 FEET TO THE POINT OF BEGINNING OF THE TRACT HEREIN BEING DESCRIBED, SAID POINT OF BEGINNING OF TRACT 2 HAVING A NORTHING COORDINATE VALUE OF 712683.79 AND AN EASTING COORDINATE VALUE OF 488299.30 BASED ON THE FLORIDA STATE PLANE EAST ZONE, 83/90 ADJUSTMENT;

THENCE CONTINUING ALONG SAID PARALLEL LINE N 89°44'36" E A DISTANCE OF 2401.19 FEET;
THENCE N 89°44'43" E ALONG A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 22 A DISTANCE OF 2667.40 FEET;
THENCE N 89°44'31" E ALONG A LINE 50.00 FEET SOUTHERLY FROM AND PARALLEL WITH THE NORTH LINE OF NORTHWEST QUARTER OF AFORESAID SECTION 23 A DISTANCE OF 906.16 FEET;
THENCE LEAVING SAID PARALLEL LINE S 00°15'17" E A DISTANCE OF 240.22 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 1260.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 11°31'33" AN ARC DISTANCE OF 253.47 FEET;
THENCE S 88°46'59" E A DISTANCE OF 91.02 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 112.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 64°09'25" AN ARC DISTANCE OF 125.41 FEET TO THE BEGINNING OF A COMPOUND CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 452.50 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 28°22'04" AN ARC DISTANCE OF 224.04 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE NORTHEASTERLY AND HAVING A RADIUS OF 145.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 86°32'48" AN ARC DISTANCE OF 219.03 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 145.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 64°54'46" AN ARC DISTANCE OF 164.28 FEET;
THENCE S 26°22'26" W A DISTANCE OF 78.76 FEET;
THENCE S 23°34'22" W A DISTANCE OF 86.60 FEET;
THENCE S 29°16'43" W A DISTANCE OF 71.59 FEET;
THENCE S 89°10'15" W A DISTANCE OF 48.17 FEET;
THENCE N 84°13'50" W A DISTANCE OF 68.87 FEET;
THENCE N 81°39'21" W A DISTANCE OF 58.00 FEET;
THENCE S 88°31'22" W A DISTANCE OF 73.27 FEET;

THENCE S 89°52'05" W A DISTANCE OF 74.62 FEET;
THENCE N 86°38'30" W A DISTANCE OF 59.97 FEET;
THENCE S 02°15'48" W A DISTANCE OF 96.14 FEET;
THENCE S 04°50'51" W A DISTANCE OF 102.27 FEET;
THENCE S 02°25'20" W A DISTANCE OF 149.64 FEET;
THENCE S 07°13'14" W A DISTANCE OF 81.69 FEET;
THENCE S 48°52'58" W A DISTANCE OF 55.18 FEET;
THENCE S 71°37'57" W A DISTANCE OF 40.89 FEET;
THENCE N 88°32'46" W A DISTANCE OF 141.83 FEET;
THENCE S 88°29'37" W A DISTANCE OF 97.42 FEET;
THENCE N 89°39'35" W A DISTANCE OF 135.85 FEET;
THENCE N 89°08'23" W A DISTANCE OF 108.95 FEET;
THENCE N 87°54'42" W A DISTANCE OF 137.83 FEET;
THENCE S 40°55'18" W A DISTANCE OF 22.02 FEET;
THENCE S 06°06'28" W A DISTANCE OF 77.11 FEET;
THENCE S 07°11'52" W A DISTANCE OF 132.49 FEET;
THENCE S 07°08'24" W A DISTANCE OF 152.64 FEET;
THENCE S 04°07'46" W A DISTANCE OF 121.96 FEET;
THENCE S 07°31'04" W A DISTANCE OF 124.64 FEET;
THENCE S 08°20'22" W A DISTANCE OF 83.85 FEET;
THENCE S 25°49'33" W A DISTANCE OF 37.83 FEET;
THENCE S 47°59'25" W A DISTANCE OF 51.41 FEET;
THENCE S 51°45'07" W A DISTANCE OF 74.36 FEET;
THENCE S 51°47'20" W A DISTANCE OF 104.73 FEET;
THENCE S 51°58'26" W A DISTANCE OF 128.55 FEET;
THENCE S 45°42'58" W A DISTANCE OF 56.22 FEET;
THENCE S 52°27'49" W A DISTANCE OF 82.31 FEET;
THENCE S 49°59'31" W A DISTANCE OF 88.78 FEET;
THENCE S 51°51'20" W A DISTANCE OF 94.46 FEET;
THENCE S 50°46'19" W A DISTANCE OF 102.93 FEET;
THENCE S 51°15'09" W A DISTANCE OF 83.29 FEET;
THENCE S 50°51'46" W A DISTANCE OF 109.82 FEET;
THENCE S 49°13'58" W A DISTANCE OF 79.67 FEET;
THENCE S 51°18'11" W A DISTANCE OF 172.20 FEET;
THENCE S 51°10'53" W A DISTANCE OF 200.05 FEET;
THENCE S 52°46'54" W A DISTANCE OF 30.58 FEET;
THENCE S 49°14'37" W A DISTANCE OF 104.15 FEET;
THENCE S 52°46'51" W A DISTANCE OF 96.07 FEET;
THENCE S 51°43'33" W A DISTANCE OF 147.84 FEET;
THENCE S 48°39'56" W A DISTANCE OF 36.37 FEET;
THENCE N 84°45'00" W A DISTANCE OF 133.18 FEET;
THENCE S 89°13'29" W A DISTANCE OF 121.46 FEET;
THENCE S 88°20'38" W A DISTANCE OF 118.91 FEET;
THENCE N 88°43'01" W A DISTANCE OF 98.43 FEET;
THENCE N 88°59'13" W A DISTANCE OF 77.80 FEET;
THENCE S 80°31'23" W A DISTANCE OF 13.27 FEET;
THENCE S 48°19'20" W A DISTANCE OF 22.69 FEET;
THENCE S 00°57'07" W A DISTANCE OF 34.49 FEET;
THENCE S 00°45'26" E A DISTANCE OF 119.90 FEET;
THENCE S 00°15'35" W A DISTANCE OF 103.01 FEET;
THENCE S 01°00'53" E A DISTANCE OF 99.24 FEET;
THENCE S 01°53'12" W A DISTANCE OF 72.46 FEET;
THENCE S 04°23'00" W A DISTANCE OF 52.96 FEET;
THENCE S 41°48'13" W A DISTANCE OF 17.26 FEET;
THENCE S 68°59'38" W A DISTANCE OF 26.41 FEET;
THENCE N 88°31'10" W A DISTANCE OF 100.90 FEET;

