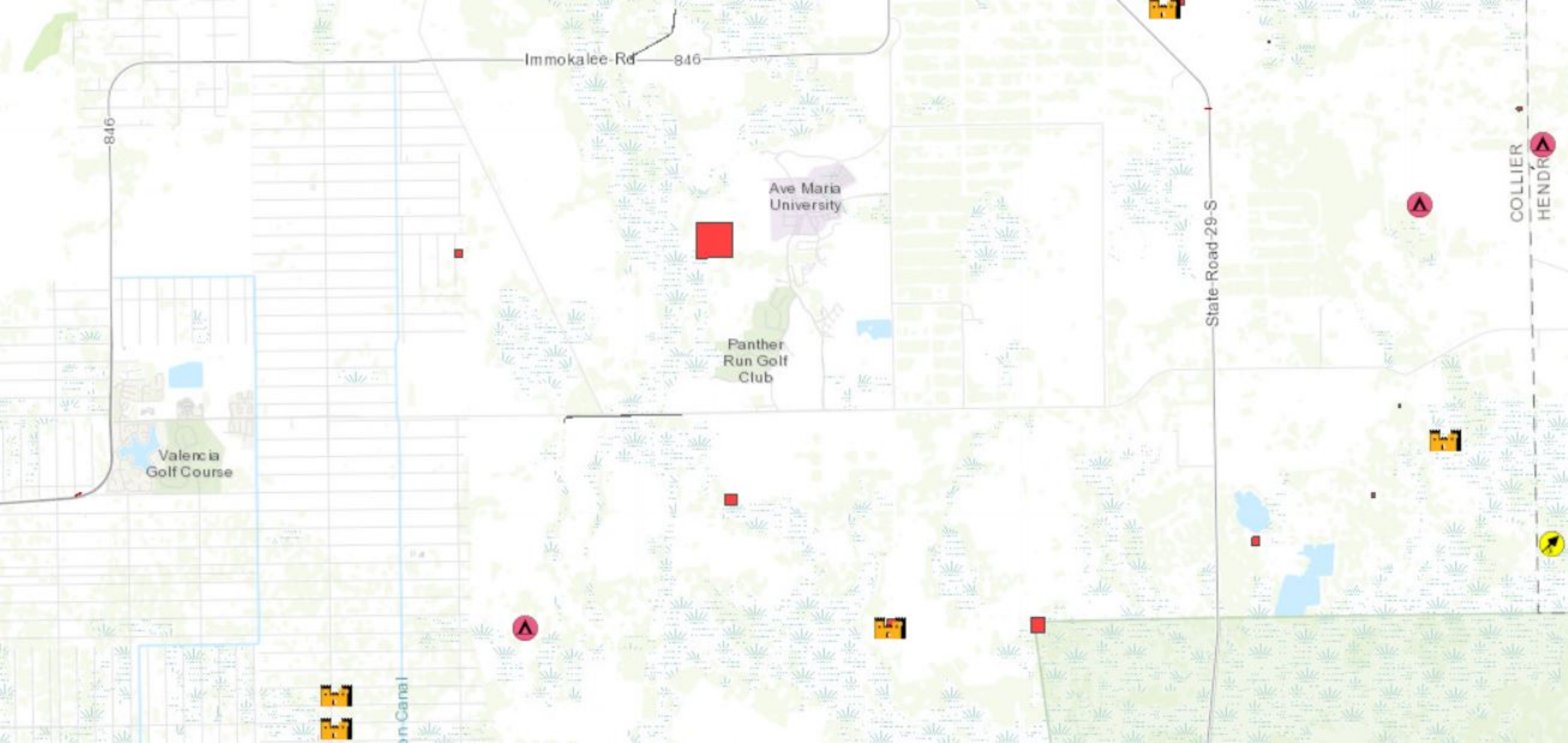
Immokalee Rd
846
846
Ave Maria
University
Panther
Run Golf
Club
Valencia
Golf Course
State Road 29 S
COLLIER
HENDR

# Label: "1 Supervisor/FOIA/FWS-2019-01086-partial withold deliberative information"

**Created by:constance_cassler@fws.gov**

Total Messages in label:17 (3 conversations)

Created: 10-30-2019 at 14:15 PM

# Conversation Contents

**Fwd: East Collier HCP: Revised Pause IM**

**Attachments:**

/2. Fwd: East Collier HCP: Revised Pause IM/1.1 20190605 IM ECPO final new format.docx

## "Tawes, Robert" <robert_tawes@fws.gov>

| | |
|---|---|
| **From:** | "Tawes, Robert" <robert_tawes@fws.gov> |
| **Sent:** | Wed Jun 05 2019 13:16:23 GMT-0600 (MDT) |
| **To:** | Larry Williams <larry_williams@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, "Ziewitz, Jerry" <jerry_ziewitz@fws.gov> |
| **CC:** | "Dell, David" <david_dell@fws.gov> |
| **Subject:** | Fwd: East Collier HCP: Revised Pause IM |
| **Attachments:** | 20190605 IM ECPO final new format.docx |

FYI

---------- Forwarded message ---------
From: **Dell, David** <david_dell@fws.gov>
Date: Wed, Jun 5, 2019 at 3:03 PM
Subject: East Collier HCP: Revised Pause IM
To: Jack Arnold <jack_arnold@fws.gov>
Cc: Robert Tawes <Robert_Tawes@fws.gov>

Here's the new, Laura Maloof version.

David Dell
US Fish and Wildlife Service
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
david_dell@fws.gov

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--
Rob W. Tawes

Chief, Division of Environmental Review
U.S. Fish and Wildlife Service
Southeast Regional Office
1875 Century Boulevard
Atlanta, GA 30345
(w) 404/679-7142
(f) 404/679-7081
http://www.fws.gov/southeast/
www.fws.gov

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# USFWS INFORMATION MEMORANDUM

**DATE:** December 4, 2019

**TO:** Margaret Everson, Principal Deputy Director, U. S. Fish and Wildlife Service Exercising the Authority of the Director of the U.S. Fish and Wildlife Service

**FROM:** Leopoldo Miranda, Regional Director, Southeast Region
**Telephone #:** 404-679-4000

**SUBJECT:** Status of Fish and Wildlife Service (FWS) Review of Eastern Collier Property Owners (ECPO or Applicants), Collier County, Florida, Habitat Conservation Plan (HCP)

## I. STATEMENT OF ISSUE/KEY FACTS

This memorandum is to alert the Department of our placing the Project on "pause" in anticipation of making a subsequent waiver request to the S.O. 3355 timeline requirements. This Endangered Species Act, section 10 incidental take permit application by 11 landowners would authorize incidental take of Florida panther and 18 other species due to development and earth mining over a requested 50-year term.

We have been notified by the applicants (ECPO) that they contacted the Department regarding their desire for additional time around May 13, 2019, and that this request was approved. We are placing the Project on pause, at ECPO's request, to accommodate their review and input into the traffic analysis. This will result in a stronger, more defensible final Agency decision. We plan to pause until a short time after our discussions with ECPO around June 7 to reach consensus, map a new timeline, and then submit a waiver request to the Department to implement the new timeline.

## II. BACKGROUND AND FWS POSITION

This project received approval of a waiver request, approved at the Assistant Secretary's level on April 1, 2019. The waiver sought to adjust the Record of Decision (ROD) target date by 60 calendar days from May 29 to July 29, 2019. The purpose of this waiver was to:

a. Accommodate the Applicants' review and revisions to their HCP in response to public comments and our recommendations.
b. Allow the Service to review and finalize the latest revisions to the EIS supplied by the contractor.

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(b)(5) DPP

[redacted]

As an additional uncertainty, the Seminole Tribe has not responded to our formal consultation under National Historic Preservation Act, Section 106. We have coordinated with the Tribe beginning with initial scoping in March, 2016, and since, but opened formal consultation on February 1, 2019. An information webinar was held with the Tribe on March 29, 2019. We have queried them, and expect a response from the Tribe. They are apparently in staff transition. We have received a formal objection to the project from the Miccosukee Indian Tribe during our formal consultation with them. Their primary concerns center around panther roadway mortality and preservation of historic and cultural resources. We hope to be able to address the former concern through the traffic impact discussions with the applicants, and the latter through enhanced communication with them on future individual projects under the HCP and associated permit.

The Service is fully engaged in concluding our review of ECPO's application, while ensuring that we make a fully defensible decision. This is a top priority project for the Southeast Region, up to 14 field office and 5 regional office staff are working on this project. Except for the furlough, we have, since April 2018, met continuously with ECPO every other week to review progress, settle issues, and exchange information to advance our review.

## III. POSITION OF AFFECTED PARTIES/PUBLIC LANDS AFFECTED

### ECPO Applicants

The Applicants, as demonstrated by their outreach to the Department, want us to reach a fully defensible decision. ECPO is working with us to ensure we have what we need, and that we are consistent with our assumptions. As expressed in our September 14, 2018, Department Review Team briefing, the Applicants are sensitive to liability for harm to panthers caused by third-party traffic effects.

**Corps of Engineers**

The Corps of Engineers is a cooperating agency in preparing the EIS for this project. The Service is also negotiating a memorandum of understanding (MOU) to facilitate section 7 consultations, should we issue ITPs, on wetland fill applications made by ECPO landowners covered by the HCP. We have a draft MOU that we are now transmitting to the Corps for their review.

**Other Entities**

Multiple citizens and environmental groups have provided comments on the HCP and the draft EIS. We fully expect legal challenges against any ITP issuance in this matter.

## IV. STATUS UPDATE

The Draft EIS Notice of Availability closed December 3, 2018. From that time through the end of March, 2019, the Applicants and the Service exchanged information and recommendations to respond to public comments, revise the HCP in response to public comments, and collaborated on analyses of highway traffic effects.

## V. POTENTIAL ISSUES

(b) (5) [redacted]

## VI. TIMELINE/NEXT STEPS

We intend to place this project in "pause" status while we settle the matters described above, and within 30 days of this memorandum, prepare a waiver request for a new timeline to conclude publication of the final EIS and record of decision.

**Prepared by:** *Leopoldo Miranda, Regional Director, Southeast Region*

☒ **FYI**

(b) (5) [redacted]

# Label: "1 Supervisor/FOIA/FWS-2019-01086-partial withold redact call-in info"

**Created by:constance_cassler@fws.gov**

Total Messages in label:24 (12 conversations)

Created: 10-28-2019 at 13:17 PM

# Label: "1 Supervisor/FOIA/FWS-2019-01086-partial withold cultural resource locations"

**Created by:constance_cassler@fws.gov**

Total Messages in label:25 (3 conversations)

Created: 10-30-2019 at 14:08 PM

# Conversation Contents

**Locations of cultural resources we know about in the E. Collier Multi-species HCP area**

**Attachments:**

/1. Locations of cultural resources we know about in the E. Collier Multi-species HCP area/1.1 Cultural Resources from Preliminary Draft_ECMSHCP_EIS_062918.pdf
/1. Locations of cultural resources we know about in the E. Collier Multi-species HCP area/2.1 Cultural Resources from Preliminary Draft_ECMSHCP_EIS_062918.pdf

## "Cassler, Constance" <constance_cassler@fws.gov>

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Mon Apr 08 2019 07:26:45 GMT-0600 (MDT) |
| **To:** | victoriamenchaca@semtribe.com |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Kenneth Mcdonald <kenneth_mcdonald@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov> |
| **Subject:** | Locations of cultural resources we know about in the E. Collier Multi-species HCP area |
| **Attachments:** | Cultural Resources from Preliminary Draft_ECMSHCP_EIS_062918.pdf |

Hi Victoria,

I'm following up on our March 29, 2019, formal consultation meeting with the information about the cultural resources on which we based the draft EIS that went out to the public. The attached information was the original cultural resources section that came from our EIS consultant, AECOM. It included maps with specific locations which we didn't share with the public. These maps may be helpful to you in determining if you have locations we don't know about that you would like to share with us. Please let me know if you have questions.

Thank you,

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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## "Cassler, Constance" <constance_cassler@fws.gov>

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Mon Apr 08 2019 07:34:59 GMT-0600 (MDT) |
| **To:** | Richard Kanaski <richard_kanaski@fws.gov> |
| **Subject:** | Fwd: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |
| **Attachments:** | Cultural Resources from Preliminary Draft_ECMSHCP_EIS_062918.pdf |

Hi,

I'm sorry I forgot to CC you on this email.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
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Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
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---------- Forwarded message ---------
From: **Cassler, Constance** <constance_cassler@fws.gov>
Date: Mon, Apr 8, 2019 at 9:26 AM
Subject: Locations of cultural resources we know about in the E. Collier Multi-species HCP area
To: <victoriamenchaca@semtribe.com>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Kenneth Mcdonald <kenneth_mcdonald@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov>

Hi Victoria,

I'm following up on our March 29, 2019, formal consultation meeting with the information about the cultural resources on which we based the draft EIS that went out to the public. The attached information was the original cultural resources section that came from our EIS consultant, AECOM. It included maps with specific locations which we didn't share with the public. These maps may be helpful to you in determining if you have locations we don't know

about that you would like to share with us.  Please let me know if you have questions.

Thank you,

Connie

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fax:  772-562-4288
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## Victoria Menchaca <VictoriaMenchaca@semtribe.com>

| | |
|---|---|
| **From:** | Victoria Menchaca <VictoriaMenchaca@semtribe.com> |
| **Sent:** | Tue Apr 23 2019 13:02:53 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Kenneth Mcdonald <kenneth_mcdonald@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov> |
| **Subject:** | [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |

Hi Connie,

Thank you for providing this information. I apologize for the delay in getting back to you about our areas of concern. I have identified the location of at least one area of concern for us that is not in the report and I am currently working with our GIS section and the shapefiles that were sent to us to evaluate the rest of the area. Unfortunately, they are out of the office this week so it may not be until the end of next week that we can say for sure if there are other areas of concern or not.

Sincerely,

Victoria Menchaca, M.A.
Compliance Review Specialist
Seminole Tribe of Florida
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440
Tel: 863-983-6549 Ext: 12216
Email: victoriamenchaca@semtribe.com

**From:** Cassler, Constance [mailto:constance_cassler@fws.gov]
**Sent:** Monday, April 08, 2019 9:27 AM
**To:** Victoria Menchaca
**Cc:** Timothy Binzen; Kevin Palmer; Charles Kelso; Kenneth Mcdonald; Roxanna Hinzman; David Dell
**Subject:** Locations of cultural resources we know about in the E. Collier Multi-species HCP area

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Hi Victoria,

I'm following up on our March 29, 2019, formal consultation meeting with the information about the cultural resources on which we based the draft EIS that went out to the public. The attached information was the original cultural resources section that came from our EIS consultant, AECOM. It included maps with specific locations which we didn't share with the public. These maps may be helpful to you in determining if you have locations we don't know about that you would like to share with us. Please let me know if you have questions.

Thank you,

Connie

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## "Cassler, Constance" <constance_cassler@fws.gov>

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Tue Apr 23 2019 13:43:35 GMT-0600 (MDT) |
| **To:** | Victoria Menchaca <VictoriaMenchaca@semtribe.com> |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Kenneth Mcdonald <kenneth_mcdonald@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov> |
| **Subject:** | Re: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |

Victoria,

Thank you for letting us know. The important thing for us is to get the best information we can so we don't let something slip through the cracks. We appreciate your help.

Connie

Constance L. Cassler, Ph.D.
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On Tue, Apr 23, 2019 at 3:03 PM Victoria Menchaca <VictoriaMenchaca@semtribe.com> wrote:

> Hi Connie,
>
> Thank you for providing this information. I apologize for the delay in getting back to you about our areas of concern. I have identified the location of at least one area of concern for us that is not in the report and I am currently working with our GIS section and the shapefiles that were sent to us to evaluate the rest of the area. Unfortunately, they are out of the office this week so it may not be until the end of next week that we can say for sure if there are other areas of concern or not.
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> Compliance Review Specialist
> Seminole Tribe of Florida
> Tribal Historic Preservation Office
> 30290 Josie Billie Hwy, PMB 1004
> Clewiston, FL 33440
> Tel: 863-983-6549 Ext: 12216
> Email: victoriamenchaca@semtribe.com
>
> ---
>
> **From:** Cassler, Constance [mailto:constance_cassler@fws.gov]
> **Sent:** Monday, April 08, 2019 9:27 AM
> **To:** Victoria Menchaca
> **Cc:** Timothy Binzen; Kevin Palmer; Charles Kelso; Kenneth Mcdonald; Roxanna Hinzman; David Dell
> **Subject:** Locations of cultural resources we know about in the E. Collier Multi-species HCP area
>
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Thank you,

Connie

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## Victoria Menchaca <VictoriaMenchaca@semtribe.com>

| | |
|---|---|
| **From:** | Victoria Menchaca <VictoriaMenchaca@semtribe.com> |
| **Sent:** | Tue Apr 30 2019 09:31:33 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Kenneth Mcdonald <kenneth_mcdonald@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov> |
| **Subject:** | RE: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |

Hi Constance,

I looked over the sites and I identified two Seminole camps in the project area. However, both appear to be in preserve areas. One I am not so sure about so I have attached a screenshot of the location. In general, we would respectfully ask that any sites in areas which will be developed and currently have insufficient information to determine eligibility that those sites be evaluated for their eligibility via a Cultural Resources Assessment Survey. Also, any areas that have not been previously surveyed should be. Additionally, all of the Fort sites in this area are important to the Seminole as they were involved in the Seminole Wars, and the area in and around Lake Trafford (based on the mounds identified in the area of this lake there is a good possibility it was use for prehistoric pond burials).

There is one more thing I would like to do which is to ask the Immokalee community if there are any other hammocks or sites that are important to them that we don’t have yet. So, I will get in touch with them and get back to you all as soon as possible. In the meantime, I wanted to go ahead and give you

the information that we have on hand right now.

Thank you ,

Victoria

---

**From:** Cassler, Constance [mailto:constance_cassler@fws.gov]
**Sent:** Tuesday, April 23, 2019 3:44 PM
**To:** Victoria Menchaca
**Cc:** Timothy Binzen; Kevin Palmer; Charles Kelso; Kenneth Mcdonald; Roxanna Hinzman; David Dell
**Subject:** Re: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area

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fax: 772-562-4288
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>
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> Victoria Menchaca, M.A.
> Compliance Review Specialist
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> 30290 Josie Billie Hwy, PMB 1004
> Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216
Email: victoriamenchaca@semtribe.com

**From:** Cassler, Constance [mailto:constance_cassler@fws.gov]
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**To:** Victoria Menchaca
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**Subject:** Locations of cultural resources we know about in the E. Collier Multi-species HCP area

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Hi Victoria,

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Thank you,

Connie

Constance L. Cassler, Ph.D.
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office: 772-469-4243
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## "Cassler, Constance" <constance_cassler@fws.gov>

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Tue Apr 30 2019 10:00:28 GMT-0600 (MDT) |
| **To:** | Victoria Menchaca <VictoriaMenchaca@semtribe.com> |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Kenneth Mcdonald <kenneth_mcdonald@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov> |

**Subject:** Re: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area

Thank you Victoria. We look forward to any additional information you can provide. I also want to let you know we are developing a plan to make sure future projects within the HCP receive proper Tribal Consultation. As soon as we are ready with a draft we will seek your input.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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| **From:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Sent:** | Tue Apr 30 2019 12:22:18 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Subject:** | Re: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |

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## "Cassler, Constance" <constance_cassler@fws.gov>

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| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Tue Apr 30 2019 12:24:32 GMT-0600 (MDT) |
| **To:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Subject:** | Re: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |

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| **From:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Sent:** | Tue Apr 30 2019 12:28:29 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Subject:** | Re: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |

No worries! I know you have a lot going on. It's simple enough for me to forward a message to Rick if I see he's not CC'd on it. --Tim

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--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
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Mobile: (413) 800-2071

## Victoria Menchaca <VictoriaMenchaca@semtribe.com>

| | |
|---|---|
| **From:** | Victoria Menchaca <VictoriaMenchaca@semtribe.com> |
| **Sent:** | Wed May 01 2019 07:36:33 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Kenneth Mcdonald <kenneth_mcdonald@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov> |
| **Subject:** | RE: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |

Good Morning,

I just wanted to let you know that we have discussed the HCP further here internally and we will be sending more formal comments as soon as we can gather additional information from the community on important areas around Immokalee.

Thanks,

Victoria Menchaca, M.A.
Compliance Review Specialist
Seminole Tribe of Florida
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440
Tel: 863-983-6549 Ext: 12216
Email: victoriamenchaca@semtribe.com

---

**From:** Victoria Menchaca
**Sent:** Tuesday, April 30, 2019 11:32 AM
**To:** Cassler, Constance
**Cc:** Timothy Binzen; Kevin Palmer; Charles Kelso; Kenneth Mcdonald; Roxanna Hinzman; David Dell
**Subject:** RE: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area

Hi Constance,

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Thank you ,

Victoria

---

**From:** Cassler, Constance [mailto:constance_cassler@fws.gov]
**Sent:** Tuesday, April 23, 2019 3:44 PM
**To:** Victoria Menchaca
**Cc:** Timothy Binzen; Kevin Palmer; Charles Kelso; Kenneth Mcdonald; Roxanna Hinzman; David Dell
**Subject:** Re: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area

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Connie

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On Tue, Apr 23, 2019 at 3:03 PM Victoria Menchaca <VictoriaMenchaca@semtribe.com> wrote:

> Hi Connie,
>
> Thank you for providing this information. I apologize for the delay in getting back to you about our areas of concern. I have identified the location of at least one area of concern for us that is not in the report and I am currently working with our GIS section and the shapefiles that were sent to us to evaluate the rest of the area. Unfortunately, they are out of the office this week so it may not be until the end of next week that we can say for sure if there are other areas of concern or not.
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> Sincerely,
>
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> Clewiston, FL 33440
> Tel: 863-983-6549 Ext: 12216
> Email: victoriamenchaca@semtribe.com
>
> ---
>
> **From:** Cassler, Constance [mailto:constance_cassler@fws.gov]
> **Sent:** Monday, April 08, 2019 9:27 AM
> **To:** Victoria Menchaca
> **Cc:** Timothy Binzen; Kevin Palmer; Charles Kelso; Kenneth Mcdonald; Roxanna Hinzman; David Dell
> **Subject:** Locations of cultural resources we know about in the E. Collier Multi-species HCP area
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## "Cassler, Constance" <constance_cassler@fws.gov>

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|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Wed May 01 2019 08:27:16 GMT-0600 (MDT) |
| **To:** | Victoria Menchaca <VictoriaMenchaca@semtribe.com> |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Kenneth Mcdonald <kenneth_mcdonald@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov>, Richard Kanaski <richard_kanaski@fws.gov> |
| **Subject:** | Re: [EXTERNAL] RE: Locations of cultural resources we know about in the E. Collier Multi-species HCP area |

Thank you Victoria. We look forward to the Seminole Tribe of Florida's letter.

Connie

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**Table 3.4-1. National Ambient Air Quality Standards and Design Values**

| Pollutant | Averaging Time | Level | Form | 2017 Pollutant Concentration | | | |
|---|---|---|---|---|---|---|---|
| | | | | Collier | Lee | Broward | Miami-Dade |
| Sulfur Dioxide ($SO_2$) | 1-hour | 75 ppb[4] | 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years | -- | -- | 1.0 | -- |
| | 3-hour | 0.5 ppm | Not to be exceeded more than once per year | No exceedances | | | |

ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per square meter
Sources: U.S. Environmental Protection Agency (USEPA) 2017c, USEPA 2017d, USEPA 2017e, USEPA 2017f.
Notes:
[1] In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu g/m^3$ as a calendar quarter average) also remain in effect.
[2] The level of the annual $NO_2$ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
[3] Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) $O_3$ standards additionally remain in effect in some areas. Revocation of the previous (2008) $O_3$ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
[4] The previous $SO_2$ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous $SO_2$ standards or is not meeting the requirements of a State Implementation Plan call under the previous $SO_2$ standards (40 Code of Federal Regulations 50.4(3)).

Collier County is part of the Naples-Immokalee-Marco Island, FL Metropolitan Statistical Area (USCB 2013). The CSA meets applicable federal and state air quality standards. Therefore, the Proposed Action would be located in a region with good air quality (USEPA 2017g).

The General Conformity regulations required under Section 176(c) of the CAA (42 USC Section 7506) and codified at 40 CFR Part 93 mandate that a federal agency undertaking, approving, funding, or otherwise supporting any action in areas violating the NAAQS must first prove that undertaking the action does not exacerbate existing violations of the NAAQS, cause new violations, or interfere with an established plan to improve or maintain air quality. The ECMSHCP area and surrounding areas are in compliance with all NAAQS; therefore, the General Conformity regulations of the CAA do not apply to the proposed project.

Fire is a natural occurrence within and around the ECMSHCP area, and many native vegetation communities are adapted to fire. In addition, prescribed fire is included in the covered activities for the ECMSHCP because it will be used for land management. Smoke and ash from wildfires, agricultural burns and prescribed fires temporarily affect air quality in the ECMSHCP area.

## 3.5 CULTURAL RESOURCES

For the purposes of cultural resources consultation, the Area of Potential Effect (APE) (defined per Section 106 of the NHPA) is defined as the ECMSHCP area. As ECPO members prepare individual project proposals consistent with the ECMSHCP, they will consult with the Florida State Historic Preservation Officer (SHPO) in accordance with state requirements. Conservation of any identified cultural resources that might be affected by an individual project would be implemented in accordance with state requirements.

### 3.5.1 Cultural Resource Setting

According to Floridahistory.org, Paleo-Indians inhabited Florida from about 12,000 years before Christ (BC) to about 7,500 years BC They were nomadic hunters that followed game animals. From 7,500 BC to 1,500 years anno Domini (AD) Native Americans became better at gathering food and tended to remain in an area for a longer period of time. The relied on bays and streams for fishing in the winter. They also developed pottery and farming, and participated in commerce with other Indian tribes outside

Florida. The Calusa, who dominated southwest Florida, were known to be good hunters and fishermen, and were also known for their sailing ability. As Europeans began to settle Florida in the 16th century, they relied on the same resources. Therefore, the most likely locations for cultural and historic resources are near waterways that provide fish and other aquatic animals for food, are frequented by terrestrial wildlife that can be hunted, and that can be used to travel to other locations. Because some Native Americans created large piles of discarded shells, these "hills" in a mostly low-elevation landscape can also indicate important areas.

### 3.5.2 Previous Surveys

A cultural resources analysis was conducted to identify the presence of previously recorded archaeological sites and historic resources within the ECMSHCP area that are listed in or eligible for listing in the National Register of Historic Places (NRHP) according to the criteria set forth in 36 CFR Section 60.4, and resources with confirmed or potential human remains. The methods used included a review of the Florida Master Site File (FMSF) GIS database, electronic copies of unpublished manuscripts, previous surveys that included portions of the ECMSHCP area, and FMSF resource forms. The results of this analysis are summarized in this section.

There have been 21 cultural resource studies conducted that have intersected with some portion of the APE (Figure 3.5-1). The majority of these (n=17) have been Cultural Resource Assessment Surveys (CRAS). The remainder of the surveys included one historical/architectural survey of Collier County as a whole, one reconnaissance review for a proposed cellular tower, one radar survey near Lake Trafford for a critical restoration project, and one survey that focused on a littoral area at the same lake. Table 3.5-1 provides a listing of these surveys, which were conducted between 1986 and 2017. The county-wide survey, as well as the earlier survey, may not meet the current state or federal standards for a cultural resource assessment survey.

**Table 3.5-1. Previously Conducted Surveys that Intersect the Project Area of Potential Effect**

| Survey # | Title | Author(s) | Date |
|---|---|---|---|
| 1108 | Historical/architectural survey of Collier County, Florida | Florida Preservation Services | 1986 |
| 8141 | An Archaeological and Historical Survey of the Proposed DT Immokalee Tower Location in Collier County, Florida | Batategas, Juliet T. | 2001 |
| 9082 | Cultural Resource Reconnaissance Survey/ Section 106 Review Proposed Thorpe Road Cellular Tower (#10030116D) Thorpe Road, La Belle, Hendry County, Florida | Archaeological Consultants, Inc. | 2003 |
| 9879 | Cultural Resource Assessment Survey, Ave Maria Preliminary Development Agreement (PDA) Property, Collier County, Florida | Archaeological Consultants, Inc. | 2004 |
| 10354 | A Cultural Resource Assessment Survey, Ave Maria Development of Regional Impact (DRI) Property; Addendum to Cultural Resources Assessment Survey (CRAS) Ave Maria PDA Property, Collier County, Florida | Archaeological Consultants, Inc. | 2004 |
| 11014 | Cultural Resource Assessment Survey of the FPL Collier-Orange River # 3 230 KV Transmission Line: Segments A, C, and F Collier and Lee Counties | Janus Research | 2005 |
| 11715 | Cultural Resource Assessment Survey of the FPL Collier-Orange River # 3, 230 KV Transmission Line: Segment D, Collier County | Janus Research | 2005 |
| 12898 | Cultural Resource Assessment Survey of the Serenoa DRI Project Area, Collier County | Janus Research | 2006 |
| 13684 | Cultural Resource Assessment Survey Hogan Island Quarry, Collier County, Florida | Archaeological Consultants, Inc. | 2006 |
| 14027 | An Addendum to the Cultural Resource Predictive Model Collier Enterprises, LTD. The Tradeport DRI, Collier County, Florida | Archaeological Consultants, Inc. | 2007 |

**Table 3.5-1. Previously Conducted Surveys that Intersect the Project Area of Potential Effect**

| Survey # | Title | Author(s) | Date |
|---|---|---|---|
| 14434 | An Addendum to the Cultural Resource Predictive Model Collier Enterprises, LTD. Big Cypress Stewardship District, Collier County, Florida | Archaeological Consultants, Inc. | 2007 |
| 14587 | Lake Trafford Critical Restoration Project - Aquascan Radar Survey Report | Art Engineering, LLC | 2004 |
| 14907 | Cultural Resource Assessment Survey of S R 82 from Lee Boulevard to SR 29 Lee, Hendry and Collier Counties | Janus Research | 2007 |
| 15050 | Littoral Survey of Lake Trafford, Collier County | Hoffman, Kathleen S. | 2008 |
| 16431 | A Phase I Cultural Resource Assessment of the Alico Parcel, Collier County, Florida | Beriault, John G., Matthew Betz, and Robert S. Carr | 2008 |
| 16907 | Cultural Resource Assessment Survey Project Development and Environment (PD&E) Study SR 29 from North of SR 82 to south of CR 80A Collier and Hendry Counties, Florida | Archaeological Consultants, Inc. | 2009 |
| 20872 | Cultural Resource Assessment Survey Lee County Electric Cooperative (LCEC) SR 82 and SR 29 Distribution Line Replacement, Collier County, Florida | Archaeological Consultants, Inc. | 2014 |
| 21923 | Cultural Resource Assessment Survey Technical Memorandum Addendum Preferred Stormwater Treatment Areas, SR 82 from Gator Slough Lane to SR 29, Collier County, Florida. Financial Project ID No.: 430849-1-52-01 | Archaeological Consultants, Inc. | 2015 |
| 22651 | Treatment of Cultural Resources Related to 3D Seismic Survey for Hendry Energy Services, Inc. in Hendry and Collier Counties, Florida | Miller, James J. and L. Ross Morrell | 2014 |
| 23218 | Cultural Resource Assessment Survey Tocala-Sunniland 3D Seismic Survey Project Collier and Hendry Counties, Florida | Archaeological Consultants, Inc. | 2016 |
| 24480 | Cultural Resource Assessment Survey Technical Memorandum, Preferred Ponds, Drainage Easements, and Right-of-Way, SR 82 from the Hendry County Line to Gator Slough Lane, Collier County, Florida, Financial Project ID No.: 430848-1-52-01 | Archaeological Consultants, Inc. | 2017 |

### 3.5.3 Previously Recorded Archaeological Sites

A search of the FMSF data identified 32 previously recorded archaeological sites within the ECMSHCP area, as shown in Table 3.5-2 and on Figure 3.5-2. These include 10 sites associated with the Seminole Wars that took place between 1817 and 1858, 18 precontact middens, three precontact mounds, and one collection of precontact canoes associated with Lake Trafford.

The 10 sites from the Seminole Wars period include 8 forts: Fort Simon Drum (8CR78), Fort Doane (8CR660), Fort Keais (8CR669), Fort Loomis (8CR1075), Fort Keais 2nd and 3rd Seminole War (8CR1079), Fort Kneas (8CR1080), Fort Doane 3rd Seminole War (8CR1078), and Fort Doane 2nd Seminole War (8CR1081), in addition to one campsite (Camp Near Depot No. 1 [8CR1076], and one supply depot (Depot No. 1 [8CR1077]). With the exception of 8CR78 (Fort Simon Drum), the locations of the sites associated with the Seminole Wars are uncertain and are based primarily on historical records. The exact locations of these sites have not been identified through archaeological investigations and their NRHP eligibility has not been evaluated.

In the 1940s, a survey marker was placed at the location of 8CR78 (Fort Simon Drum) and the original FMSF form notes the presence of a precontact component consisting of a black dirt midden. Limited archaeological investigations conducted at the site in 2016 identified subsurface evidence suggestive of walls, as well as 19th century artifacts. This site was determined to be NRHP eligible by the SHPO in 2016.