THENCE N 89°01'25" W A DISTANCE OF 112.75 FEET;
THENCE S 89°07'39" W A DISTANCE OF 122.98 FEET;
THENCE S 89°46'43" W A DISTANCE OF 70.59 FEET;
THENCE S 89°13'58" W A DISTANCE OF 159.94 FEET;
THENCE N 89°37'16" W A DISTANCE OF 240.87 FEET;
THENCE S 88°40'02" W A DISTANCE OF 166.89 FEET;
THENCE S 89°59'32" W A DISTANCE OF 184.11 FEET;
THENCE S 89°23'49" W A DISTANCE OF 189.16 FEET;
THENCE N 89°44'21" W A DISTANCE OF 93.45 FEET;
THENCE S 89°39'15" W A DISTANCE OF 196.80 FEET;
THENCE S 89°28'24" W A DISTANCE OF 67.13 FEET;
THENCE S 41°06'47" W A DISTANCE OF 26.45 FEET;
THENCE S 00°55'43" W A DISTANCE OF 118.75 FEET;
THENCE S 01°43'01" W A DISTANCE OF 105.72 FEET;
THENCE S 03°18'52" W A DISTANCE OF 165.99 FEET;
THENCE S 02°11'04" W A DISTANCE OF 115.64 FEET;
THENCE S 01°43'01" W A DISTANCE OF 145.69 FEET;
THENCE S 07°24'50" W A DISTANCE OF 107.70 FEET;
THENCE S 28°32'55" W A DISTANCE OF 31.17 FEET;
THENCE S 51°24'00" W A DISTANCE OF 42.37 FEET;
THENCE S 09°11'15" W A DISTANCE OF 47.74 FEET;
THENCE S 02°14'28" W A DISTANCE OF 98.75 FEET;
THENCE S 04°43'32" W A DISTANCE OF 166.81 FEET;
THENCE S 00°25'06" W A DISTANCE OF 82.79 FEET;
THENCE S 02°42'44" W A DISTANCE OF 146.20 FEET;
THENCE S 05°15'28" W A DISTANCE OF 113.45 FEET;
THENCE S 03°54'14" W A DISTANCE OF 156.22 FEET;
THENCE S 05°06'20" W A DISTANCE OF 97.63 FEET;
THENCE S 25°26'40" W A DISTANCE OF 45.35 FEET;
THENCE S 55°43'03" W A DISTANCE OF 34.61 FEET;
THENCE S 86°14'12" W A DISTANCE OF 69.57 FEET;
THENCE N 88°41'18" W A DISTANCE OF 115.92 FEET;
THENCE S 88°18'29" W A DISTANCE OF 131.51 FEET;
THENCE N 89°11'14" W A DISTANCE OF 99.12 FEET;
THENCE N 88°32'55" W A DISTANCE OF 119.46 FEET;
THENCE N 85°56'30" W A DISTANCE OF 95.13 FEET;
THENCE N 88°47'07" W A DISTANCE OF 137.39 FEET;
THENCE N 89°02'52" W A DISTANCE OF 125.10 FEET;
THENCE N 74°39'30" W A DISTANCE OF 8.34 FEET;
THENCE S 89°55'45" W A DISTANCE OF 99.35 FEET;
THENCE N 89°16'01" W A DISTANCE OF 75.76 FEET;
THENCE N 88°36'52" W A DISTANCE OF 98.69 FEET;
THENCE S 88°23'02" W A DISTANCE OF 25.59 FEET;
THENCE N 00°15'51" W A DISTANCE OF 298.90 FEET;
THENCE N 44°44'09" E A DISTANCE OF 35.36 FEET;
THENCE N 00°15'51" W A DISTANCE OF 80.00 FEET;
THENCE N 45°16'37" W A DISTANCE OF 52.32 FEET TO AN INTERSECTION WITH A LINE 159.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 22;
THENCE ALONG SAID PARALLEL LINE N 00°16'37" W A DISTANCE OF 1092.22 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY AND HAVING A RADIUS OF 54039.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°51'01" AN ARC DISTANCE OF 801.91 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 54961.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 00°51'46" AN ARC DISTANCE OF 827.61 FEET TO AN INTERSECTION WITH A LINE 147.50 FEET EASTERLY FROM AND PARALLEL WITH THE WEST LINE OF SAID SECTION 22;

THENCE ALONG SAID PARALLEL LINE N 00°15'52" W A DISTANCE OF 1011.84 FEET TO THE BEGINNING OF A CURVE CONCAVE EASTERLY AND HAVING A RADIUS OF 37941.00 FEET;
THENCE ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 01°08'41" AN ARC DISTANCE OF 758.09 FEET;
THENCE N 00°52'50" E A DISTANCE OF 246.58 FEET;
THENCE N 00°15'52" W A DISTANCE OF 583.85 FEET;
THENCE N 45°56'24" E A DISTANCE OF 152.35 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED.

CONTAINING A TOTAL AREA OF APPROXIMATELY 540.77 ACRES.
REF. ABB DWG #12102-SD2 (SRA TRACT 2-REV.DOC)

EXHIBIT E

RIVERGRASS SRA
NATURAL RESOURCE INDEX ASSESSMENT

Revised September 2019

Prepared For:

Collier Enterprises Management, Inc.
2550 Goodlette Road North, Suite 100
Naples, Florida 34103
(239) 261-4455

Prepared By:

Passarella & Associates, Inc.
13620 Metropolis Avenue, Suite 200
Fort Myers, Florida 33912
(239) 274-0067

Project No. 05CEM1481

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3.0 Verification of NRI Values....2

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1.0 INTRODUCTION

This Natural Resource Index (NRI) Assessment Report (Assessment) documents the environmental conditions and NRI scores within Rivergrass and demonstrates that Rivergrass meets the Suitability Criteria contained in Section 4.08.07.A.1 of the adopted Collier County Land Development Code (LDC) amendments. This Assessment is submitted in support of the Rural Lands Stewardship Area (RLSA) Overlay District-Stewardship Receiving Area (SRA) Designation Application on behalf of Collier Enterprises Management, Inc. This Assessment is consistent with the requirements of the RLSA Zoning Overlay District, LDC, Section 4.08.00.

This NRI Assessment includes the following:

- A summary analysis and verification of the NRI scores.
- Refined and updated land cover mapping of the SRA along with listed species survey data.
- Identification of the acreage of lands, by type, within the SRA that have an NRI value greater than 1.2.
- Identification of the acreage of lands, by type, included within the SRA.
- Demonstrates compliance with the Suitability Criteria contained in Section 4.08.07.A.1.

This SRA Designation Application involves the designation of 998.8± acres as Rivergrass located in Sections 10, 14, 15, 22, 23, and 27; Township 48 South; Range 28 East; Collier County (Exhibit 1). The location and extent of Rivergrass is indicated on Exhibit 2. Rivergrass is located within lands designated as "Open" on the adopted RLSA Stewardship Map and does not encroach into any Flow-way Stewardship Area (FSA), Habitat Stewardship Area (HSA) lands, or Water Retention Area (WRA) as illustrated in Exhibit 3. Rivergrass is not within the Area of Critical State Concern (ACSC).

The subject property is currently dedicated to agricultural activities (i.e., row crops and improved pasture) and includes widely scattered lands comprised of exotic vegetation (i.e., Brazilian pepper (*Schinus terebinthifolia*), non-forested wetlands, non-forested uplands, and forested wetlands), all of which exhibit a high degree of disturbance. There are few undisturbed native vegetation areas present within Rivergrass.

Listed species data from state and federal wildlife agencies indicate occurrences of panther telemetry points, wading bird rookeries, or other listed species occurrences within the SRA.

2.0 WRA DELINEATION

WRA boundaries taken from the Collier County Stewardship Overlay Map were produced from digitizing South Florida Water Management District (SFWMD) permit boundaries on aerial photography base at scales suitable for comprehensive planning. Detailed analysis of these areas was conducted on the ground, using actual surveyed wetland and permit boundaries. The

Stewardship Overlay digitized WRA boundaries were refined with the actual groundtruthed data. The Rivergrass SRA boundary was created so that no WRA areas were included. Exhibit 3 illustrates the refined Stewardship Overlay within the SRA boundary.

3.0 VERIFICATION OF NRI VALUES

This NRI Assessment includes documentation that refines the NRI values that were assigned during the original Collier County RLSA Assessment Study. Of the six NRI Factors on the Stewardship Credit Worksheet, only two factors (i.e., Land Use-Land Cover and Listed Species Habitat) are prone to change over time or require mapping refinements. Both NRI factors have been updated for this application.