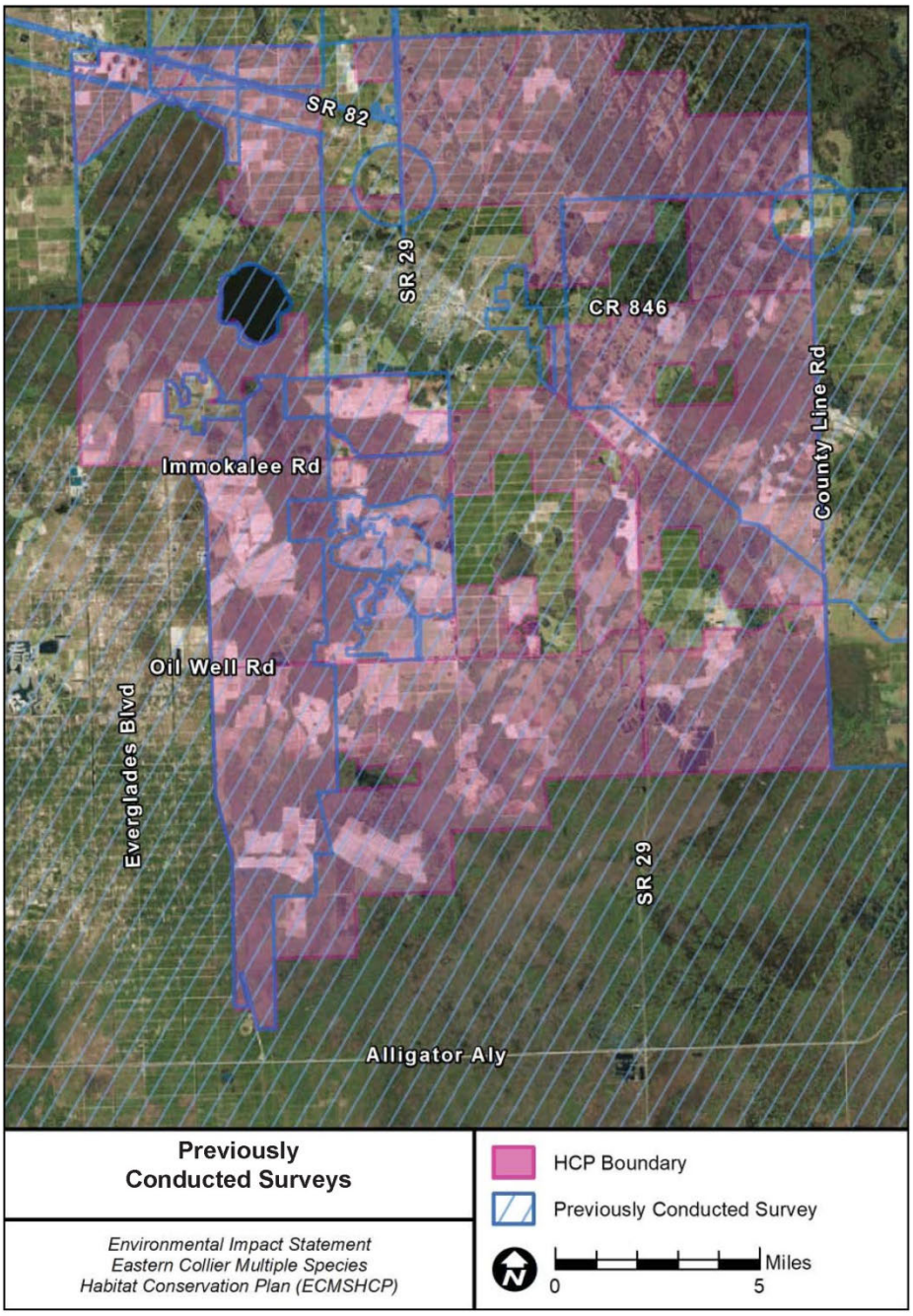


**Figure 3.5-1. Previously Conducted Surveys**

The majority of the 18 precontact midden sites (n=15) documented in the vicinity are small campsites recorded during a recent survey (ACI 2016). This group of sites (8CR1438-8CR1442 and 8CR1444-8CR1453) represents three general periods of occupation: Prehistoric-aceramic, Glades, and Late Archaic; it should be noted, however, that at least some of the aceramic sites may represent Late Archaic occupation (Janus 2008). Many of these campsites, primarily the ones containing only faunal bone, are very small (i.e., 25 meters in diameter or less). Of this group of 15 campsite middens, 6 have been determined NRHP ineligible, while the remaining 9 require additional testing to evaluate their eligibility status (Table 3.5-2).

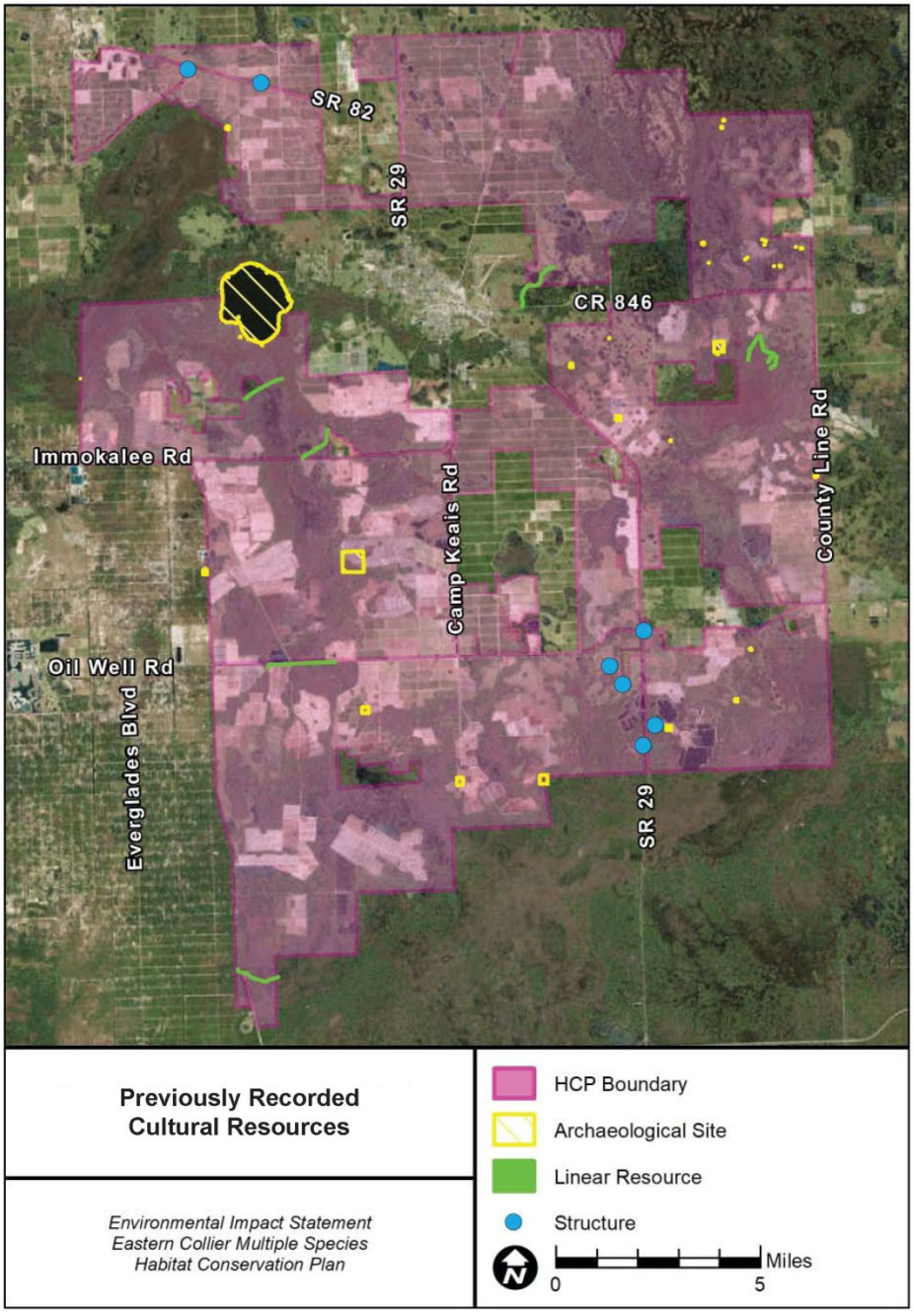


**Figure 3.5-2. Previously Recorded Cultural Resources**

**Table 3.5-2. Previously Recorded Archaeological Sites within the East Collier Multiple Species Habitat Conservation Plan Area**

| Florida Master Site File (FMSF) # | Site Name | Site Type | National Register of Historic Places Evaluation* |
|---|---|---|---|
| 8CR78 | Fort Simon Drum | Seminole Wars period fort and pre-Columbian midden | Eligible |
| 8CR86 | Mound Crossing | Precontact sand mound | Not Evaluated |
| 8CR563 | Carlson's Caprock | Precontact midden and 20th century campsite | Not Evaluated |
| 8CR660 | Fort Doane | Seminole Wars period fort | Not Evaluated |
| 8CR669 | Fort Keais | Seminole Wars period fort | Not Evaluated |
| 8CR859 | Scofield Mound 1 | Precontact campsite and mound | Not Evaluated |
| 8CR860 | Scofield Mound 2 | Precontact mound | Not Evaluated |
| 8CR1065 | Lake Trafford Canoes | Precontact canoes | Not Evaluated |
| 8CR1066 | Lake Trafford | Precontact campsite and midden | Not Evaluated |
| 8CR1073 | Handfern Hammock | Precontact campsite and procurement site | Ineligible |
| 8CR1075 | Fort Loomis | Seminole Wars period fort | Not Evaluated |
| 8CR1076 | Camp Near Depot No. 1 | Seminole Wars period campsite | Not Evaluated |
| 8CR1077 | Depot No. 1 | Seminole Wars period depot | Not Evaluated |
| 8CR1078 | Fort Doane 3rd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1079 | Fort Keais 2nd and 3rd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1080 | Fort Kneas | Seminole Wars period fort | Not Evaluated |
| 8CR1081 | Fort Doane 2nd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1438 | Corridor Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1439 | Walsh Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1440 | Fenno Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1441 | Okaloacoochee Slough Hammock 1 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1442 | Walker Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1444 | Nash Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1445 | Gumbo Limbo Island Hammock 1 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1446 | Gumbo Limbo Island Hammock 2 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1447 | Gumbo Limbo Island Hammock 3 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1448 | Okaloacoochie Point | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1449 | Oak Point Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1450 | Ho Ho Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1451 | Gladys Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1452 | Godmother Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1453 | Contested Convention Hammock | Precontact campsite, extractive site, and midden | Ineligible |

* As recorded in the FMSF; may require re-evaluation

The remaining precontact midden sites include Handfern Hammock (CR1073), the Lake Trafford site (8CR1066), and Carlson's Caprock (8CR563). Site 8CR1073 consists of a single freshwater snail shell and one sand-tempered plain sherd located on a slightly elevated oak hammock on the edge of Corkscrew Swamp. Although recorded as locally significant, the site was determined to be NRHP ineligible in 2009 by the SHPO. The Lake Trafford site (8CR1066) is a precontact campsite midden that has not been evaluated. Site 8CR563 was recorded as a multi-component site consisting of a precontact midden with faunal bones, shell, and a historic campsite dating between 1920 and 1950. The site was identified on the ground surface during a pedestrian survey, and its NRHP eligibility has not been evaluated.

The three precontact mounds include Scofield Mound 1 (8CR859), Scofield Mound 2 (8CR860), and Mound Crossing (8CR86). Both 8CR859 and 8CR860 were identified based on an informant report and brief site visits. No investigations have been conducted at these mounds, which may date from approximately 1000 BC to AD 750. Site 8CR86 is recorded as a sand mound with an unspecified precontact period origin; it was recorded based on a verbal description by an informant and its exact location is unknown. The NRHP eligibility of these three mound sites has not been evaluated.

The site associated with Lake Trafford includes a collection of canoes and canoe fragments recorded as 8CR1065 (Lake Trafford Canoes). They are located within and along the edges of the lake. Several pieces of canoe, including segments of the hull, as well as bow and stern sections of a vessel, are recorded within the ECMSHCP area, and their approximate locations are shown on Figure 3.5-2. Radiocarbon dates indicate that the canoes and canoe remnants date from A.D. 600 to AD 1200. The NRHP eligibility of this collection of canoes has not been evaluated.

### 3.5.4 Previously Recorded Historic Resources

The FMSF review identified 13 previously recorded historic resources, including 6 linear resources (8CR965–8CR969 and 8CR1406) and 7 historic structures (8CR668, 8CR670–8CR673, and 8CR1494-8CR1495). These resources are listed in Table 3.5-3 and shown on Figure 3.5-2. There are no resources currently listed in the NRHP.

The six linear resources consist of segments of three historic trams (Collier Enterprise Tram [8CR965], Big Corkscrew Island Tram [8CR968], and Tram Lines [8CR1406]), in addition to portions of three historic trails (Stumpy Strand Island [8CR966], Old Immokalee Naples Road [8CR967], and Tradeport Trail [8CR969]). All that remains of the trams are the grades and one remnant of a wooden bridge associated with the Collier Enterprise Tram (8CR965). All of the trams and trails were constructed in the 1950s. The SHPO noted that there is insufficient information to determine the NRHP eligibility for most of these linear resource segments, although 8CR1406 has been determined NRHP ineligible.

The seven previously recorded historic structures include cattle pens (8CR668) constructed circa 1945, one capped oil well (8CR670), and five 20th century Frame Vernacular buildings (8CR671-8CR673 and 8CR1494-8CR1495) with nonspecific dates of construction (Table 3.5-3). Two of the Frame Vernacular structures are associated with the Humble Oil Company, who established the first oil field (Sunniland) in Florida in the 1940s. These Humble Oil Company resources include one Frame Vernacular commissary (8CR672) and one Frame Vernacular office building (8CR673). A second commissary (8CR671) was associated with the Collier Corporation. The SHPO has not evaluated the NRHP eligibility of any of these resources. The remaining Frame Vernacular structures (8CR1494 and 8CR1495) date to the mid-1960s or later and have been judged NRHP ineligible.

**Table 3.5-3. Previously Recorded Historic Resources within the East Collier Multiple Species Habitat Conservation Plan Area**

| Florida Master Site File (FMSF) # | Name / Address | Resource Type/Style | Year Built | SHPO National Register of Historic Places Evaluation* |
|---|---|---|---|---|
| 8CR668 | Cowpens | Cattle pens | Unknown | Not Evaluated |
| 8CR670 | Sunniland Field #12 | Capped oil well | c1942 | Not Evaluated |

**Table 3.5-3. Previously Recorded Historic Resources within the East Collier Multiple Species Habitat Conservation Plan Area**

| Florida Master Site File (FMSF) # | Name / Address | Resource Type/Style | Year Built | SHPO National Register of Historic Places Evaluation* |
|---|---|---|---|---|
| 8CR671 | Collier Corporation Commissary | Frame Vernacular building | Unknown | Not Evaluated |
| 8CR672 | Sunniland Commissary | Frame Vernacular building | c1943 or earlier | Not Evaluated |
| 8CR673 | Sunniland Office | Frame Vernacular building | c1943 | Not Evaluated |
| 8CR965 | Collier Enterprise Tram | Linear resource segment; Historic tram trade segment and wooden bridge | Post-1950 | Insufficient Information |
| 8CR966 | Stumpy Strand Island | Linear resource segment | Post-1950 | Insufficient Information |
| 8CR967 | Old Immokalee Naples Road | Linear resource segment | Post-1950 | Insufficient Information |
| 8CR968 | Big Corkscrew Island Tram | Linear resource segment | Post-1950s | Insufficient Information |
| 8CR969 | Tradeport Trail | Linear resource segment | 1940s–1950s | Not evaluated in APE; adjacent segment is ineligible |
| 8CR1406 | Tram Lines | Linear resource segment | Post-1950 | Ineligible |
| 8CR1494 | 5086 Corkscrew Road | Frame Vernacular building | 1964 or later | Ineligible |
| 8CR1495 | 6081 SR 82 | Frame Vernacular building | 1965 or later | Ineligible |

* As recorded in the FMSF; may require re-evaluation

## 3.6 VISUAL RESOURCES

Active agriculture (including cultivated crops, citrus, sod, pastures, and specialty crops) comprises approximately 50 percent of the HCP Area. Native wetlands account for approximately 38 percent of the total HCP Area, and are split roughly evenly between forested and non-forested (mainly herbaceous) wetland systems. Native uplands comprise 9 percent of the HCP Area, with forested uplands comprising over 88 percent of native uplands. Over 92 percent of the total native vegetation acreage within the HCP Area occurs within land designations slated for protection. Open water, consisting of major canals, and small lakes/ponds total 1,245 acres, or 1 percent of the HCP Area (Lake Trafford is not included within the HCP Area). Approximately 1 percent of the HCP Area consists of existing development, primarily the Town of Ave Maria.

## 3.7 SOCIOECONOMIC RESOURCES AND ENVIRONMENTAL JUSTICE

Socioeconomic resources are those that combine economic resources and social resources. Some think of these resources in terms of quality of life. A number of factors are incorporated into quality of life, including: (1) availability of good-paying jobs; (2) access to critical services, such as education and health care; (3) strong communities; and (4) a healthy natural environment (USFWS and Montana Department of Natural Resources 2010).

Environmental justice is the unbiased treatment and meaningful participation of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, programs, and policies (USFWS and Montana Department of Natural Resources 2010).

The HCP area only includes private lands whose landowners want to develop their land in a way that meets their economic goals while streamlining their regulatory requirements and assisting with the conservation of numerous species. Since this HCP does not include public lands or change regulations

**Table 3.4-1. National Ambient Air Quality Standards and Design Values**

| Pollutant | Averaging Time | Level | Form | 2017 Pollutant Concentration | | | |
|---|---|---|---|---|---|---|---|
| | | | | Collier | Lee | Broward | Miami-Dade |
| Sulfur Dioxide ($SO_2$) | 1-hour | 75 ppb[4] | 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years | -- | -- | 1.0 | -- |
| | 3-hour | 0.5 ppm | Not to be exceeded more than once per year | No exceedances | | | |

ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per square meter
Sources: USEPA 2017c, USEPA 2017d, USEPA 2017e, USEPA 2017f.
Notes:
[1] In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu g/m^3$ as a calendar quarter average) also remain in effect.
[2] The level of the annual $NO_2$ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
[3] Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) $O_3$ standards additionally remain in effect in some areas. Revocation of the previous (2008) $O_3$ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
[4] The previous $SO_2$ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous $SO_2$ standards or is not meeting the requirements of a SIP call under the previous $SO_2$ standards (40 CFR 50.4(3)).

Collier County is part of the Naples-Immokalee-Marco Island, FL Metropolitan Statistical Area (USCB 2013). The CSA meets applicable federal and state air quality standards. Therefore, the Proposed Action would be located in a region with good air quality (USEPA 2017g).

The General Conformity regulations required under Section 176(c) of the CAA (42 USC Section 7506) and codified at 40 CFR Part 93 mandate that a federal agency undertaking, approving, funding, or otherwise supporting any action in areas violating the NAAQS must first prove that undertaking the action does not exacerbate existing violations of the NAAQS, cause new violations, or interfere with an established plan to improve or maintain air quality. The proposed project site and surrounding area are in compliance with all NAAQS; therefore, the General Conformity regulations of the CAA do not apply to the proposed project and Air Quality is not addressed further in the document.[insert additional language from USFWS regarding air quality here]

## 3.5 CULTURAL RESOURCES

This section describes the cultural resource setting of the ECMSHCP area, including applicable cultural resource regulations. The ECMSHCP area is located in the northeastern corner of Collier County, and surrounds the unincorporated area of Immokalee. It is within the approximately 195,000-acre area covered by Collier County's RLSP, a voluntary program that allows participants to develop certain lands at densities higher than base zoning allows, in exchange for placing restrictions on the use of other lands within the RLSA. For the purposes of cultural resources consultation, the Area of Potential Effect (APE) is defined as the ECMSHCP Area.

### 3.5.1 Cultural Resource Setting

The ECMSHCP area was mapped in detail in 1999-2000, as part of the design process for the RLSP (WilsonMiller 2000). Active agriculture comprises approximately 50 percent of the ECMSHCP area. Native wetlands account for approximately 39 percent of the total area, and are split almost evenly between forested and non-forested (mainly herbaceous) wetland systems. Native uplands comprise 9 percent of the ECMSHCP area, with forested uplands comprising over 88 percent of native uplands. Over 92 percent of the total native vegetation acreage within the ECMSHCP area occurs within land designations slated for protection. Open water, consisting of major canals and small lakes/ponds total 1,245 acres, or 1 percent of the ECMSHCP area, and approximately 1 percent consists of existing

development. The remaining land uses, including exotic vegetation removal, earth mining, roadways, power transmission lines, and oil and gas facilities, comprise approximately 1 percent of the total ECMSHCP area.

### 3.5.2 Previous Surveys

A cultural resources analysis was conducted to identify the presence of previously recorded archaeological sites and historic resources within the study area that are listed in or eligible for listing in the National Register of Historic Places (National Register) according to the criteria set forth in 36 CFR Section 60.4, and resources with confirmed or potential human remains. The methods used included a review of the Florida Master Site File (FMSF) GIS database, electronic copies of unpublished manuscripts, previous surveys that included portions of the project area, and FMSF resource forms. The results of this analysis are summarized in this section.

There have been 21 cultural resource studies conducted that have intersected with some portion of the APE (Figure 3.5-1). The majority of these (n=17) have been cultural resource assessment surveys (CRAS). The remainder of the surveys included one historical/architectural survey of Collier County as a whole, one reconnaissance review for a proposed cellular tower, one radar survey near Lake Trafford for a critical restoration project, and one survey that focused on a littoral area at the same lake. Table 3.5-1 provides a listing of these surveys, which were conducted between 1986 and 2017. The county-wide survey, as well as the earlier survey, may not meet the current state or federal standards for a cultural resource assessment survey.

**Table 3.5-1. Previously Conducted Surveys that Intersect the Project APE**

| Survey # | Title | Author(s) | Date |
|---|---|---|---|
| 1108 | Historical/architectural survey of Collier County, Florida | Florida Preservation Services | 1986 |
| 8141 | An Archaeological and Historical Survey of the Proposed DT Immokalee Tower Location in Collier County, Florida | Batategas, Juliet T. | 2001 |
| 9082 | Cultural Resource Reconnaissance Survey/ Section 106 Review Proposed Thorpe Road Cellular Tower (#10030116D) Thorpe Road, La Belle, Hendry County, Florida | Archaeological Consultants, Inc. | 2003 |
| 9879 | Cultural Resource Assessment Survey, Ave Maria Preliminary Development Agreement (PDA) Property, Collier County, Florida | Archaeological Consultants, Inc. | 2004 |
| 10354 | A Cultural Resource Assessment Survey, Ave Maria Development of Regional Impact (DRI) Property; Addendum to CRAS Ave Maria PDA Property, Collier County, Florida | Archaeological Consultants, Inc. | 2004 |
| 11014 | Cultural Resource Assessment Survey of the FPL Collier-Orange River # 3 230 KV Transmission Line: Segments A, C, and F Collier and Lee Counties | Janus Research | 2005 |
| 11715 | Cultural Resource Assessment Survey of the FPL Collier-Orange River # 3, 230 KV Transmission Line: Segment D, Collier County | Janus Research | 2005 |
| 12898 | Cultural Resource Assessment Survey of the Serenoa DRI Project Area, Collier County | Janus Research | 2006 |
| 13684 | Cultural Resource Assessment Survey Hogan Island Quarry, Collier County, Florida | Archaeological Consultants, Inc. | 2006 |
| 14027 | An Addendum to the Cultural Resource Predictive Model Collier Enterprises, LTD. The Tradeport DRI, Collier County, Florida | Archaeological Consultants, Inc. | 2007 |
| 14434 | An Addendum to the Cultural Resource Predictive Model Collier Enterprises, LTD. Big Cypress Stewardship District, Collier County, Florida | Archaeological Consultants, Inc. | 2007 |
| 14587 | Lake Trafford Critical Restoration Project - Aquascan Radar Survey Report | Art Engineering, LLC | 2004 |

**Table 3.5-1. Previously Conducted Surveys that Intersect the Project APE**

| Survey # | Title | Author(s) | Date |
|---|---|---|---|
| 14907 | Cultural Resource Assessment Survey of State Road 82 from Lee Boulevard to State Road 29 Lee, Hendry and Collier Counties | Janus Research | 2007 |
| 15050 | Littoral Survey of Lake Trafford, Collier County | Hoffman, Kathleen S. | 2008 |
| 16431 | A Phase I Cultural Resource Assessment of the Alico Parcel, Collier County, Florida | Beriault, John G., Matthew Betz, and Robert S. Carr | 2008 |
| 16907 | Cultural Resource Assessment Survey Project Development and Environment (PD&E) Study S.R. 29 from North of S.R. 82 to south of C.R. 80A Collier and Hendry Counties, Florida | Archaeological Consultants, Inc. | 2009 |
| 20872 | Cultural Resource Assessment Survey Lee County Electric Cooperative (LCEC) SR 82 and SR 29 Distribution Line Replacement, Collier County, Florida | Archaeological Consultants, Inc. | 2014 |
| 21923 | Cultural Resource Assessment Survey Technical Memorandum Addendum Preferred Stormwater Treatment Areas, State Road (SR) 82 from Gator Slough Lane to SR 29, Collier County, Florida. Financial Project ID No.: 430849-1-52-01 | Archaeological Consultants, Inc. | 2015 |
| 22651 | Treatment of Cultural Resources Related to 3D Seismic Survey for Hendry Energy Services, Inc. in Hendry and Collier Counties, Florida | Miller, James J. and L. Ross Morrell | 2014 |
| 23218 | Cultural Resource Assessment Survey Tocala-Sunniland 3D Seismic Survey Project Collier and Hendry Counties, Florida | Archaeological Consultants, Inc. | 2016 |
| 24480 | Cultural Resource Assessment Survey Technical Memorandum, Preferred Ponds, Drainage Easements, and Right-of-Way, SR 82 from the Hendry County Line to Gator Slough Lane, Collier County, Florida, Financial Project ID No.: 430848-1-52-01 | Archaeological Consultants, Inc. | 2017 |

### 3.5.3 Previously Recorded Archaeological Sites

A search of the FMSF data identified 32 previously recorded archaeological sites within the study area, as shown in Table 3.5-2 and on Figure 3.5-2. These include 10 sites associated with the Seminole Wars that took place between 1817 and 1858, 18 precontact middens, three precontact mounds, and one collection of precontact canoes associated with Lake Trafford.

The 10 sites from the Seminole Wars period include 8 forts: Fort Simon Drum (8CR78), Fort Doane (8CR660), Fort Keais (8CR669), Fort Loomis (8CR1075), Fort Keais 2nd and 3rd Seminole War (8CR1079), Fort Kneas (8CR1080), Fort Doane 3rd Seminole War (8CR1078), and Fort Doane 2nd Seminole War (8CR1081), in addition to one camp site (Camp Near Depot No. 1 [8CR1076], and one supply depot (Depot No. 1 [8CR1077]). With the exception of 8CR78 (Fort Simon Drum), the locations of the sites associated with the Seminole Wars are uncertain and are based primarily on historical records. The exact locations of these sites have not been identified through archaeological investigations and their National Register eligibility has not been evaluated.

In the 1940s, a survey marker was placed at the location of 8CR78 (Fort Simon Drum) and the original FMSF form notes the presence of a precontact component consisting of a black dirt midden. Limited archaeological investigations conducted at the site in 2016 identified subsurface evidence suggestive of walls, as well as 19th century artifacts. This site was determined National Register eligible by the State Historic Preservation Officer (SHPO) in 2016.

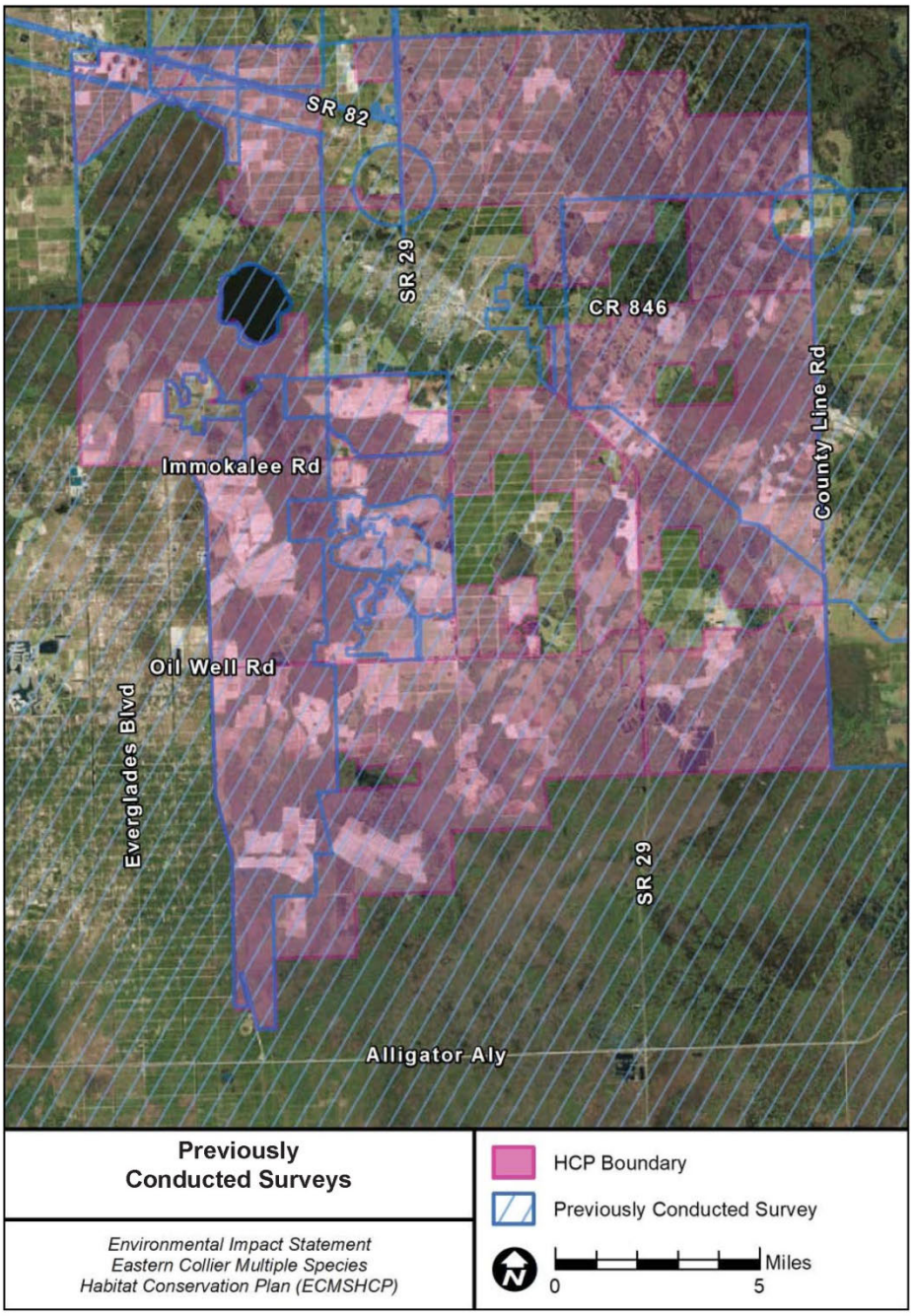


**Figure 3.5-1. Previously Conducted Surveys**

The majority of the 18 precontact midden sites (n=15) documented in the vicinity are small campsites recorded during a recent survey (ACI 2016). This group of sites (8CR1438-8CR1442 and 8CR1444-8CR1453) represents three general periods of occupation: Prehistoric-aceramic, Glades, and Late Archaic; it should be noted, however, that at least some of the aceramic sites may represent Late Archaic occupation (Janus 2008:17). Many of these campsites, primarily the ones containing only faunal bone, are very small (i.e., 25 meters in diameter or less). Of this group of 15 campsite middens, 6 have been determined National Register ineligible, while the remaining 9 require additional testing to evaluate their eligibility status (Table 3.5-2).

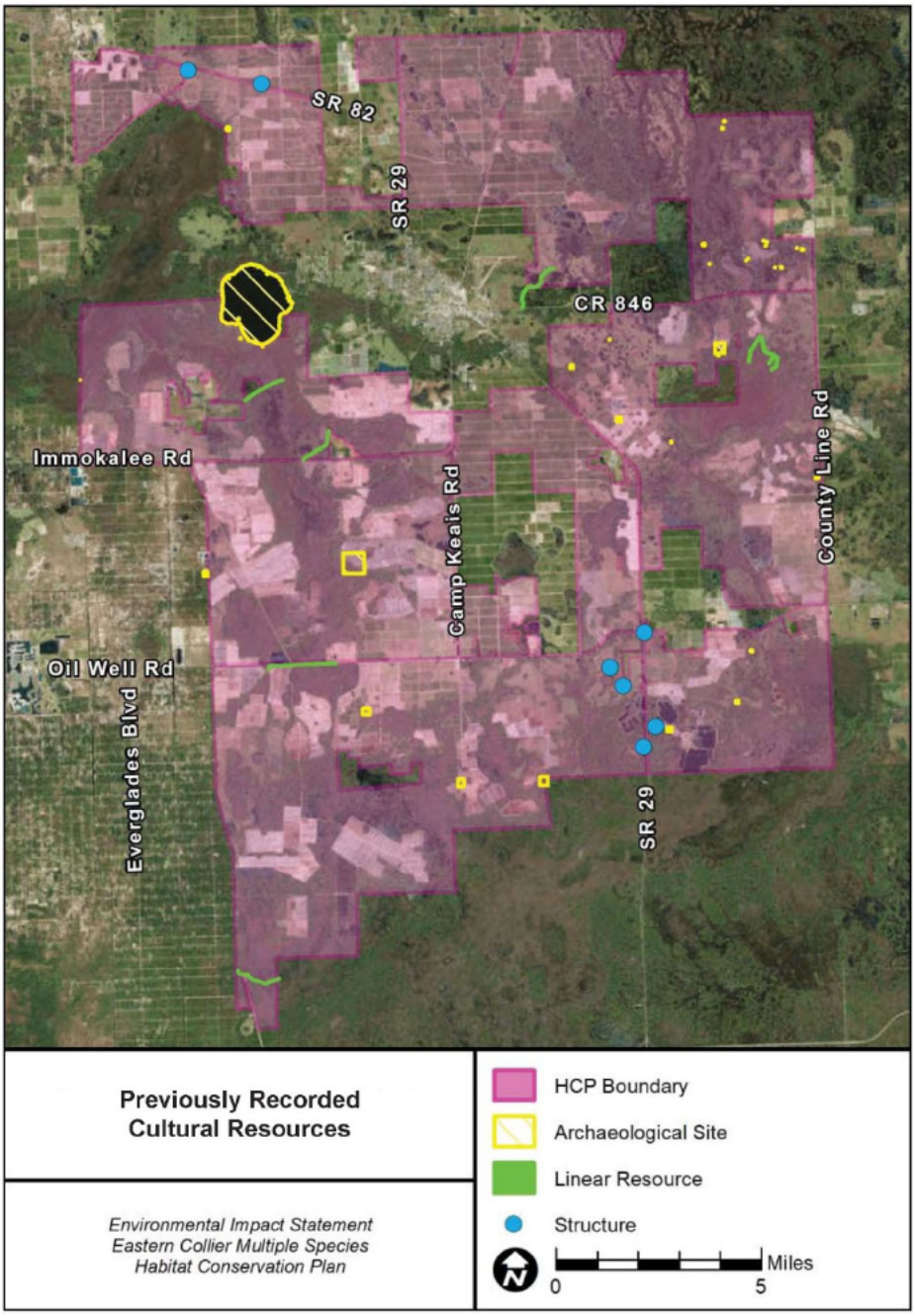


**Figure 3.5-2. Previously Recorded Cultural Resources**

**Table 3.5-2. Previously Recorded Archaeological Sites within the Study Area**

| FMSF | Site Name | Site Type | National Register Evaluation* |
|---|---|---|---|
| 8CR78 | Fort Simon Drum | Seminole Wars period fort and pre-Columbian midden | Eligible |
| 8CR86 | Mound Crossing | Precontact sand mound | Not Evaluated |
| 8CR563 | Carlson's Caprock | Precontact midden and 20th century campsite | Not Evaluated |

**Table 3.5-2. Previously Recorded Archaeological Sites within the Study Area**

| FMSF | Site Name | Site Type | National Register Evaluation* |
|---|---|---|---|
| 8CR660 | Fort Doane | Seminole Wars period fort | Not Evaluated |
| 8CR669 | Fort Keais | Seminole Wars period fort | Not Evaluated |
| 8CR859 | Scofield Mound 1 | Precontact campsite and mound | Not Evaluated |
| 8CR860 | Scofield Mound 2 | Precontact mound | Not Evaluated |
| 8CR1065 | Lake Trafford Canoes | Precontact canoes | Not Evaluated |
| 8CR1066 | Lake Trafford | Precontact campsite and midden | Not Evaluated |
| 8CR1073 | Handfern Hammock | Precontact campsite and procurement site | Ineligible |
| 8CR1075 | Fort Loomis | Seminole Wars period fort | Not Evaluated |
| 8CR1076 | Camp Near Depot No. 1 | Seminole Wars period campsite | Not Evaluated |
| 8CR1077 | Depot No. 1 | Seminole Wars period depot | Not Evaluated |
| 8CR1078 | Fort Doane 3rd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1079 | Fort Keais 2nd and 3rd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1080 | Fort Kneas | Seminole Wars period fort | Not Evaluated |
| 8CR1081 | Fort Doane 2nd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1438 | Corridor Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1439 | Walsh Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1440 | Fenno Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1441 | Okaloacoochee Slough Hammock 1 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1442 | Walker Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1444 | Nash Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1445 | Gumbo Limbo Island Hammock 1 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1446 | Gumbo Limbo Island Hammock 2 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1447 | Gumbo Limbo Island Hammock 3 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1448 | Okaloacoochie Point | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1449 | Oak Point Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1450 | Ho Ho Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1451 | Gladys Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1452 | Godmother Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1453 | Contested Convention Hammock | Precontact campsite, extractive site, and midden | Ineligible |

* As recorded in the FMSF; may require re-evaluation

The remaining precontact midden sites include Handfern Hammock (CR1073), the Lake Trafford site (8CR1066), and Carlson's Caprock (8CR563). Site 8CR1073 consists of a single freshwater snail shell and one sand-tempered plain sherd located on a slightly elevated oak hammock on the edge of Corkscrew Swamp. Although recorded as locally significant, the site was determined National Register ineligible in 2009 by the SHPO. The Lake Trafford site (8CR1066) is a precontact campsite midden that has not been evaluated. Site 8CR563 was recorded as a multi-component site consisting of a precontact midden with faunal bones, shell, and a historic campsite dating between 1920-1950. The site was

identified on the ground surface during a pedestrian survey, and its National Register eligibility has not been evaluated.