While the Land Use-Land Cover mapping from the Stage 1 Report was generally accurate at the regional/planning scale, groundtruthing by Passarella & Associates, Inc. (PAI) in 2015 revealed some positional and classification errors which are rectified in this application. The updated Florida Land Use, Cover and Forms Classification System (FLUCFCS) mapping for the Rivergrass SRA is presented in Exhibit 4.

This application also updates the Listed Species Habitat Index mapping for the SRA. Listed species surveys were conducted by PAI in 2007 through 2008, 2014 through 2016, and 2019; and the current listed species occurrence data and Florida panther (*Puma concolor coryi*) telemetry were obtained from the Florida Fish and Wildlife Conservation Commission website. A map of the updated listed species occurrences, listed species records, and Florida panther telemetry points is provided as Exhibit 5.

A 2018 aerial of the SRA is provided as Exhibit 2. The U.S. Department of Agriculture-Natural Resources Conservation Services (USDA-NRCS) soils map for Rivergrass is provided in Exhibit 6.

The NRI Assessment scores are presented graphically in Exhibit 7 and Exhibit 8 is a table format of the SRA values. The assessment demonstrates that no lands within the Rivergrass SRA carry a NRI value greater than 1.2.

EXHIBIT 1

PROJECT LOCATION MAP

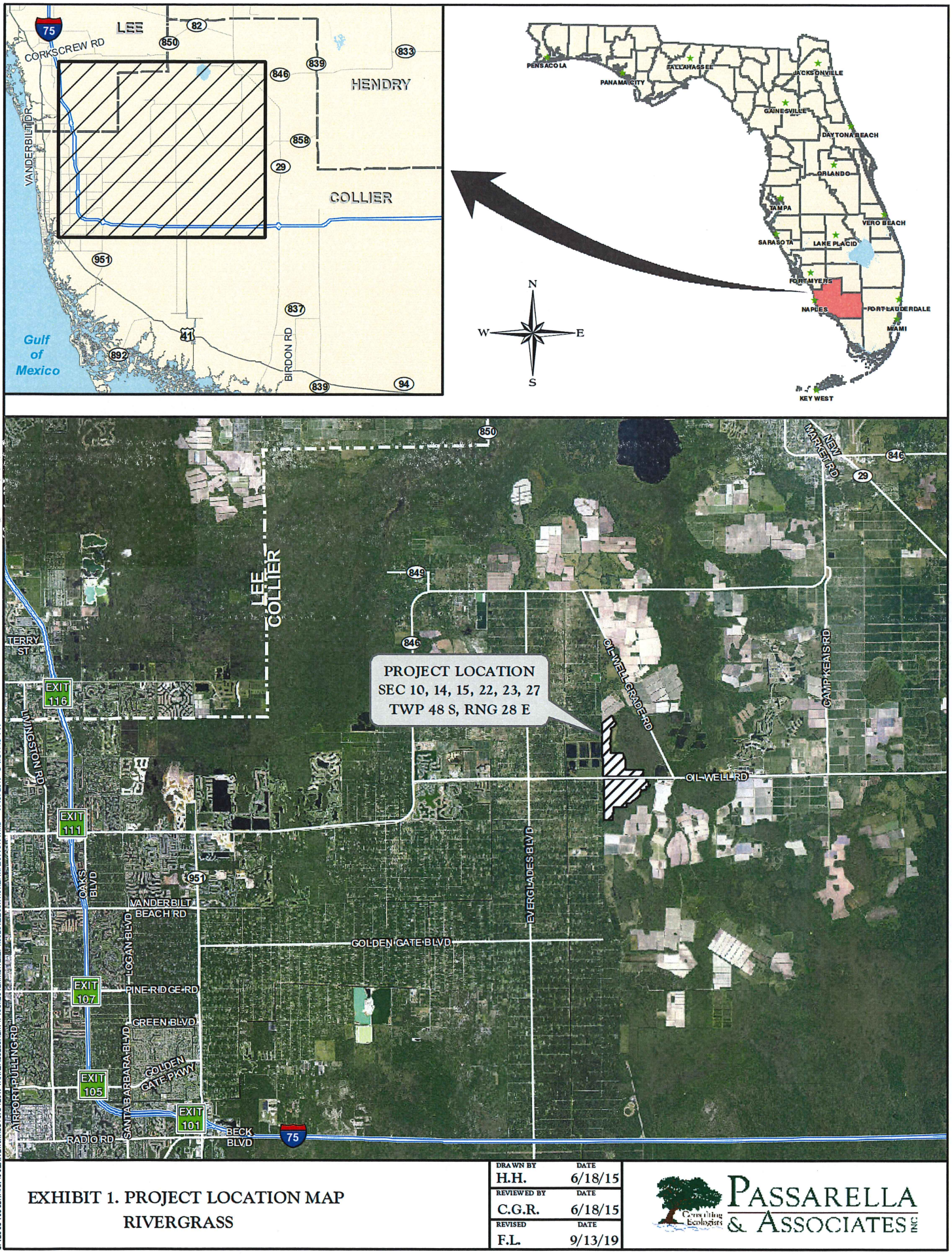

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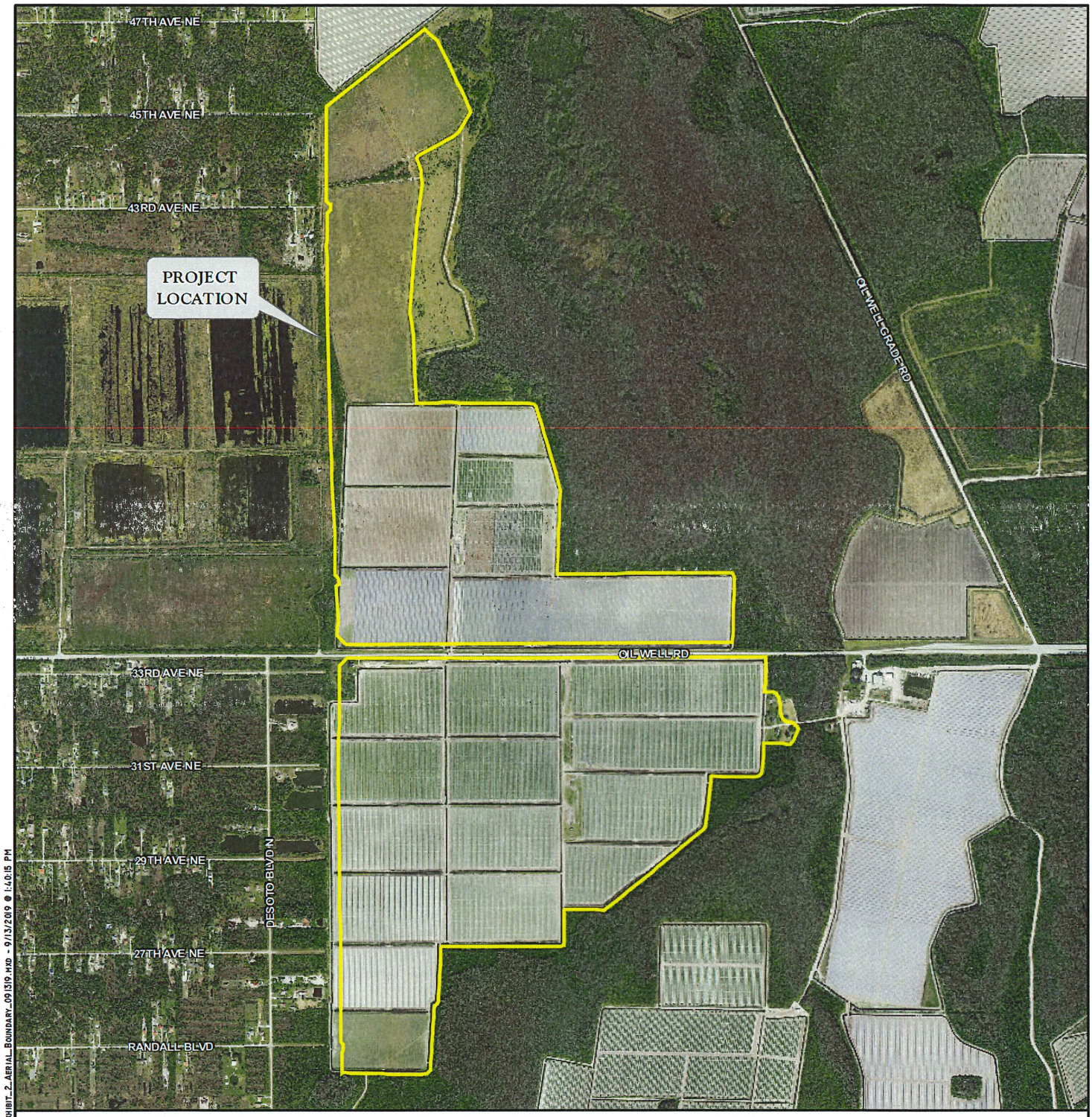
EXHIBIT 1. PROJECT LOCATION MAP
RIVERGRASS