The three precontact mounds include Scofield Mound 1 (8CR859), Scofield Mound 2 (8CR860), and Mound Crossing (8CR86). Both 8CR859 and 8CR860 were identified based on an informant report and brief site visits. No investigations have been conducted at these mounds, which may date from approximately 1000 BC to AD 750. Site 8CR86 is recorded as a sand mound with an unspecified precontact period origin; it was recorded based on a verbal description by an informant and its exact location is unknown. The National Register eligibility of these three mound sites has not been evaluated.

The site associated with Lake Trafford includes a collection of canoes and canoe fragments recorded as 8CR1065 (Lake Trafford Canoes). They are located within and along the edges of the lake. Several pieces of canoe, including segments of the hull, as well as bow and stern sections of a vessel, are recorded within the study area, and their approximate locations are shown on Figure 3.5-2. Radiocarbon dates indicate that the canoes and canoe remnants date from A.D. 600 to AD 1200. The National Register eligibility of this collection of canoes has not been evaluated.

### 3.5.4 Previously Recorded Historic Resources

The FMSF review identified 13 previously recorded historic resources, including 6 linear resources (8CR965–8CR969 and 8CR1406) and 7 historic structures (8CR668, 8CR670–8CR673, and 8CR1494-8CR1495). These resources are listed in Table 3.5-3 and shown on Figure 3.5-2. There are no resources currently listed in the National Register.

The six linear resources consist of segments of three historic trams (Collier Enterprise Tram [8CR965], Big Corkscrew Island Tram [8CR968], and Tram Lines [8CR1406]), in addition to portions of three historic trails (Stumpy Strand Island [8CR966], Old Immokalee Naples Road [8CR967], and Tradeport Trail [8CR969]). All that remains of the trams are the grades and one remnant of a wooden bridge associated with the Collier Enterprise Tram (8CR965). All of the trams and trails were constructed in the 1950s. The SHPO noted that there is insufficient information to determine the National Register eligibility for most of these linear resource segments, although 8CR1406 has been determined National Register ineligible.

The seven previously recorded historic structures include cattle pens (8CR668) constructed circa 1945, one capped oil well (8CR670), and five 20th century Frame Vernacular buildings (8CR671-8CR673 and 8CR1494-8CR1495) with nonspecific dates of construction (Table 3.5-3). Two of the Frame Vernacular structures are associated with the Humble Oil Company, who established the first oil field (Sunniland) in Florida in the 1940s. These Humble Oil Company resources include one Frame Vernacular commissary (8CR672) and one Frame Vernacular office building (8CR673). A second commissary (8CR671) was associated with the Collier Corporation. The SHPO has not evaluated the National Register eligibility of any of these resources. The remaining Frame Vernacular structures (8CR1494 and 8CR1495) date to the mid-1960s or later and have been judged National Register ineligible.

**Table 3.5-3. Previously Recorded Historic Resources within the Study Area**

| FMSF # | Name / Address | Resource Type/Style | Year Built | SHPO National Register Evaluation* |
|---|---|---|---|---|
| 8CR668 | Cowpens | Cattle pens | Unknown | Not Evaluated |
| 8CR670 | Sunniland Field #12 | Capped oil well | c1942 | Not Evaluated |
| 8CR671 | Collier Corporation Commissary | Frame Vernacular building | Unknown | Not Evaluated |
| 8CR672 | Sunniland Commissary | Frame Vernacular building | c1943 or earlier | Not Evaluated |
| 8CR673 | Sunniland Office | Frame Vernacular building | c1943 | Not Evaluated |
| 8CR965 | Collier Enterprise Tram | Linear resource segment; Historic tram trade segment and wooden bridge | Post-1950 | Insufficient Information |
| 8CR966 | Stumpy Strand Island | Linear resource segment | Post-1950 | Insufficient Information |

**Table 3.5-3. Previously Recorded Historic Resources within the Study Area**

| FMSF # | Name / Address | Resource Type/Style | Year Built | SHPO National Register Evaluation* |
|---|---|---|---|---|
| 8CR967 | Old Immokalee Naples Road | Linear resource segment | Post-1950 | Insufficient Information |
| 8CR968 | Big Corkscrew Island Tram | Linear resource segment | Post-1950s | Insufficient Information |
| 8CR969 | Tradeport Trail | Linear resource segment | 1940s–1950s | Not evaluated in APE; adjacent segment is ineligible |
| 8CR1406 | Tram Lines | Linear resource segment | Post-1950 | Ineligible |
| 8CR1494 | 5086 Corkscrew Road | Frame Vernacular building | 1964 or later | Ineligible |
| 8CR1495 | 6081 SR 82 | Frame Vernacular building | 1965 or later | Ineligible |

** As recorded in the FMSF; may require re-evaluation*

## 3.6 SOCIOECONOMIC RESOURCES AND ENVIRONMENTAL JUSTICE

This section briefly describes the socioeconomic resources in the vicinity of the ECMSHCP area, including minority and low-income characteristics related to environmental justice.

### 3.6.1 Affected Environment

The ECMSHCP area is located in eastern Collier County, Florida, near the Census-Designated Place of Immokalee, which lies about 20 miles east-southeast of the city of Fort Myers. Immokalee is unincorporated, and governed by Collier County. Collier County is part of the Naples-Immokalee-Marco Island, FL Metropolitan Statistical Area, which is included in the Cape Coral-Fort Myers-Naples, FL Combined Statistical Area (U.S. Census Bureau [USCB] 2013). The site is north of the BCNP and the FPNWR.

#### *3.6.1.1 Socioeconomic Resources*

Collier County, which has a population density of 160.9, is sparsely populated in comparison to populous Miami-Dade and Broward Counties to the east, with population densities of 1,315.5 and 1,444.9, respectively. However, Collier County is experiencing great population growth (USCB 2012). The most recent data available estimate the 2016 population of Collier County to be 348,236 (USCB 2018a). As shown in Table 3.6-1, between 1990 and 2010, population increased 111.4 percent, from 152,099 to 321,520 (USCB 1990, USCB 2010a). This is higher than the national and state levels of 24.1 percent and 45.3 percent, respectively. During the same time period, the population of Immokalee Census Designated Place (CDP) grew from 14,120 to 24,154 (71.1 percent) (USCB 1990, USCB 2010b). Projected population for county population in 2030 is 443,600, a 38 percent increase from 2010 (Bureau of Economic and Business Research 2018).

**Table 3.6-1. 1990-2030 Population Data**

| Geography | Census 1990 | Census 2000 | Census 2010 | ACS 2016 | Projection 2030 | Percent Increase 1990-2010 | Percent Increase 2010-2030 |
|---|---|---|---|---|---|---|---|
| Immokalee CDP | 14,120 | 19,763 | 24,154 | 25,284 | Not Available | 71.1% | N/A |
| Collier County | 152,099 | 251,377 | 321,520 | 348,236 | 443,600 | 111.4% | 38.0% |
| Florida | 12,937,926 | 15,982,378 | 18,801,310 | 19,934,451 | 24,357,000 | 45.3% | 29.5% |
| United States | 248,709,873 | 281,421,906 | 308,745,538 | 318,558,162 | 359,402,000 | 24.1% | 16.4% |

# Label: "1 Supervisor/FOIA/FWS-2019-01086-release"

**Created by:constance_cassler@fws.gov**

Total Messages in label:292 (59 conversations)

Created: 10-25-2019 at 07:00 AM

# Conversation Contents

**Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan**

**Attachments:**

/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/1.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/2.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/3.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/3.2 rep_ecmshcp_appendix_a_20180423.pdf
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/3.3 rep_ecmshcp_appendix_b_20180423.pdf
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/4.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/5.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/5.2 East Collier dEIS revised Sept 25.docx
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/6.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/7.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/8.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/9.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/10.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/11.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/11.2 Tr bal Mailing List for Scoping Mtg.xls
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/12.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/13.1 image003.png
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/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/16.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/17.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/18.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/18.2 Cultural_Resource_Map_revised.jpg
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/19.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/20.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/20.2 Eastern Collier HCP-Tribal Contact Info Sep 2018.xlsx
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/21.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/22.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/23.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/24.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/25.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/26.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/27.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/28.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/28.2 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/29.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/30.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/31.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/31.2 Eastern Collier HCP-Tribal Contact Info Sep 2018.xlsx
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/32.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/32.2 20181026CopyChucksmarkupAECOMAgency and Officials Mailing List 2018-10-17.xlsx
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/33.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/34.1 img-X18101557-0001 (2).pdf
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/35.1 img-X18101557-0001 (2).pdf
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/36.1 img-X18101557-0001 (2).pdf
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/37.1 img-X18101557-0001 (2).pdf
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/38.1 image003.png
/36. Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan/38.2 image003.png

## "Hinzman, Roxanna" <roxanna_hinzman@fws.gov>

| | |
|---|---|
| **From:** | "Hinzman, Roxanna" <roxanna_hinzman@fws.gov> |
| **Sent:** | Wed Sep 26 2018 10:01:13 GMT-0600 (MDT) |
| **To:** | Timothy Binzen <timothy_binzen@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, "Kelso, Charles" <charles_kelso@fws.gov> |
| **CC:** | Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>, Richard Kanaski <richard_kanaski@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

I am looping in Connie and Chuck, who are leading this effort. I want to say yes... but will rely on them to be sure.

Rox

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960

Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

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---

On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

> Hello Rox and Kevin,
>
> Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
>
> Thank you,
> --Tim
>
> ---------- Forwarded message ---------
> From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> Date: Mon, Sep 24, 2018 at 4:29 PM
> Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>
>
> Good Afternoon,
>
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>
> Sincerely,
>
> Victoria Menchaca, M.A.
>
> Compliance Review Specialist
>
> Seminole Tribe of Florida
>
> Tr bal Historic Preservation Office
>
> 30290 Josie Billie Hwy, PMB 1004
>
> Clewiston, FL 33440
>
> Tel: 863-983-6549 Ext: 12216
>
> Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tr bal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

**"Hinzman, Roxanna" <roxanna_hinzman@fws.gov>**

| | |
|---|---|
| **From:** | "Hinzman, Roxanna" <roxanna_hinzman@fws.gov> |
| **Sent:** | Wed Sep 26 2018 11:31:35 GMT-0600 (MDT) |
| **To:** | Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, "Kelso, Charles" <charles_kelso@fws.gov> |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
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On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:
> Rox - can you send Tim & I a copy of the conservation plan?
>
> Rick
>
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> > Date: Mon, Sep 24, 2018 at 4:29 PM
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Email: victoriamenchaca@semtribe.com

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--
Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
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(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

## "Cassler, Constance" <constance_cassler@fws.gov>

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Wed Sep 26 2018 11:51:51 GMT-0600 (MDT) |
| **To:** | Richard Kanaski <richard_kanaski@fws.gov>, Timothy Binzen <timothy_binzen@fws.gov> |
| **CC:** | Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov> |
| **Subject:** | Fwd: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png rep_ecmshcp_appendix_a_20180423.pdf rep_ecmshcp_appendix_b_20180423.pdf |

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Thank you,

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
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>
> Rick
>
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(912) 257-5434 [Cell]
richard_kanaski@fws.gov

## "Kanaski, Richard" <richard_kanaski@fws.gov>

| | |
|---|---|
| **From:** | "Kanaski, Richard" <richard_kanaski@fws.gov> |
| **Sent:** | Wed Sep 26 2018 12:41:45 GMT-0600 (MDT) |
| **To:** | constance_cassler@fws.gov |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, charles_kelso@fws.gov, Roxanna Hinzman <roxanna_hinzman@fws.gov>, David Dell <david_dell@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Connie & Rox - got the link & appendices. A couple of questions - there is a reference to NEPA compliance and a joint EIS being done by FWS & the ACOE. Is the EIS completed? If so, was it forwarded directly to the Seminole and the other four Tr bes for review and comment? During the public comment and/or state or federal agency review periods, were the Tribes offered a chance to weigh in on the multispecies conservation plan? If so, did any of the Tribes provide comments. Which tribal department made the comments - environmental/wildlife management, historic preservation, water management?

Second, Section 1.6.4 explicitly addresses NHPA compliance and simply states that each permit application would be reviewed pursuant to Section 106. Has any permit application been received to date and subsequently processed? What is the applicant's responsibility or financial liability in this step? In other words, does the applicant provide one of several reports produced by a professional archaeologist or qualified consulting firm as part of the application - a desktop assessment, a Phase I reconnaissance of their property, Phase II testing of an identified cultural resource [if necessary], etc.

Last, does the plan identify specific activities or actions that would be exempt from Section 106 and those that would trigger the need for Section 106 compliance. If so, how were these activities/actions identified? Were they done in consultation with the SHPO, the Tribes, and agency historic preservation staff?

More later.

Rick

On Wed, Sep 26, 2018 at 1:52 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

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>
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Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

## "Dell, David" <david_dell@fws.gov>

| | |
|---|---|
| **From:** | "Dell, David" <david_dell@fws.gov> |
| **Sent:** | Wed Sep 26 2018 12:45:08 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, Timothy Binzen <timothy_binzen@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png East Collier dEIS revised Sept 25.docx |

Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.

Our approach to the SHPO and Tr bal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tribal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.

Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tr bes will have the chance to review it. For your information, here it is attached.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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Freedom of Information Act (FOIA) and may be
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On Wed, Sep 26, 2018 at 1:51 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:

> Hi Richard and Timothy,
>
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>
> Constance L. Cassler, Ph.D.
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> office: 772-469-4243
> fax: 772-562-4288
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> From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
> Date: Wed, Sep 26, 2018 at 1:32 PM
> Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
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I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
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On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

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> Rick
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> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
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Compliance Review Specialist

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Tribal Historic Preservation Office

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Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

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| **From:** | "Dell, David" <david_dell@fws.gov> |
| **Sent:** | Wed Sep 26 2018 12:46:50 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, Timothy Binzen <timothy_binzen@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
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fax: 7081
david_dell@fws gov

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| **From:** | "Kanaski, Richard" <richard_kanaski@fws.gov> |
| **Sent:** | Wed Sep 26 2018 13:24:23 GMT-0600 (MDT) |
| **To:** | David Dell <david_dell@fws.gov> |
| **CC:** | constance_cassler@fws.gov, Timothy Binzen <timothy_binzen@fws.gov>, charles_kelso@fws.gov, Roxanna Hinzman <roxanna_hinzman@fws.gov>, "Tawes, Robert" <Robert_Tawes@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |

**Attachments:** image003.png

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| **To:** | "Kanaski, Richard" <richard_kanaski@fws.gov> |
| **CC:** | Constance Cassler <constance_cassler@fws.gov>, Timothy Binzen <timothy_binzen@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, "Tawes, Robert" <Robert_Tawes@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Who would make that response to the Seminoles?

Also, the dEIS catalogs known cultural resource sites in the plan area.

David Dell
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Hello Rox and Kevin,

Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tr be?

Thank you,
--Tim

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From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
Date: Mon, Sep 24, 2018 at 4:29 PM
Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
Cc: Paul Backhouse <PaulBackhouse@semtr be.com>, Bradley Mueller <bradleymueller@semtribe.com>

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I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

> --
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> U.S. Fish and Wildlife Service, Southeast Region
> (843) 784-6310 [Office]
> (912) 257-5434 [Cell]
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## "Kanaski, Richard" <richard_kanaski@fws.gov>

| | |
|---|---|
| **From:** | "Kanaski, Richard" <richard_kanaski@fws.gov> |
| **Sent:** | Wed Sep 26 2018 13:48:53 GMT-0600 (MDT) |
| **To:** | David Dell <david_dell@fws.gov> |
| **CC:** | constance_cassler@fws.gov, Timothy Binzen <timothy_binzen@fws.gov>, charles_kelso@fws.gov, Roxanna Hinzman <roxanna_hinzman@fws.gov>, "Tawes, Robert" <Robert_Tawes@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Looks like Tim will be drafting the response, but it should be signed by the FO Supervisor [if the HCP is originating from that level]. One comment on the dEIS - site locational information [i.e. UTM or geographic coordinates, maps showing locations] are confidential. As the dEIS is a public document, consider blacking out the map showing locations of recorded archaeological sites and removing any geographic coordinates in the public version.

Later.