DRAWN BY	DATE
H.H.	6/18/15
REVIEWED BY	DATE
C.G.R.	6/18/15
REVISED	DATE
F.L.	9/13/19

PASSARELLA & ASSOCIATES, INC
Consulting Ecologists

EXHIBIT 2

AERIAL WITH BOUNDARY



LEGEND

RIVERGRASS

N
W E
S

0 2,000 4,000

Feet

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF DECEMBER 2018.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. 12088SRA21-RGV BOUNDARY-090919.DWG DATED SEPTEMBER 9, 2019.

J:\2005\05.CEHI\481\00_RIVERGRASS\GIS\2019\NRI_ASSESSMENT\FIGURES\EXHIBIT_2_AERIAL_BOUNDARY_091319.MXD - 9/13/2019 @ 1:40:15 PM

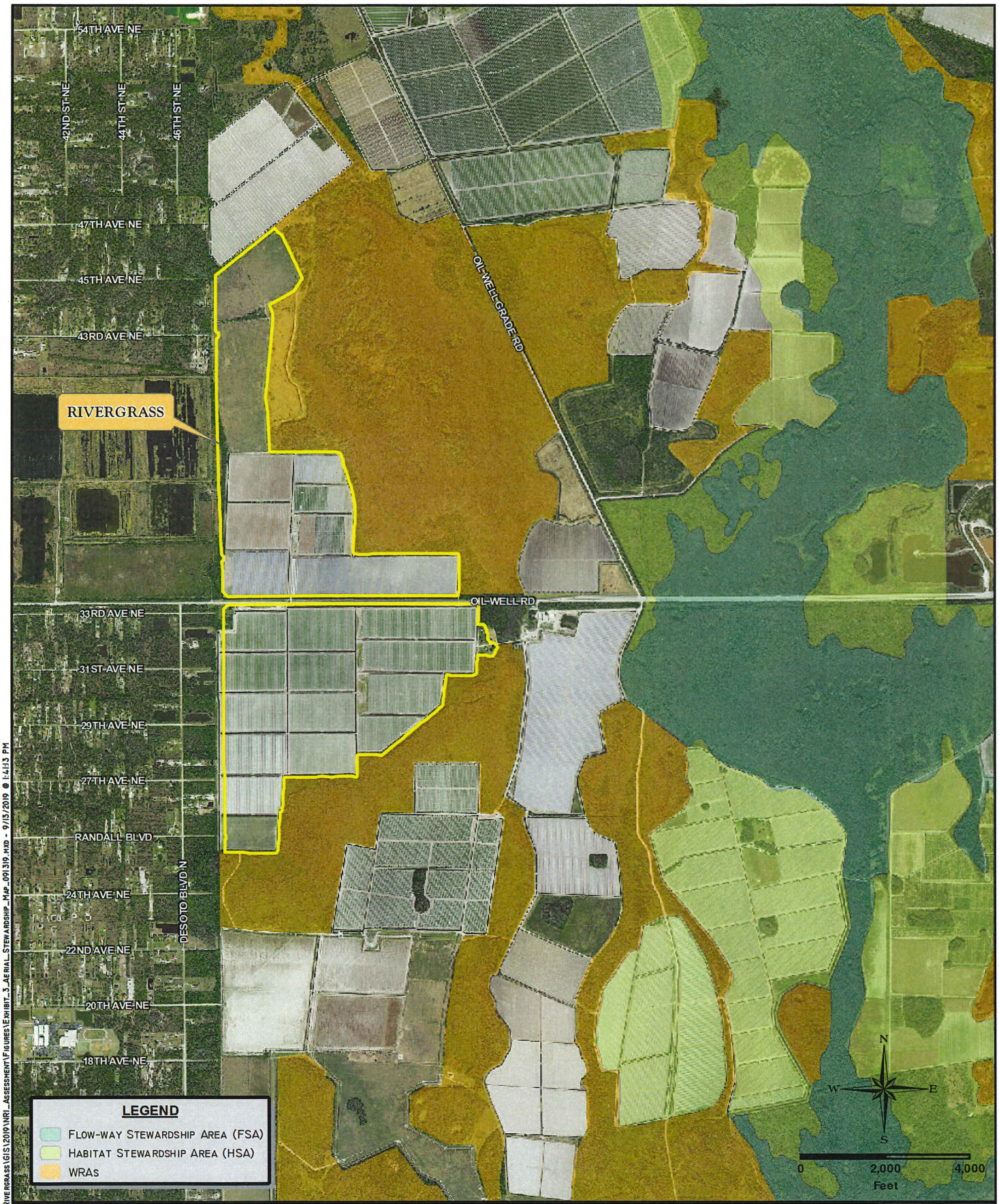
EXHIBIT 2. AERIAL WITH BOUNDARY
RIVERGRASS

DRAWN BY	DATE
F.L.	9/13/19
REVIEWED BY	DATE
K.C.P.	9/13/19
REVISED	DATE

PASSARELLA & ASSOCIATES INC
Consulting Ecologists

EXHIBIT 3

AERIAL WITH STEWARDSHIP OVERLAY



J:\2005\05CEH\48\00_RIVERGRASS\GIS\2019\NRI_ASSESSMENT\FIGURES\EXHIBIT_3_AERIAL_STEWARDSHIP_MAP_091319.MXD - 9/13/2019 @ 1:41:13 PM

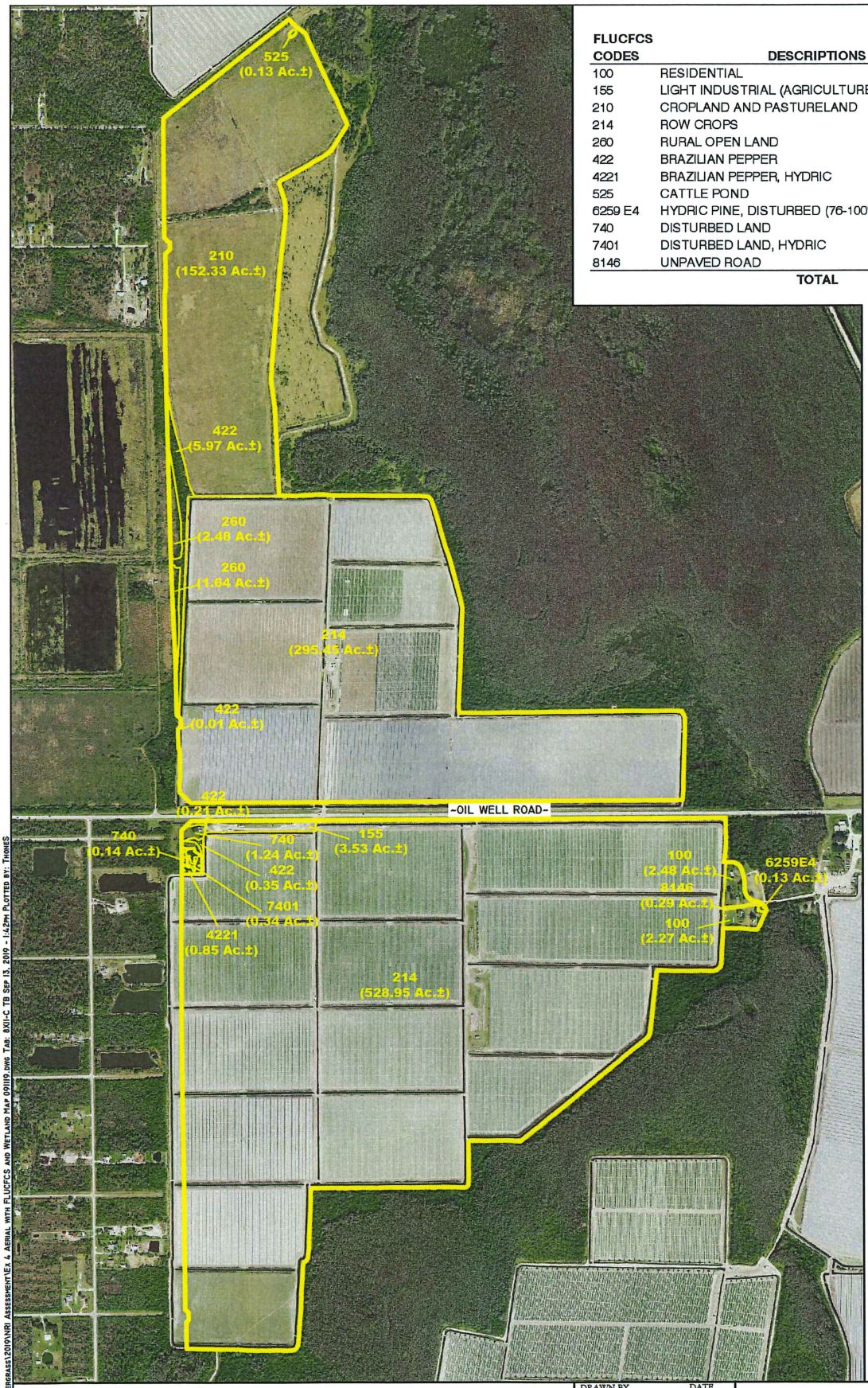
EXHIBIT 3. AERIAL WITH STEWARDSHIP OVERLAY RIVERGRASS

DRAWN BY	DATE
F.L.	9/13/19
REVIEWED BY	DATE
K.C.P.	9/13/19
REVISED	DATE

Consulting Ecologists
PASSARELLA & ASSOCIATES INC.

EXHIBIT 4

AERIAL WITH FLUCFCS AND WETLANDS MAP



FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
100	RESIDENTIAL	4.75 Ac.±	0.5%
155	LIGHT INDUSTRIAL (AGRICULTURE OPERATIONS)	3.53 Ac.±	0.4%
210	CROPLAND AND PASTURELAND	152.33 Ac.±	15.3%
214	ROW CROPS	824.40 Ac.±	82.5%
260	RURAL OPEN LAND	4.12 Ac.±	0.4%
422	BRAZILIAN PEPPER	6.54 Ac.±	0.7%
4221	BRAZILIAN PEPPER, HYDRIC	0.85 Ac.±	0.1%
525	CATTLE POND	0.13 Ac.±	0.0%
6259 E4	HYDRIC PINE, DISTURBED (76-100% EXOTICS)	0.13 Ac.±	0.0%
740	DISTURBED LAND	1.38 Ac.±	0.1%
7401	DISTURBED LAND, HYDRIC	0.34 Ac.±	0.0%
8146	UNPAVED ROAD	0.29 Ac.±	0.0%
	TOTAL	998.79 Ac.±	100.0%

N

SCALE: 1" = 1,600'

LEGEND:

SFWMD WETLANDS (1.32 Ac.±)

SFWMD "OTHER SURFACE WATERS" (0.13 Ac.±)

SURVEYED WETLAND LINE

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF DECEMBER 2018.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. 12088SRA21-RGV BOUNDARY-090919.DWG DATED SEPTEMBER 9, 2019.

WETLAND LINES PER ABB, INC. DRAWING No.JDL-N-WORKSHEET TO KP15JUN07.DWG DATED JUNE 15, 2007.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

J:\2005\05ce#4\81\00-Rivergrass\2019\NRI Assessment\Ex 4 Aerial with FLUCFCS and Wetland Map 090119.dwg Tab: 8X11-C TB Sep 13, 2019 - 1:47pm Plotted by: Thomes