Rick

On Wed, Sep 26, 2018 at 3:32 PM Dell, David <david_dell@fws.gov> wrote:

> Who would make that response to the Seminoles?
>
> Also, the dEIS catalogs known cultural resource sites in the plan area.
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> Southeast Region
> HCP and Safe Harbors Coordinator
> 404/679-7313
> fax: 7081
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Thank you,

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
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office: 772-469-4243
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To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
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Roxanna Hinzman, Field Supervisor
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Desk 772-469-4309
Cell 772-532-1247
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## "Kelso, Charles" <charles_kelso@fws.gov>

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| **From:** | "Kelso, Charles" <charles_kelso@fws.gov> |
| **Sent:** | Wed Sep 26 2018 13:50:16 GMT-0600 (MDT) |
| **To:** | "Dell, David" <david_dell@fws.gov> |
| **CC:** | richard_kanaski@fws.gov, Constance Cassler <constance_cassler@fws.gov>, timothy_binzen@fws.gov, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

If it's of any value, the Seminole Tribe of Florida (STOF) was on the agency direct mail list for the scoping announcement and solicitation for agency comments. Also, we had an online briefing planned with the STOF two weeks ago, but ran into audio problems and had to reschedule this briefing for early October.

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## "Cassler, Constance" <constance_cassler@fws.gov>

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| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png Tribal Mailing List for Scoping Mtg.xls |

Hi Richard,

I wanted to mention we had a public scoping mee ing on April 12, 2016, to explain the HCP and request comments to help shape he EIS and we also had an agency webinar. Prior to the meeting we sent letters to agency, organization, and Tribal representatives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in he Agency mee ing on April 19, 2016.

We were scheduled to give a presenta ion on the HCP and EIS status to the Seminole Tribe this month, but here were technical difficulties with the Webinar. I believe the mee ing is re-scheduled for October 3rd.

We expect he draft EIS to go in he Federal Register soon, and will send letters to the same Tribal contacts letting them know how they can review the HCP and dEIS and provide comments.

Let me know if you have additional questions.

Connie

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>
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Sincerely,

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Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

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Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

## "Kanaski, Richard" <richard_kanaski@fws.gov>

| | |
|---|---|
| **From:** | "Kanaski, Richard" <richard_kanaski@fws.gov> |
| **Sent:** | Wed Sep 26 2018 14:03:26 GMT-0600 (MDT) |
| **To:** | constance_cassler@fws.gov |
| **CC:** | David Dell <david_dell@fws.gov>, Timothy Binzen <timothy_binzen@fws.gov>, charles_kelso@fws.gov, Roxanna Hinzman <roxanna_hinzman@fws.gov>, "Tawes, Robert" <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

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David Dell
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404/679-7313
fax: 7081
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> > Date: Wed, Sep 26, 2018 at 1:32 PM
> > Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
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**Sent:** Wed Sep 26 2018 14:15:21 GMT-0600 (MDT)
**To:** Richard Kanaski <richard_kanaski@fws.gov>
**Subject:** Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
**Attachments:** image003.png

Thanks for he update.

Connie

Constance L. Cassler, Ph.D.
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| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Hello,

The Tribal contact information that was used is badly out of date. The Chairpersons are incorrect for the Miccosukee, Muscogee (Creek), and Seminole Tribe of Florida. This does not make FWS look good at all. In addition, the specified THPO for the Poarch Band is deceased. For those Tribes that have Natural Resource Coordinators, those people should have been notified, in addition to the THPOs.

Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

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I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need anything else.

Thank you,

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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---------- Forwarded message ---------
From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles

<charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
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Desk 772-469-4309
Cell 772-532-1247
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> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
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> >
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> >
> > Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtr be.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
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External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

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**"Cassler, Constance" <constance_cassler@fws.gov>**

| | |
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| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Wed Sep 26 2018 14:32:21 GMT-0600 (MDT) |
| **To:** | Charles Kelso <charles_kelso@fws.gov> |
| **Subject:** | Fwd: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Hi Chuck,

I copied he spreadsheet used for the scoping meeting and saved it tho the dEIS folder with the name: 20180926_Mailing List for NOA of HCP and dEIS
I also updated he Tribal information Richaed Kanaski sent us.

Connie

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Date: Wed, Sep 26, 2018 at 4:03 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: <constance_cassler@fws.gov>
Cc: David Dell <david_dell@fws.gov>, Timothy Binzen <timothy_binzen@fws.gov>, <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Tawes, Robert <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>

Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.

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Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tr bal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

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> We expect he draft EIS to go in he Federal Register soon, and will send letters to the same Tribal contacts letting them know how they can review the HCP and dEIS and provide comments.
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> Let me know if you have additional questions.
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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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Our approach to the SHPO and Tribal consultations is descr bed in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tr bal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.

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> >
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> >
> > Seminole Tribe of Florida
> >
> > Tribal Historic Preservation Office
> >
> > 30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

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Office: (413) 253-8731
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## "Cassler, Constance" <constance_cassler@fws.gov>

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Wed Sep 26 2018 14:39:42 GMT-0600 (MDT) |
| **To:** | Timothy Binzen <timothy_binzen@fws.gov> |
| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that time. I have already made the updates that Richard provided and am happy to make any addi ional updates that are needed as we prepare to send letters about the NOA, HCP, and dEIS. I appreciate the help.

Connie

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On Wed, Sep 26, 2018 at 4:25 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

> Hello,
>
> The Tr bal contact information that was used is badly out of date. The Chairpersons are incorrect for the Miccosukee, Muscogee (Creek), and Seminole Tribe of Florida. This does not make FWS look good at all. In addition, the specified THPO for the Poarch Band is deceased. For those Tribes that have Natural Resource Coordinators, those people should have been notified, in addition to the THPOs.
>
> Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.
>
> I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

--Tim

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12555 NS 3540
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Wewoka, Oklahoma 74884

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Compliance Review Specialist

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(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

--
Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
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--
Timothy Binzen
Tr bal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

## "Dell, David" <david_dell@fws.gov>

| | |
|---|---|
| **From:** | "Dell, David" <david_dell@fws.gov> |
| **Sent:** | Thu Sep 27 2018 05:58:54 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Connie and Chuck: Concerning Rick Kanaski's concern over a location map and site coordinates. We do not find site coordinates in either the dEIS or the appendices. The site file number may be used to reference a cultural site at the SHPO website, but that has access safeguards.

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David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that time. I have already made the updates that Richard provided and am happy to make any additional updates hat are needed as we prepare to send letters about the NOA, HCP, and dEIS. I appreciate he help.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
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Atmore, AL 36502

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Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
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P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

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Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.

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Thank you,

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From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
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Desk 772-469-4309
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Fax 772-562-4288
roxanna_hinzman@fws.gov

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> Rick
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> > Hello Rox and Kevin,
> >
> > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> >
> > Thank you,
> > --Tim
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> > From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>
> >
> > Good Afternoon,
> >
> > I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?
> >
> > Sincerely,
> >
> > Victoria Menchaca, M.A.
> >
> > Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtr be.com

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## "Kelso, Charles" <charles_kelso@fws.gov>

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| **From:** | "Kelso, Charles" <charles_kelso@fws.gov> |
| **Sent:** | Thu Sep 27 2018 07:02:16 GMT-0600 (MDT) |
| **To:** | "Dell, David" <david_dell@fws.gov> |
| **CC:** | Constance Cassler <constance_cassler@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov> |
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| **Attachments:** | image003.png Cultural_Resource_Map_revised.jpg |

David, Rob,
I've attached a revised figure 3.5-2. Notice that it looks very similar to 3.5-1. Just let me know if this will/will not do the trick.
Chuck

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To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
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Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

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| | |
|---|---|
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| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

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I will provide the updated contacts shortly.

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>
> Connie
>
> Constance L. Cassler, Ph.D.
> Supervisory Fish and Wildlife Biologist
> U.S. Fish and Wildlife Service
> 1339 20th Street
> Vero Beach, Florida 32960
> office: 772-469-4243
> fax: 772-562-4288
> email: constance_cassler@fws.gov
>
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Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard,

I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to the meeting we sent letters to agency, organization, and Tribal representatives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in he Agency mee ing on April 19, 2016.

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Let me know if you have additional ques ions.

Connie

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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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On Wed, Sep 26, 2018 at 2:45 PM, Dell, David <david_dell@fws.gov> wrote:

Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.

Our approach to the SHPO and Tribal consultations is descr bed in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tribal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.

Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.

David Dell
Southeast Region
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I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since hey were sent to us in April. I'm attaching bo h appendices. Please let me or Chuck know if you need anything else.

Thank you,

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From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

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Rox - can you send Tim & I a copy of the conservation plan?

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Hello Rox and Kevin,

Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?

Thank you,
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Date: Mon, Sep 24, 2018 at 4:29 PM
Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)

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Office: (413) 253-8731
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## "Binzen, Timothy" <timothy_binzen@fws.gov>

| | |
|---|---|
| **From:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Sent:** | Thu Sep 27 2018 09:22:22 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png Eastern Collier HCP-Tribal Contact Info Sep 2018.xlsx |

Hi Connie,

I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.

Best,
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Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

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## "Cassler, Constance" <constance_cassler@fws.gov>

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| **Sent:** | Thu Sep 27 2018 14:07:06 GMT-0600 (MDT) |
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| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

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> > > Connie
> > >
> > > Constance L. Cassler, Ph.D.
> > > Supervisory Fish and Wildlife Biologist
> > > U.S. Fish and Wildlife Service
> > > 1339 20th Street
> > > Vero Beach, Florida 32960
> > > office: 772-469-4243
> > > fax: 772-562-4288
> > > email: constance_cassler@fws.gov
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>
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> Miccosukee Tribe of Indians of Florida
> P.O. Box 440021, Tamiami Station
> Miami, Florida 33144
>
> Carolyn M. White, Regulatory Affairs Division Director
> & Acting Tribal Historic Preservation Officer
> Poarch Band of Creek Indians
> 5811 Jack Springs Road, Building 500
> Atmore, AL 36502
>
> Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address].
> Let me know if you need email addresses or phone numbers.
> Seminole Indian Tribe of Florida
> AH-TAH-THI-KI Museum
> Tribal Historic Preservation Office
> 30290 Josie Billie Hwy, PMB 1004
> Clewiston, FL 33440
>
> Ms. Corain Lowe-Zepeda, THPO
> Muscogee (Creek) Nation
> Cultural Preservation Office
> P.O. Box 580
> Okmulgee, Oklahoma 74447
>
> Theodore Isham, Tribal Historic Preservation Officer
> Seminole Nation of Oklahoma
> Historic Preservation Office
> 12555 NS 3540
> P.O. Box 1498
> Wewoka, Oklahoma 74884
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Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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> > ---------- Forwarded message ---------
> > From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
> > Date: Wed, Sep 26, 2018 at 1:32 PM
> > Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
> > Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>
> >
> > I think Connie or Chuck can give you access to the google drive. It is huge.
> >
> > Roxanna Hinzman, Field Supervisor
> > U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
> > 1339 20th Street

Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

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> > From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>
> >
> > Good Afternoon,
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> > Sincerely,
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> > Victoria Menchaca, M.A.
> >
> > Compliance Review Specialist
> >
> > Seminole Tribe of Florida
> >
> > Tribal Historic Preservation Office
> >
> > 30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtr be.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

--
Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

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## "Binzen, Timothy" <timothy_binzen@fws.gov>

| | |
|---|---|
| **From:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Sent:** | Fri Sep 28 2018 07:41:07 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Hi Connie,

You are welcome. Please note, in general we find it very important to include Tr bes' Natural Resource Coordinators (actual titles vary) in our

FWS communications with Tribes. The NEPA process requires Tr bal coordination, even if the proposed action has no potential for effect under NHPA (Sec. 106). Thus, it is important to contact not only the Chairperson and THPO, but also the Natural Resource Coordinator, so that all the key people with the Tribe have the same awareness.

Thanks,
--Tim

On Thu, Sep 27, 2018 at 4:07 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

> Thank you. This is really helpful.
>
> Connie
>
> Constance L. Cassler, Ph.D.
> Supervisory Fish and Wildlife Biologist
> U.S. Fish and Wildlife Service
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> On Thu, Sep 27, 2018 at 11:22 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
>
> > Hi Connie,
> >
> > I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.
> >
> > Best,
> > --Tim
> >
> > On Thu, Sep 27, 2018 at 10:05 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
> >
> > > Hi Connie,
> > >
> > > Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!
> > >
> > > I will provide the updated contacts shortly.
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Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

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> > Tel: 863-983-6549 Ext: 12216
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> > Email: victoriamenchaca@semtribe.com

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Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

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## "Cassler, Constance" <constance_cassler@fws.gov>

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Fri Sep 28 2018 07:46:34 GMT-0600 (MDT) |
| **To:** | Timothy Binzen <timothy_binzen@fws.gov> |
| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |

**Attachments:** image003.png

Our office has a monthly coordination meeting wi h the Seminole Tribe's natural resources team. That is the mee ing we will be giving the briefing to and inviting the THPO. Kevin Palme could tell you how often he meets with the Miccosukee Tribe.

Connie

Constance L. Cassler, Ph.D.
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U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
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Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

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Hi Richard,

I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to he meeting we sent letters to agency, organization, and Tribal representa ives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in the Agency meeting on April 19, 2016.

We were scheduled to give a presentation on the HCP and EIS status to he Seminole Tribe this mon h, but there were technical difficulties with the Webinar. I believe the meeting is re-scheduled for October 3rd.

We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts let ing them know how they can review the HCP and dEIS and provide comments.

Let me know if you have additional questions.

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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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On Wed, Sep 26, 2018 at 2:45 PM, Dell, David <david_dell@fws.gov> wrote:

Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.

Our approach to the SHPO and Tribal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tribal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.

Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.

David Dell
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On Wed, Sep 26, 2018 at 1:51 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard and Timothy,

I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need anything else.

Thank you,

Connie

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---------- Forwarded message ---------
From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

*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.

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On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:
> Rox - can you send Tim & I a copy of the conservation plan?
>
> Rick
>
> On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
> > Hello Rox and Kevin,
> >
> > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> >
> > Thank you,
> > --Tim
> >
> > ---------- Forwarded message ---------
> > From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>
> >
> > Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtr be.com

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**"Binzen, Timothy" <timothy_binzen@fws.gov>**

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| **From:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Sent:** | Fri Sep 28 2018 11:18:52 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Hi Connie,

That's great about the monthly meetings with the Seminole Tribe's natural resources team. I think I had heard about those, and I'm glad to hear that they are continuing. Are these teleconference meetings? Would it be possible for me to listen in sometime?
Thanks,
--Tim

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P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
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P.O. Box 1498
Wewoka, Oklahoma 74884

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>
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> ---------- Forwarded message ---------
> From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
> Date: Wed, Sep 26, 2018 at 1:32 PM
> Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
> Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>
>
> I think Connie or Chuck can give you access to the google drive. It is huge.
>
> ---
>
> Roxanna Hinzman, Field Supervisor
> U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
> 1339 20th Street
> Vero Beach, FL 32960
> Desk 772-469-4309
> Cell 772-532-1247
> Fax 772-562-4288
> roxanna_hinzman@fws.gov
>
> *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.
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> > > Hello Rox and Kevin,
> > >
> > > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> > >
> > > Thank you,

--Tim

---------- Forwarded message ---------
From: **Victoria Menchaca** <VictoriaMenchaca@semtr be.com>
Date: Mon, Sep 24, 2018 at 4:29 PM
Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

--
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U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
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## "Cassler, Constance" <constance_cassler@fws.gov>

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Fri Sep 28 2018 12:25:27 GMT-0600 (MDT) |
| **To:** | Timothy Binzen <timothy_binzen@fws.gov> |
| **CC:** | Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Many are teleconferences and a few are in person. Kevin Plamer, cc'ed on this email, participates and can share the invites. He is our Tribal liaison.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960

office: 772-469-4243
fax: 772-562-4288
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Thanks,
--Tim

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Our office has a monthly coordination meeting wi h the Seminole Tribe's natural resources team. That is the mee ing we will be giving he briefing to and inviting he THPO. Kevin Palme could tell you how often he meets with the Miccosukee Tribe.

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Thanks,
--Tim

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Hi Connie,

I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.

Best,
--Tim

On Thu, Sep 27, 2018 at 10:05 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hi Connie,

Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!

I will provide the updated contacts shortly.

Thank you,
--Tim

On Wed, Sep 26, 2018 at 4:40 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that ime. I have already made the updates hat Richard provided and am happy to make any additional updates that are needed as we prepare to send letters about the NOA, HCP, and dEIS. I appreciate the help.

Connie

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On Wed, Sep 26, 2018 at 4:25 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hello,

The Tribal contact information that was used is badly out of date. The Chairpersons are incorrect for the Miccosukee, Muscogee (Creek), and Seminole Tribe of Florida. This does not make FWS look good at all. In addition, the specified THPO for the Poarch Band is deceased. For those Tribes that have Natural Resource Coordinators, those people should have been notified, in addition to the THPOs.

Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

--Tim

On Wed, Sep 26, 2018 at 4:03 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.

Fred Dayhoff, Tribal Historic Preservation Officer
Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

> Hi Richard,
>
> I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to the mee ing we sent letters to agency, organization, and Tribal representatives. I'm attaching he list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in he Agency mee ing on April 19, 2016.
>
> We were scheduled to give a presentation on the HCP and EIS status to the Seminole Tribe this month, but there were technical difficulties with the Webinar. I believe the meeting is re-scheduled for October 3rd.
>
> We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts let ing them know how they can review the HCP and dEIS and provide comments.
>
> Let me know if you have additional questions.
>
> Connie
>
> Constance L. Cassler, Ph.D.
> Supervisory Fish and Wildlife Biologist
> U.S. Fish and Wildlife Service
> 1339 20th Street
> Vero Beach, Florida 32960
> office: 772-469-4243
> fax: 772-562-4288
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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

> Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.
>
> David Dell
> Southeast Region
> HCP and Safe Harbors Coordinator
> 404/679-7313
> fax: 7081
> david_dell@fws.gov
>
> 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.
>
> On Wed, Sep 26, 2018 at 2:45 PM, Dell, David <david_dell@fws.gov> wrote:
>
> > Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.
> >
> > Our approach to the SHPO and Tribal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tr bal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.
> >
> > Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.
> >
> > David Dell
> > Southeast Region
> > HCP and Safe Harbors Coordinator
> > 404/679-7313
> > fax: 7081
> > david_dell@fws.gov
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> > On Wed, Sep 26, 2018 at 1:51 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard and Timothy,

I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of he most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need any hing else.