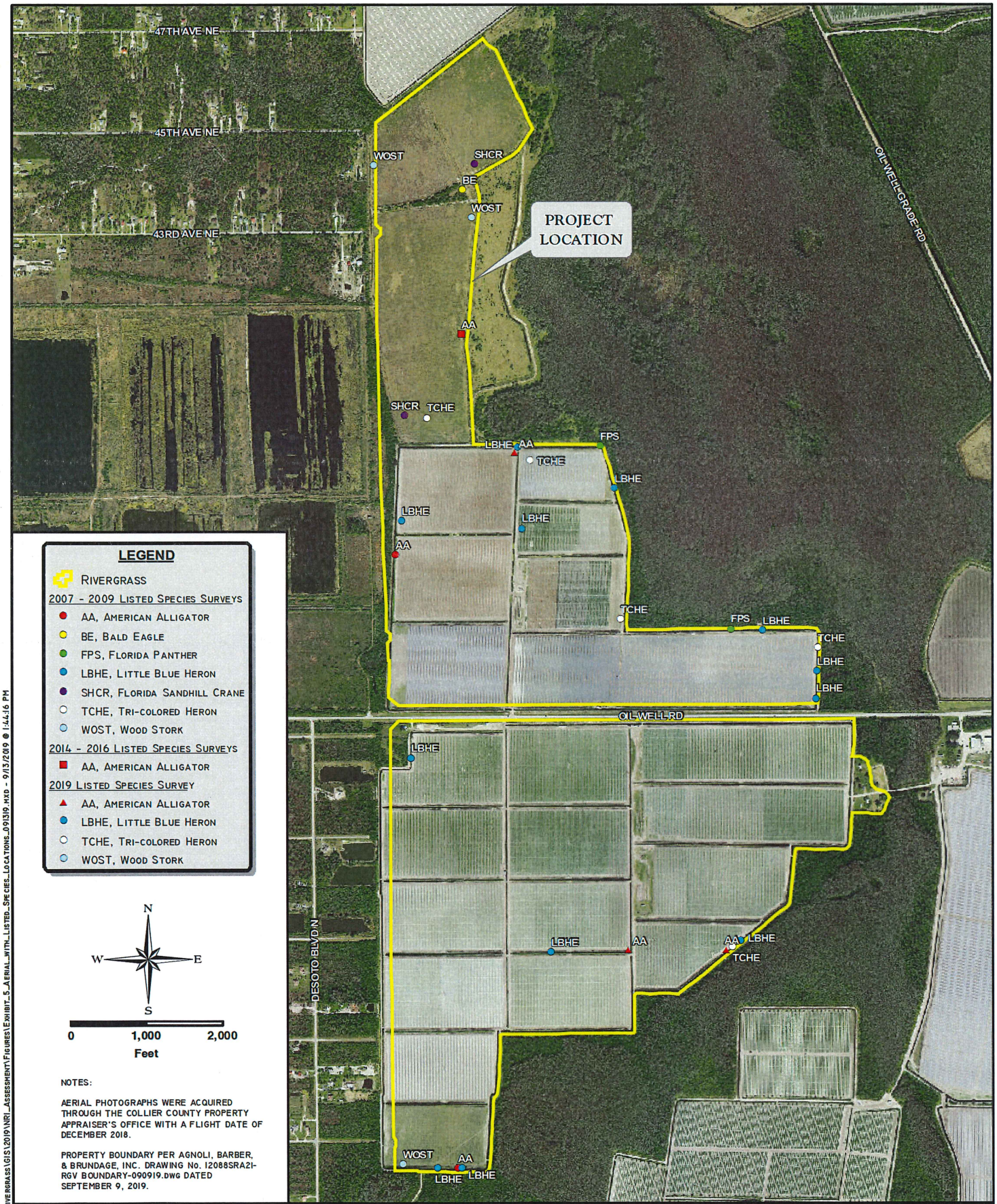
EXHIBIT 4. AERIAL WITH FLUCFCS AND WETLANDS MAP
RIVERGRASS

DRAWN BY	DATE
H.H.	12/18/18
REVIEWED BY	DATE
K.C.P.	12/18/18
REVISED	DATE
H.H.	09/12/19

Consulting Ecologists
PASSARELLA & ASSOCIATES INC

EXHIBIT 5

DOCUMENTED LISTED SPECIES LOCATIONS
(2007-2008, 2014-2016, and 2019 SURVEYS)



NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF DECEMBER 2018.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING No. I2088SRA2I-RGV BOUNDARY-090919.DWG DATED SEPTEMBER 9, 2019.

J:\2005\05ceh\48\00_Rivergrass\GIS\2019\NRI_Assessment\Figures\Exhibit_5_Aerial_with_Listed_Species_Locations_091319.mxd - 9/13/2019 @ 1:44:16 PM

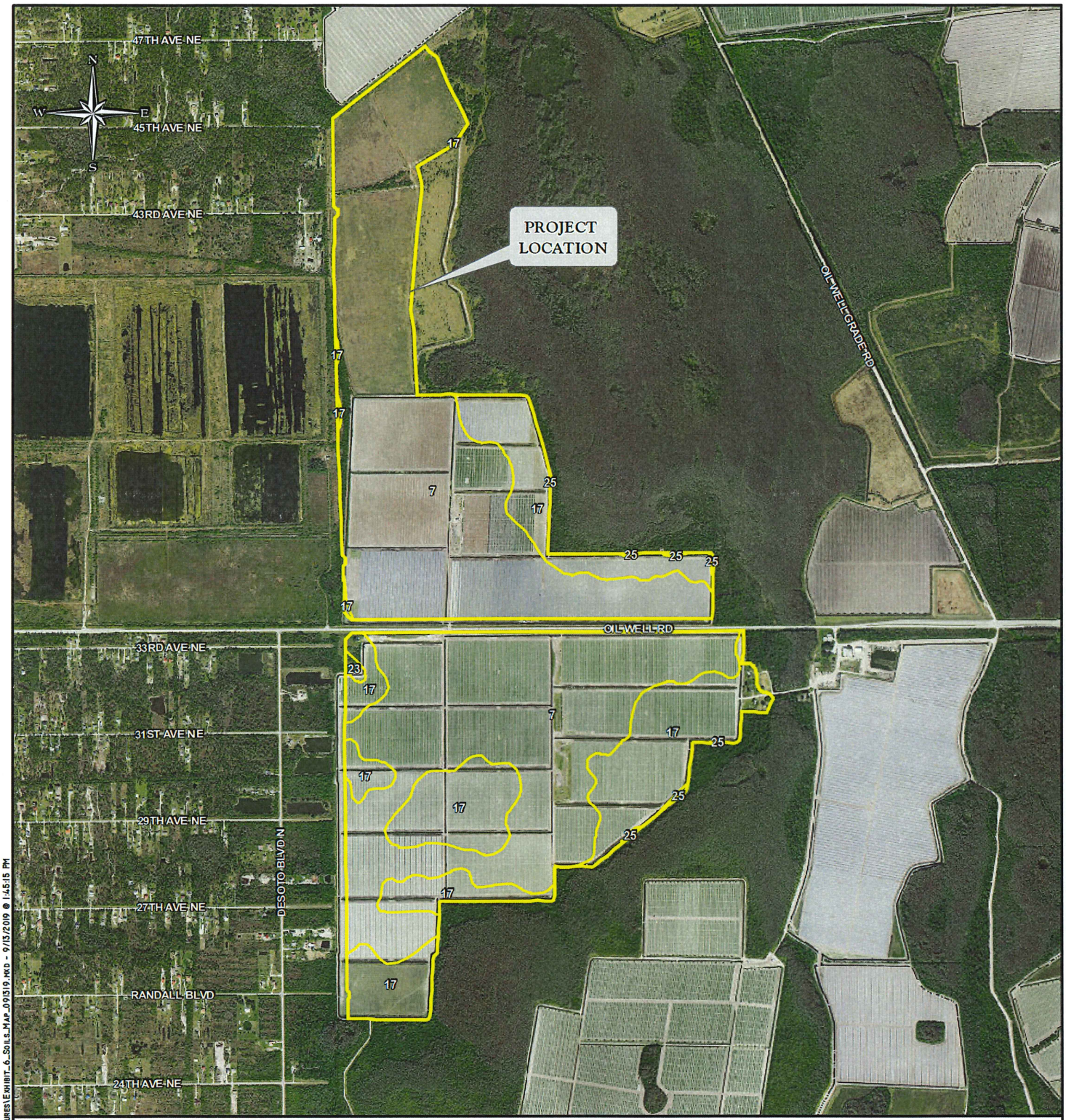
EXHIBIT 5. DOCUMENTED LISTED SPECIES LOCATIONS (2007 - 2009, 2014 - 2016, AND 2019 SURVEYS) RIVERGRASS

DRAWN BY	DATE
H.H.	12/18/18
REVIEWED BY	DATE
K.C.P.	12/18/18
REVISED	DATE
F.L.	9/13/19

PASSARELLA & ASSOCIATES INC.
Consulting Ecologists

EXHIBIT 6

SOILS MAP



LEGEND

RIVERGRASS

0 1,000 2,000

Feet

SOIL UNIT	NAME	NSLP CLASSIFICATION
7	IMMOKALEE FINE SAND	FLATWOOD SOILS
17	BASINGER FINE SAND	FLATS (TRANSITIONAL) SOILS
23	HOLOPAW AND OKEELANTA SOILS, DEPRESSIONAL	SAND DEPRESSION
25	BOCA, RIVIERA, LIMESTONE SUBSTRATUM AND COPELAND FS, DEPRESSIONAL	SAND DEPRESSION

NOTES:

ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

SOILS MAPPING WAS ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE OCTOBER 2007 AND CREATED BY THE NATURAL RESOURCES CONSERVATION SERVICE 1990.