Thank you,

Connie

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To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
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Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tr be of Florida

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30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

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## "Binzen, Timothy" <timothy_binzen@fws.gov>

| | |
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| **From:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Sent:** | Fri Sep 28 2018 12:43:15 GMT-0600 (MDT) |
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| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Thanks, Connie. I have spoken with Kevin and Rox about these calls in the past. I am very supportive of these calls continuing.

I am planning to send the response to Victoria Menchaca in about half an hour. Last call for comments!

--Tim

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Hi Connie,

Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!

I will provide the updated contacts shortly.

Thank you,
--Tim

On Wed, Sep 26, 2018 at 4:40 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that ime. I have already made the updates hat Richard provided and am happy to make any additional updates that are needed as we prepare to send letters about the NOA, HCP, and dEIS. I appreciate the help.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

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Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.

Fred Dayhoff, Tribal Historic Preservation Officer
Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard,

I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to the meeting we sent letters to agency, organization, and Tribal representatives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in he Agency mee ing on April 19, 2016.

We were scheduled to give a presentation on he HCP and EIS status to the Seminole Tribe this month, but there were technical difficulties with the Webinar. I believe the meeting is re-scheduled for October 3rd.

We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts let ing them know how they can review he HCP and dEIS and provide comments.

Let me know if you have additional questions.

Connie

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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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On Wed, Sep 26, 2018 at 2:45 PM, Dell, David <david_dell@fws.gov> wrote:

Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.

Our approach to the SHPO and Tribal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tribal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.

Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.

David Dell
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404/679-7313
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Hi Richard and Timothy,

I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need any hing else.

Thank you,

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---------- Forwarded message ---------
From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

*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.

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On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

> Rox - can you send Tim & I a copy of the conservation plan?
>
> Rick
>
> On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
>
> > Hello Rox and Kevin,
> >
> > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> >
> > Thank you,
> > --Tim
> >
> > ---------- Forwarded message ---------
> > From: **Victoria Menchaca** <VictoriaMenchaca@semtr be.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtr be.com>

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tr be of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

--
Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

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### "Dell, David" <david_dell@fws.gov>

| | |
|---|---|
| **From:** | "Dell, David" <david_dell@fws.gov> |
| **Sent:** | Fri Sep 28 2018 12:50:16 GMT-0600 (MDT) |
| **To:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **CC:** | "Cassler, Constance" <constance_cassler@fws.gov>, Richard Kanaski <richard_kanaski@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Just made suggestions on the APE in the previously-shared google doc.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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On Fri, Sep 28, 2018 at 2:43 PM, Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Thanks, Connie. I have spoken with Kevin and Rox about these calls in the past. I am very supportive of these calls continuing.

I am planning to send the response to Victoria Menchaca in about half an hour. Last call for comments!

--Tim

On Fri, Sep 28, 2018 at 2:26 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Many are teleconferences and a few are in person. Kevin Plamer, cc'ed on this email, par icipates and can share the invites. He is our Tribal liaison.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
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On Fri, Sep 28, 2018 at 1:19 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hi Connie,

That's great about the monthly meetings with the Seminole Tribe's natural resources team. I think I had heard about those, and I'm glad to hear that they are continuing. Are these teleconference meetings? Would it be possible for me to listen in sometime?
Thanks,
--Tim

On Fri, Sep 28, 2018 at 9:47 AM Cassler, Constance <constance_cassler@fws.gov> wrote:

Our office has a monthly coordination meeting wi h the Seminole Tribe's natural resources team. That is the mee ing we will be giving he briefing to and inviting he THPO. Kevin Palme could tell you how often he meets with the Miccosukee Tribe.

Connie

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On Fri, Sep 28, 2018 at 9:41 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hi Connie,

You are welcome. Please note, in general we find it very important to include Tribes' Natural Resource Coordinators (actual titles vary) in our FWS communications with Tribes. The NEPA process requires Tr bal coordination, even if the proposed action has no potential for effect under NHPA (Sec. 106). Thus, it is important to contact not only the Chairperson and THPO, but also the Natural Resource Coordinator, so that all the key people with the Tribe have the same awareness.

Thanks,
--Tim

On Thu, Sep 27, 2018 at 4:07 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Thank you. This is really helpful.

Connie

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> From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
> Date: Wed, Sep 26, 2018 at 1:32 PM
> Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
> Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>
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> U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
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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.
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>
> On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:
>
> > Rox - can you send Tim & I a copy of the conservation plan?
> >
> > Rick

On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hello Rox and Kevin,

Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?

Thank you,
--Tim

---------- Forwarded message ---------
From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
Date: Mon, Sep 24, 2018 at 4:29 PM
Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

--
Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

--
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Regional Archaeologist
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Mobile: (413) 800-2071

**"Binzen, Timothy" <timothy_binzen@fws.gov>**

| | |
|---|---|
| **From:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Sent:** | Fri Sep 28 2018 14:09:08 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <robert_tawes@fws.gov>, Richard Kanaski <richard_kanaski@fws.gov>, "Fleming, Jeffrey" <jeffrey_m_fleming@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov> |
| **Subject:** | Fwd: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png image003.png |

Greetings All,

Here is the response to Victoria Menchaca of the Seminole Tr be. Thank you all for your edits and comments on the draft this week. I apologize for the formatting. Something happened to the margins when I used the Google drive document and I could not fix the formatting in Bison Connect. Anyway, the essential message has been provided. Please note that the response says that THPO staff will be welcome to participate in the tentative Oct. 3 webinar; also that a copy of the dEIS will be provided directly to the THPO (or at least the link). Would someone please provide the dEIS to Paul Backhouse (he is CC'd on the response) and let me know it has been provided? Also, confirm invitation to THPO for the webinar?

Thanks and have a good weekend,
--Tim

---------- Forwarded message ---------
From: **Binzen, Timothy** <timothy_binzen@fws.gov>
Date: Fri, Sep 28, 2018 at 4:01 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: <VictoriaMenchaca@semtribe.com>
Cc: <comments-eastcollierhcp@fws.gov>, Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>

Dear Victoria,

Thank you for your email message of September 24. You asked about Tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan (HCP), and consultation that the U.S. Fish and Wildlife Service (Service) has conducted under Section 106 of the National Historic Preservation Act.

Formulation of this complex HCP has taken several years, has followed the NEPA scoping process, and will conclude with the Service deciding whether to issue an incidental take permit (ITP). During the scoping process, the Service has coordinated with the Seminole Tribe of Florida. The Service's South Florida Ecological Services Field Office (SFESFO) conducts monthly coordination meetings (usually by teleconference) with representatives of the Seminole Tribe. The HCP and draft Environmental Impact Statement (dEIS) have been mentioned in these meetings. In-depth discussions are planned for the near future. A webinar to discuss this topic with the Tribe is tentatively scheduled for October 3. The THPO staff would be welcome to participate in this webinar.

Regarding the National Historic Preservation Act (Sec. 106) and the HCP, the Service's approach to Tr bal consultation (and SHPO coordination) is described in the forthcoming dEIS for the HCP. The HCP would establish a programmatic approach to authorizing individual development projects within the HCP area. The applicant/permittee for a proposed development project would be required to comply with Sec. 106 and with state cultural resource laws (because of the need for Corps wetlands permitting, for example). Consequently, Sec. 106 Tribal consultation and SHPO coordination would be required for future development projects that may be proposed within the HCP area. (Because the HCP would work programmatically, the Sec. 106 Areas of Potential Effect (APEs) of specific proposed future development projects are not known at this time.) The APE encompasses a 51,000-acre area in which covered land use activities may occur (area designated as "covered" in Figure 2.1-1 of the dEIS).
Up to 45,000 acres of impacts would be authorized.

The Service recognizes the importance of collaborating with the Seminole Tribe on conservation and historic preservation issues, and looks forward to addressing your concerns during the ongoing development of the HCP and its subsequent implementation, if the Service issues an ITP. A copy of the dEIS will be sent directly to the THPO.

Thank you for your interest in the Eastern Collier Multiple Species Habitat HCP. Please let me know if you have any additional questions or concerns.

Respectfully,

Tim Binzen

On Mon, Sep 24, 2018 at 4:29 PM Victoria Menchaca <VictoriaMenchaca@semtribe.com> wrote:

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tr bal Historic Preservation Office

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**"Palmer, Kevin" <kevin_palmer@fws.gov>**

| | |
|---|---|
| **From:** | "Palmer, Kevin" <kevin_palmer@fws.gov> |
| **Sent:** | Mon Oct 01 2018 05:48:15 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **CC:** | Timothy Binzen <timothy_binzen@fws.gov>, Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman |

<roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, "Meyer, Miles" <miles_meyer@fws.gov>

**Subject:** Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan

**Attachments:** image003.png

HI All -

I have previously asked Whitney Sapienza, of the Seminole Tribe, to add Tim and Zintcala to the invite list for our monthly call and I know they participated in at least one. Please let me know if you have been inadvertently removed from the list. I have also asked Whitney for their HPO contact information and to have their HPO folks invited to the next call at which we will provide some background information regarding the East Collier HCP. The Seminole Tr be have various departments that do not always communicate efficiently. When I took over, in a rather limited role as Tribal Liaison, our monthly calls were really only geared towards interaction between the Service and Seminole Environmental Resource Management staff. I've done the best I can while still maintaining my main duties which is project biologist for Everglades Restoration.

I have not yet been able to establish a recurring call with the Miccosukee Tribe although it has been offered. We have other lines of communication open with them and usually handle things as they arise. If the HCP briefing goes well with the Seminole tribe we are planning to offer it to the Miccosukee Tribe as well.

Thanks.

Kevin

On Fri, Sep 28, 2018 at 2:25 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:

> Many are teleconferences and a few are in person. Kevin Plamer, cc'ed on this email, participates and can share the invites. He is our Tribal liaison.
>
> Connie
>
> Constance L. Cassler, Ph.D.
> Supervisory Fish and Wildlife Biologist
> U.S. Fish and Wildlife Service
> 1339 20th Street
> Vero Beach, Florida 32960
> office: 772-469-4243
> fax: 772-562-4288
> email: constance_cassler@fws.gov
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>
> On Fri, Sep 28, 2018 at 1:19 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
>
> > Hi Connie,
> >
> > That's great about the monthly meetings with the Seminole Tribe's natural resources team. I think I had heard about those, and I'm glad to hear that they are continuing. Are these teleconference meetings? Would it be possible for me to listen in sometime?
> > Thanks,
> > --Tim
> >
> > On Fri, Sep 28, 2018 at 9:47 AM Cassler, Constance <constance_cassler@fws.gov> wrote:
> >
> > > Our office has a monthly coordination meeting wi h the Seminole Tribe's natural resources team. That is the mee ing we will be giving he briefing to and inviting he THPO. Kevin Palme could tell you how often he meets with the Miccosukee Tribe.
> > >
> > > Connie
> > >
> > > Constance L. Cassler, Ph.D.
> > > Supervisory Fish and Wildlife Biologist
> > > U.S. Fish and Wildlife Service
> > > 1339 20th Street
> > > Vero Beach, Florida 32960
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> > > On Fri, Sep 28, 2018 at 9:41 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
> > >
> > > > Hi Connie,
> > > >
> > > > You are welcome. Please note, in general we find it very important to include Tribes' Natural Resource Coordinators (actual titles vary) in our FWS communications with Tribes. The NEPA process requires Tr bal coordination, even if the proposed action has no potential for effect under NHPA (Sec. 106). Thus, it is important to contact not only the Chairperson and THPO, but also the Natural Resource Coordinator, so that all the key people with the Tribe have the same awareness.
> > > >
> > > > Thanks,

--Tim

On Thu, Sep 27, 2018 at 4:07 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Thank you. This is really helpful.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
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office: 772-469-4243
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email: constance_cassler@fws.gov

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On Thu, Sep 27, 2018 at 11:22 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hi Connie,

I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.

Best,
--Tim

On Thu, Sep 27, 2018 at 10:05 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hi Connie,

Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!

I will provide the updated contacts shortly.

Thank you,
--Tim

On Wed, Sep 26, 2018 at 4:40 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that ime. I have already made the updates hat Richard provided and am happy to make any additional updates that are needed as we prepare to send letters about the NOA, HCP, and dEIS. I appreciate the help.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
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Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
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On Wed, Sep 26, 2018 at 4:25 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hello,

The Tribal contact information that was used is badly out of date. The Chairpersons are incorrect for the Miccosukee, Muscogee (Creek), and Seminole Tribe of Florida. This does not make FWS look good at all. In addition, the specified THPO for the Poarch Band is deceased. For those Tr bes that have Natural Resource Coordinators, those people should have been notified, in addition to the THPOs.

Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

--Tim

On Wed, Sep 26, 2018 at 4:03 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.

Fred Dayhoff, Tribal Historic Preservation Officer
Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard,

I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to the meeting we sent letters to agency, organization, and Tribal representatives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in he Agency mee ing on April 19, 2016.

We were scheduled to give a presentation on he HCP and EIS status to the Seminole Tribe this month, but there were technical difficulties with the Webinar. I believe the meeting is re-scheduled for October 3rd.

We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts let ing them know how they can review he HCP and dEIS and provide comments.

Let me know if you have additional questions.

Connie

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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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Freedom of Information Act (FOIA) and may be disclosed to third parties.

On Wed, Sep 26, 2018 at 2:45 PM, Dell, David <david_dell@fws.gov> wrote:

Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.

Our approach to the SHPO and Tribal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tribal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.

Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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On Wed, Sep 26, 2018 at 1:51 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard and Timothy,

I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need any hing else.

Thank you,

Connie

Constance L. Cassler, Ph.D.
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---------- Forwarded message ----------
From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

*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.

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On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:
Rox - can you send Tim & I a copy of the conservation plan?

Rick

On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
Hello Rox and Kevin,

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Thank you,
--Tim

---------- Forwarded message ---------
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Date: Mon, Sep 24, 2018 at 4:29 PM
Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--

Timothy Binzen
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Regional Archaeologist
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**********
Kevin Palmer
U.S. Fish and Wildlife Service

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1339 20th Street
Vero Beach, Florida 32960-3559
Phone: 772-469-4280
Fax: 772-562-4288 & 564-7393
Email: Kevin_Palmer@fws.gov

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## "Binzen, Timothy" <timothy_binzen@fws.gov>

| | |
|---|---|
| **From:** | "Binzen, Timothy" <timothy_binzen@fws.gov> |
| **Sent:** | Mon Oct 01 2018 07:24:00 GMT-0600 (MDT) |
| **To:** | Kevin Palmer <kevin_palmer@fws.gov> |
| **CC:** | "Cassler, Constance" <constance_cassler@fws.gov>, Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, "Meyer, Miles" <miles_meyer@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png |

Hi Kevin,

Thank you for this clarification, and for the work you have been doing on communications with the Seminole Tribe of Florida (and with the Miccosukee Tribe).

Zintkala Eiring and I do not seem to have been receiving invitations to the monthly Seminole call, so if you would please ask Whitney Sapienza to add us to the distr bution list, that would be appreciated.
Timothy_Binzen@fws.gov
Zintkala_Eiring@fws.gov

We understand that your role has mainly been to discuss Natural Resource-related issues with the Seminole Tribe, and Historic Preservation issues tend to be addressed on a separate track. If the monthly calls do involve cultural resource matters (or THPO participation), then Rick Kanaski may wish to join as well. Rick, please let Kevin know if you would like to be added to Whitney's invite list. Perhaps if the invitations included a brief agenda, that would be helpful to see if THPO matters were included.

Regarding the concept of a similar monthly call with the Miccosukee Tribe, I have been in frequent discussions with Craig Van der Heiden, Fish and Wildlife Director for the Tribe (I even got to meet with him in person last May at the Native American Fish and Wildlife Society meeting in Rhode Island). I think that it is very likely that he would be interested in a monthly call with SFESFO. I would be happy to facilitate that.

Thanks again,
--Tim

On Mon, Oct 1, 2018 at 7:48 AM Palmer, Kevin <kevin_palmer@fws.gov> wrote:

> HI All -
>
> I have previously asked Whitney Sapienza, of the Seminole Tribe, to add Tim and Zintcala to the invite list for our monthly call and I know they participated in at least one. Please let me know if you have been inadvertently removed from the list. I have also asked Whitney for their HPO contact information and to have their HPO folks invited to the next call at which we will provide some background information regarding the East Collier HCP. The Seminole Tribe have various departments that do not always communicate efficiently. When I took over, in a rather limited role as Tribal Liaison, our monthly calls were really only geared towards interaction between the Service and Seminole Environmental Resource Management staff. I've done the best I can while still maintaining my main duties which is project biologist for Everglades Restoration.
>
> I have not yet been able to establish a recurring call with the Miccosukee Tribe although it has been offered. We have other lines of communication open with them and usually handle things as they arise. If the HCP briefing goes well with the Seminole tribe we are planning to offer it to the Miccosukee Tr be as well.
>
> Thanks.
>
> Kevin
>
> On Fri, Sep 28, 2018 at 2:25 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > Many are teleconferences and a few are in person. Kevin Plamer, cc'ed on this email, par icipates and can share the invites. He is our Tribal liaison.
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
> > Supervisory Fish and Wildlife Biologist
> > U.S. Fish and Wildlife Service
> > 1339 20th Street
> > Vero Beach, Florida 32960
> > office: 772-469-4243
> > fax: 772-562-4288
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> >
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disclosed to third parties

On Fri, Sep 28, 2018 at 1:19 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
Hi Connie,

That's great about the monthly meetings with the Seminole Tribe's natural resources team. I think I had heard about those, and I'm glad to hear that they are continuing. Are these teleconference meetings? Would it be possible for me to listen in sometime?
Thanks,
--Tim

On Fri, Sep 28, 2018 at 9:47 AM Cassler, Constance <constance_cassler@fws.gov> wrote:
Our office has a monthly coordination meeting wi h the Seminole Tribe's natural resources team. That is the mee ing we will be giving he briefing to and inviting he THPO. Kevin Palme could tell you how often he meets with the Miccosukee Tribe.