EXHIBIT 6. SOILS MAP
RIVERGRASS

DRAWN BY	DATE
H.H.	12/18/18
REVIEWED BY	DATE
K.C.P.	12/18/18
REVISED	DATE
F.L.	9/13/19

PASSARELLA & ASSOCIATES INC.
Consulting Ecologists

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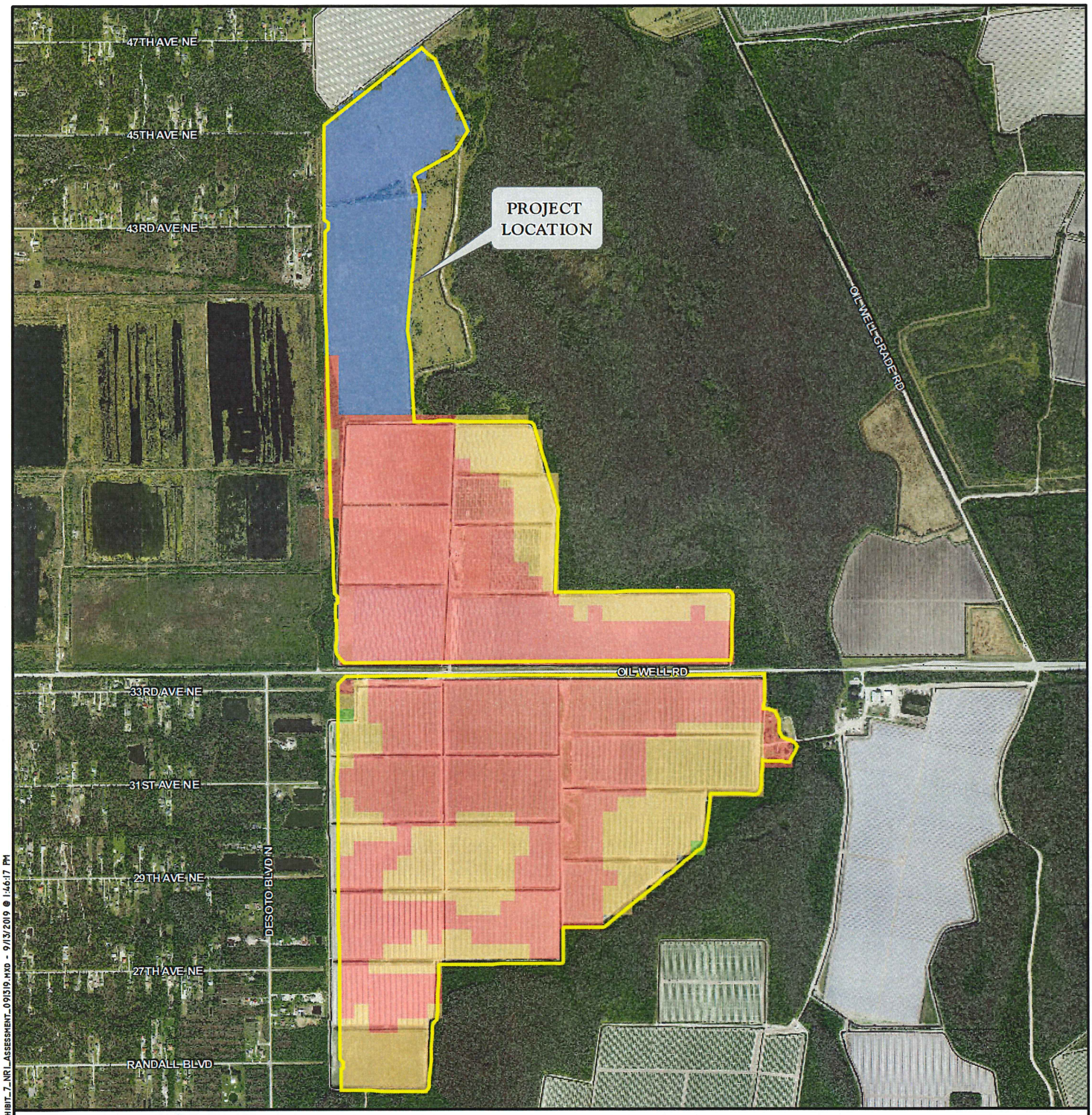
EXHIBIT 7

NRI ASSESSMENT



LEGEND

RIVERGRASS

VALUE

- 0.2
- 0.4
- 0.5
- 0.6

N

W E

S

0 1,500 3,000

Feet

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF DECEMBER 2018.

PROPERTY BOUNDARY PER AGNOLI, BARBER, & BRUNDAGE, INC. DRAWING NO. 12088SRA21-RGV BOUNDARY-090919.DWG DATED SEPTEMBER 9, 2019.

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EXHIBIT 7. NRI ASSESSMENT
RIVERGRASS

DRAWN BY	DATE
F.L.	9/13/19
REVIEWED BY	DATE
K.C.P.	9/13/19
REVISED	DATE

PASSARELLA & ASSOCIATES INC.
Consulting Ecologists

EXHIBIT 8

SRA NATURAL RESOURCE INDEX VALUES

Exhibit 8 Rivergrass SRA Natural Resource Index Values

NRI Value	Percent of Total SRA Acreage	Open Total Acres	Total SRA Acres
0.0	0.0	0.0	0.0
0.1	0.0	0.0	0.0
0.2	58.74	586.7	586.7
0.3	0.00	0.0	0.0
0.4	26.07	260.4	260.4
0.5	0.20	2.0	2.0
0.6	14.99	149.7	149.7
0.7	0.00	0.0	0.0
0.8	0.00	0.0	0.0
0.9	0.00	0.0	0.0
1.0	0.00	0.0	0.0
1.1	0.00	0.0	0.0
1.2	0.00	0.0	0.0
1.3	0.00	0.0	0.0
1.4	0.00	0.0	0.0
1.5	0.00	0.0	0.0
Totals	**100.0**	**998.8**	**998.8**
Totals NRI >1.2	**0.0**	**0.0**	**0.0**

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Col5=Age Text Width 254
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Col6=Location Text Width 254
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Col10=NAD83E Double
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PANTHER COMPENSATION CALCULATOR

About

Development size		(hectares)
primary/d	secondary	other

Compensation		(hectares)
primary/d	secondary	other

(PHUs)	Suggested Required	Comp. Proposed
primary/d		
secondary		
other		

Acreage Comp. Ratio	
Primary Equiv. Comp Ratio	

Primary/d impacts fully compensated?	
Secondary impacts fully compensated?	
"Other" impacts fully compensated?	

No. of Panthers:	90
Base Ratio:	1.98

Relative values	
primary/d	1.000
secondary	0.690
other	0.333

DEVELOPMENT
Habitat Value before Project
Habitat Value after Project
Habitat Value Lost
Base Ratio
Suggested Compensation

Select Units
- (•) Acres
- ( ) Hectares

New Project

Clear All

COMPENSATION	
Habitat Value of Compensation	
Habitat Value after Restoration	
Restoration Lift Factor*	0.5
Final Value of Compensation	
Additional Compensation Needed	

***When converting Ag lands to non-forested native systems applicant gets full credit of lift**

PROJECT PLANNING INFO FOR PANTHER TABLE

Habitat Impact Acreage and Panther Units						Compensation Acreage and Panther Units.					
primary/d		secondary		other		primary/d		secondary		other	
Acres	PHU	Acres	PHU	Acres	PHU	Acres	PHU	Acres	PHU	Acres	PHU
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PROJECT WORKSHEET

Habitat Type	*Assigned value*	Habitat types of land to be developed: Primary/d Zone	Secondary Zone	Other Zone	Primary Equivalent Habitat Units	Habitat types of land after development: Primary/d Zone	Secondary Zone	Other Zone	Primary Equivalent Habitat Units
Pine forest	9.5				0				0
Hardwood-Pine	9.3				0				0
Cypress swamp	9.2				0				0
Hardwood swamp	9.2				0				0
Hardwood Forest	9				0				0
Dry prairie	6.3				0				0
Unimproved pasture	5.7				0				0
Shrub swamp/brush	5.5				0				0
Improved pasture	5.2		110.49		396				0
Cropland	4.8				0				0
Orchards/groves	4.7				0				0
Marsh/ wet prairie	4.7				0				0
Xeric scrub	4.5				0				0
Exotic/Nuisance plants	3		1.89		4				0
Coastal wetlands	3				0				0
Barren/Disturbed lands	3		129.63		268				0
Water	0		400.52		0				0
Urban	0				0				0
Reservoirs*					0				0
STA*					0				0
TOTAL		0.00	642.53	0.00	668.68	0.00	0.00	0.00	0.00

CONTINUE

CLEAR SHEET

COMPENSATION TO OFF-SET
1324
Habitat Units

***NOTE: The assigned value for Reservoirs and STAs varies by size, proposed future management, and their position in the landscape.**
See the associated methodology document for guidance on starting values and considerations.

COMPENSATION

Habitat Type	*Assigned value*	Habitat types of land being offered as compensation: Primary/d Zone	Secondary Zone	Other Zone	Equivalent Habitat Units	Habitat types of compensation land after restoration: Primary/d Zone	Secondary Zone	Other Zone	Equivalent Habitat Units
Pine forest	9.5				0				
Hardwood-Pine	9.3				0				
Cypress swamp	9.2				0				
Hardwood swamp	9.2				0				
Hardwood Forest	9				0				
Dry prairie	6.3				0				
Unimproved pasture	5.7				0				
Shrub swamp/brush	5.5				0				
Improved pasture	5.2				0				
Cropland	4.8				0				
Orchards/groves	4.7				0				
Marsh/ wet prairie	4.7				0				
Xeric scrub	4.5				0				
Exotic/Nuisance plants	3				0				
Coastal wetlands	3				0				
Barren/Disturbed lands	3				0				
Water	0				0				
Urban	0				0				
Reservoirs*					0				
STA*					0				
SubTotal		0.00	0.00	0.00	0.00				

CONTINUE

CLEAR SHEET

COMPENSATION PROPOSED
0
Habitat Units

0 Subtotal PHU with time lag factor

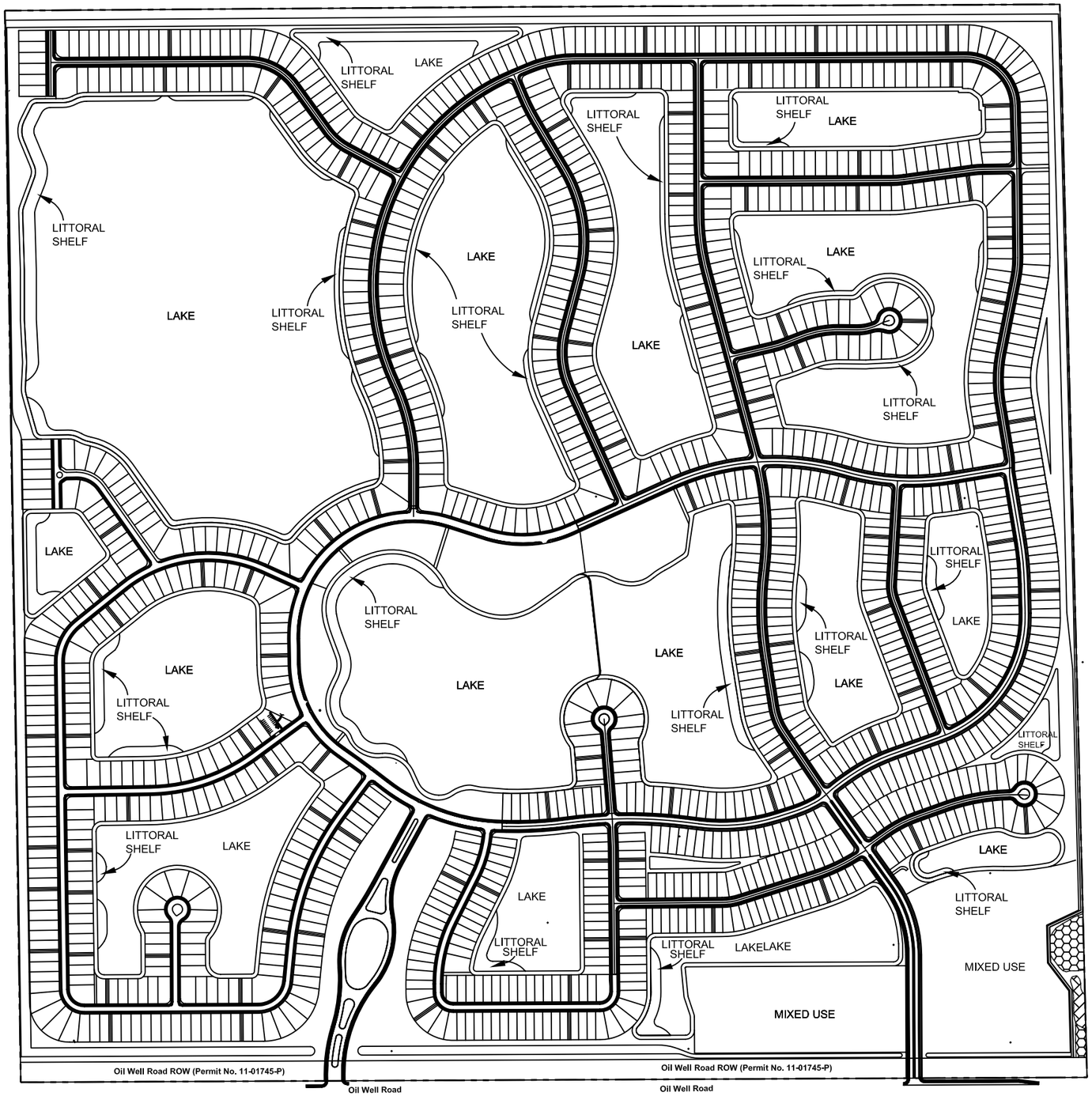
USE SECTION BELOW ONLY IF A NATIVE HABITAT IS BEING CREATED FROM AG LANDS

Unimproved pasture	5.7				0				
Improved pasture	5.2				0				
Cropland	4.8				0				
Orchards/groves	4.7				0				
Shrub swamp/brush	7								
Marsh/ wet prairie	7								
Xeric scrub	7								
Coastal wetlands	7								
SubTotal		0.00	0.00	0.00	0.00				

Values in green are only used when ag lands are restored to non-forested native habitat. Full restoration value is immediate in this instance only.

0 Subtotal PHU from Ag Restoration

***NOTE: The assigned value for Reservoirs and STAs varies by size, proposed future management, and their position in the landscape. See the associated methodology document for guidance on starting values and considerations.**


LITTORAL SHELF
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LITTORAL SHELF
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