Connie

Constance L. Cassler, Ph.D.
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On Fri, Sep 28, 2018 at 9:41 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
Hi Connie,

You are welcome. Please note, in general we find it very important to include Tribes' Natural Resource Coordinators (actual titles vary) in our FWS communications with Tribes. The NEPA process requires Tr bal coordination, even if the proposed action has no potential for effect under NHPA (Sec. 106). Thus, it is important to contact not only the Chairperson and THPO, but also the Natural Resource Coordinator, so that all the key people with the Tribe have the same awareness.

Thanks,
--Tim

On Thu, Sep 27, 2018 at 4:07 PM Cassler, Constance <constance_cassler@fws.gov> wrote:
Thank you. This is really helpful.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
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On Thu, Sep 27, 2018 at 11:22 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
Hi Connie,

I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.

Best,
--Tim

On Thu, Sep 27, 2018 at 10:05 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
Hi Connie,

Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!

I will provide the updated contacts shortly.

Thank you,
--Tim

On Wed, Sep 26, 2018 at 4:40 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that he contacts were valid at that ime. I have already made the updates that Richard provided and am happy to make any additional updates that are needed as we prepare to send letters about he NOA, HCP, and dEIS. I appreciate the help.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
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On Wed, Sep 26, 2018 at 4:25 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hello,

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Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tr be of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

--Tim

On Wed, Sep 26, 2018 at 4:03 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.

Fred Dayhoff, Tribal Historic Preservation Officer
Miccosukee Tr be of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard,

I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to the meeting we sent letters to agency, organization, and Tribal representatives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in he Agency meeting on April 19, 2016.

We were scheduled to give a presentation on he HCP and EIS status to the Seminole Tribe this month, but there were technical difficulties with he Webinar. I believe the mee ing is re-scheduled for October 3rd.

We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts let ing them know how they can review the HCP and dEIS and provide comments.

Let me know if you have additional questions.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
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office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

> Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.
>
> David Dell
> Southeast Region
> HCP and Safe Harbors Coordinator
> 404/679-7313
> fax: 7081
> david_dell@fws.gov
>
> 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.
>
> On Wed, Sep 26, 2018 at 2:45 PM, Dell, David <david_dell@fws.gov> wrote:
>
> > Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.
> >
> > Our approach to the SHPO and Tribal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tribal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.
> >
> > Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.
> >
> > David Dell
> > Southeast Region
> > HCP and Safe Harbors Coordinator
> > 404/679-7313
> > fax: 7081
> > david_dell@fws.gov
> >
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> >
> > On Wed, Sep 26, 2018 at 1:51 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:
> >
> > > Hi Richard and Timothy,
> > >
> > > I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need anything else.
> > >
> > > Thank you,
> > >
> > > Connie
> > >
> > > Constance L. Cassler, Ph.D.
> > > Supervisory Fish and Wildlife Biologist
> > > U.S. Fish and Wildlife Service

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---------- Forwarded message ---------
From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

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On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:
> Rox - can you send Tim & I a copy of the conservation plan?
>
> Rick
>
> On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
> > Hello Rox and Kevin,
> >
> > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> >
> > Thank you,
> > --Tim
> >
> > ---------- Forwarded message ---------
> > From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tr be of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

--
Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

--
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U.S. Fish and Wildlife Service, Southeast Region
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--
**********
Kevin Palmer
U.S. Fish and Wildlife Service
South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, Florida 32960-3559
Phone: 772-469-4280
Fax: 772-562-4288 & 564-7393
Email: Kevin_Palmer@fws.gov

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Office: (413) 253-8731
Mobile: (413) 800-2071

**"Cassler, Constance" <constance_cassler@fws.gov>**

| | |
|---|---|
| **From:** | "Cassler, Constance" <constance_cassler@fws.gov> |
| **Sent:** | Fri Oct 26 2018 13:00:30 GMT-0600 (MDT) |
| **To:** | Charles Kelso <charles_kelso@fws.gov> |

**Subject:** Fwd: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
**Attachments:** image003.png Eastern Collier HCP-Tribal Contact Info Sep 2018.xlsx

Hi Chuck,

You mentioned to me he other day that there were some issues with the names/addresses that he RO sent for he Tribes. While I was trying to see what the issues were, I noticed that the spreadsheet you created to mail the letters to did not include some of the people that are on ROs list. They wanted us to send letters to all of hese people. Please work with Patti to send letters to Craig Van der Heiden (Miccosukee Tribe), Kristi Weatherford (Poarch Band of Creek Indians, use same address as the others in that tribe), Cherise Maples (Seminole Tribe), Rachel Dinwiddie (Seminole Na ion of Oklahoma). Also, the street number for Victoria Menchaca (Seminole Tribe) is different from the o her addresses. I think it should be the same. The letter hasn't come back yet, but we will have to re-send if it does come back to us.

Thank you,

Connie

Constance L. Cassler, Ph.D.
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To: Cassler, Constance <constance_cassler@fws.gov>
Cc: Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>

Hi Connie,

I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.

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> >
> > Connie
> >
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Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

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Connie

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office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.

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Hi Richard and Timothy,

I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since they were sent to us in April. I'm attaching bo h appendices. Please let me or Chuck know if you need any hing else.

Thank you,

Connie

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---------- Forwarded message ---------
From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street

Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

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> Rox - can you send Tim & I a copy of the conservation plan?
>
> Rick
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> On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
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> > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> >
> > Thank you,
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> > ---------- Forwarded message ---------
> > From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>
> >
> > Good Afternoon,
> >
> > I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?
> >
> > Sincerely,
> >
> > Victoria Menchaca, M.A.
> >
> > Compliance Review Specialist
> >
> > Seminole Tribe of Florida
> >
> > Tribal Historic Preservation Office
> >
> > 30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

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## "Kelso, Charles" <charles_kelso@fws.gov>

| | |
|---|---|
| **From:** | "Kelso, Charles" <charles_kelso@fws.gov> |
| **Sent:** | Fri Oct 26 2018 13:29:25 GMT-0600 (MDT) |
| **To:** | Constance Cassler <constance_cassler@fws.gov> |
| **Subject:** | Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png 20181026CopyChucksmarkupAECOMAgency and Officials Mailing List 2018-10-17.xlsx |

Thanks Connie,
I've attached a copy of the list that was used on the mailing. The sheet named "Combined Sheets" was used to populate the merge fields. A handful of those addresses were still under investigation at the time of the mailing. I'll check it against the above "Eastern Collier HCP-Tribal Contact Info Sep 2018" sheet to see where any tribal contacts don't agree.

On Fri, Oct 26, 2018 at 3:01 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

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You mentioned to me he other day that there were some issues with the names/addresses that he RO sent for he Tribes. While I was trying to see what the issues were, I noticed that the spreadsheet you created to mail he letters to did not include some of the people that are on ROs list. They wanted us to send letters to all of hese people. Please work with Patti to send letters to Craig Van der Heiden (Miccosukee Tribe), Kristi Weatherford (Poarch Band of Creek Indians, use same address as the others in that tribe), Cherise Maples (Seminole Tribe), Rachel Dinwiddie (Seminole Na ion of Oklahoma). Also, he street number for Victoria Menchaca (Seminole Tribe) is different from the o her addresses. I hink it should be the same. The letter hasn't come back yet, but we will have to re-send if it does come back to us.

Thank you,

Connie

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---------- Forwarded message ---------
From: **Binzen, Timothy** <timothy_binzen@fws.gov>
Date: Thu, Sep 27, 2018 at 11:22 AM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Cassler, Constance <constance_cassler@fws.gov>
Cc: Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>

Hi Connie,

I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.

Best,
--Tim

On Thu, Sep 27, 2018 at 10:05 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

> Hi Connie,
>
> Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!
>
> I will provide the updated contacts shortly.
>
> Thank you,
> --Tim
>
> On Wed, Sep 26, 2018 at 4:40 PM Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that time. I have already made the updates that Richard provided and am happy to make any additional updates that are needed as we prepare to send letters about he NOA, HCP, and dEIS. I appreciate the help.
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
> > Supervisory Fish and Wildlife Biologist
> > U.S. Fish and Wildlife Service
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> > On Wed, Sep 26, 2018 at 4:25 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
> >
> > > Hello,
> > >
> > > The Tribal contact information that was used is badly out of date. The Chairpersons are incorrect for the Miccosukee, Muscogee

(Creek), and Seminole Tribe of Florida. This does not make FWS look good at all. In addition, the specified THPO for the Poarch Band is deceased. For those Tribes that have Natural Resource Coordinators, those people should have been notified, in addition to the THPOs.

Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

--Tim

On Wed, Sep 26, 2018 at 4:03 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

> Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.
>
> Fred Dayhoff, Tribal Historic Preservation Officer
> Miccosukee Tribe of Indians of Florida
> P.O. Box 440021, Tamiami Station
> Miami, Florida 33144
>
> Carolyn M. White, Regulatory Affairs Division Director
> & Acting Tribal Historic Preservation Officer
> Poarch Band of Creek Indians
> 5811 Jack Springs Road, Building 500
> Atmore, AL 36502
>
> Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address].
> Let me know if you need email addresses or phone numbers.
> Seminole Indian Tribe of Florida
> AH-TAH-THI-KI Museum
> Tribal Historic Preservation Office
> 30290 Josie Billie Hwy, PMB 1004
> Clewiston, FL 33440
>
> Ms. Corain Lowe-Zepeda, THPO
> Muscogee (Creek) Nation
> Cultural Preservation Office
> P.O. Box 580
> Okmulgee, Oklahoma 74447
>
> Theodore Isham, Tribal Historic Preservation Officer
> Seminole Nation of Oklahoma
> Historic Preservation Office
> 12555 NS 3540
> P.O. Box 1498
> Wewoka, Oklahoma 74884
>
> Rick
>
> On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > Hi Richard,
> >
> > I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to he meeting we sent letters to agency, organization, and Tribal representatives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in the Agency meeting on April 19, 2016.
> >
> > We were scheduled to give a presentation on the HCP and EIS status to he Seminole Tribe this mon h, but there were technical difficulties with the Webinar. I believe the meeting is re-scheduled for October 3rd.
> >
> > We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts letting them know how they can review the HCP and dEIS and provide comments.
> >
> > Let me know if you have additional ques ions.
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
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> > Tribal Historic Preservation Office
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> > Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtr be.com

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(772)469-4241
Charles_Kelso@fws.gov

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**"Cassler, Constance" <constance_cassler@fws.gov>**

**From:** "Cassler, Constance" <constance_cassler@fws.gov>
**Sent:** Fri Oct 26 2018 13:42:28 GMT-0600 (MDT)
**To:** Charles Kelso <charles_kelso@fws.gov>
**Subject:** Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
**Attachments:** image003.png

Thanks.

Connie

Constance L. Cassler, Ph.D.
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>
> ---------- Forwarded message ---------
> From: **Binzen, Timothy** <timothy_binzen@fws.gov>
> Date: Thu, Sep 27, 2018 at 11:22 AM
> Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> To: Cassler, Constance <constance_cassler@fws.gov>
> Cc: Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>
>
> Hi Connie,
>
> I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.
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> Best,
> --Tim
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> > Hi Connie,
> >
> > Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!

I will provide the updated contacts shortly.

Thank you,
--Tim

On Wed, Sep 26, 2018 at 4:40 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that time. I have already made the updates that Richard provided and am happy to make any additional updates that are needed as we prepare to send letters about he NOA, HCP, and dEIS. I appreciate the help.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

--Tim

On Wed, Sep 26, 2018 at 4:03 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.

Fred Dayhoff, Tribal Historic Preservation Officer
Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard,

I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to he meeting we sent letters to agency, organization, and Tribal representa ives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in the Agency meeting on April 19, 2016.

We were scheduled to give a presentation on the HCP and EIS status to he Seminole Tribe this mon h, but there were technical difficulties with the Webinar. I believe the meeting is re-scheduled for October 3rd.

We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts let ing them know how they can review the HCP and dEIS and provide comments.

Let me know if you have additional ques ions.

Connie

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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.

Our approach to the SHPO and Tribal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tribal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.

Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.

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On Wed, Sep 26, 2018 at 1:51 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard and Timothy,

I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need any hing else.

Thank you,

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---------- Forwarded message ---------
From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

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> Rick
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> >
> > Thank you,
> > --Tim
> >
> > ---------- Forwarded message ---------
> > From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

--
Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

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--
Chuck Kelso
U.S. Fish and Wildlife Service
South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960-3559
(772)469-4241
Charles_Kelso@fws.gov

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## "Kelso, Charles" <charles_kelso@fws.gov>

**From:** "Kelso, Charles" <charles_kelso@fws.gov>
**Sent:** Fri Oct 26 2018 13:49:41 GMT-0600 (MDT)
**To:** Constance Cassler <constance_cassler@fws.gov>
**Subject:** Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
**Attachments:** img-X18101557-0001 (2).pdf

The RO list has the emails. I can email folks emails and a general notification letter (attached).

On Fri, Oct 26, 2018 at 3:43 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Thanks.

Connie

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On Fri, Oct 26, 2018 at 3:29 PM Kelso, Charles <charles_kelso@fws.gov> wrote:

Thanks Connie,
I've attached a copy of the list that was used on the mailing. The sheet named "Combined Sheets" was used to populate the merge fields. A handful of those addresses were still under investigation at the time of the mailing. I'll check it against the above "Eastern Collier HCP-Tribal Contact Info Sep 2018" sheet to see where any tribal contacts don't agree.

On Fri, Oct 26, 2018 at 3:01 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Chuck,

You mentioned to me he other day that there were some issues wi h the names/addresses that he RO sent for he Tribes. While I was trying to see what the issues were, I noticed that he spreadsheet you created to mail the letters to did not include some of the people that are on ROs list. They wanted us to send letters to all of these people. Please work with Patti to send letters to Craig Van der Heiden (Miccosukee Tribe), Kristi Weatherford (Poarch Band of Creek Indians, use same address as he o hers in hat tribe), Cherise Maples (Seminole Tribe), Rachel Dinwiddie (Seminole Nation of Oklahoma). Also, the street number for Victoria Menchaca (Seminole Tribe) is different from he other addresses. I think it should be the same. The letter hasn't come back yet, but we will have to re-send if it does come back to us.

Thank you,

Connie

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To: Cassler, Constance <constance_cassler@fws.gov>
Cc: Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>

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Best,
--Tim

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I will provide the updated contacts shortly.

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> Miami, Florida 33144
>
> Carolyn M. White, Regulatory Affairs Division Director
> & Acting Tribal Historic Preservation Officer
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> 5811 Jack Springs Road, Building 500
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> Ms. Corain Lowe-Zepeda, THPO
> Muscogee (Creek) Nation
> Cultural Preservation Office
> P.O. Box 580
> Okmulgee, Oklahoma 74447
>
> Theodore Isham, Tribal Historic Preservation Officer
> Seminole Nation of Oklahoma
> Historic Preservation Office
> 12555 NS 3540
> P.O. Box 1498
> Wewoka, Oklahoma 74884
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> > Constance L. Cassler, Ph.D.
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> >
> > Victoria Menchaca, M.A.
> >
> > Compliance Review Specialist
> >
> > Seminole Tribe of Florida
> >
> > Tribal Historic Preservation Office
> >
> > 30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtr be.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

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(912) 257-5434 [Cell]
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Charles_Kelso@fws.gov

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## "Cassler, Constance" <constance_cassler@fws.gov>

**From:** "Cassler, Constance" <constance_cassler@fws.gov>
**Sent:** Fri Oct 26 2018 13:52:35 GMT-0600 (MDT)
**To:** Charles Kelso <charles_kelso@fws.gov>
**Subject:** Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
**Attachments:** img-X18101557-0001 (2).pdf

Chuck,

I know hat is the easiest way, but not sure if it is OK in this case. Please either send letters, or ask the RO Tribal liaison team if an email is OK.

Thanks,

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
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office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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On Fri, Oct 26, 2018 at 3:50 PM Kelso, Charles <charles_kelso@fws.gov> wrote:

> The RO list has the emails. I can email folks emails and a general notification letter (attached).
>
> On Fri, Oct 26, 2018 at 3:43 PM Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > Thanks.
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
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Thank you,

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---------- Forwarded message ----------
From: **Binzen, Timothy** <timothy_binzen@fws.gov>
Date: Thu, Sep 27, 2018 at 11:22 AM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Cassler, Constance <constance_cassler@fws.gov>
Cc: Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>

Hi Connie,

I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.

Best,
--Tim

On Thu, Sep 27, 2018 at 10:05 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

> Hi Connie,
>
> Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!
>
> I will provide the updated contacts shortly.
>
> Thank you,
> --Tim
>
> On Wed, Sep 26, 2018 at 4:40 PM Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that ime. I have already made the updates hat Richard provided and am happy to make any additional updates that are needed as we prepare to send letters about the NOA, HCP, and dEIS. I appreciate the help.
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
> > Supervisory Fish and Wildlife Biologist
> > U.S. Fish and Wildlife Service
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> >
> > On Wed, Sep 26, 2018 at 4:25 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
> >
> > > Hello,
> > >
> > > The Tribal contact information that was used is badly out of date. The Chairpersons are incorrect for the Miccosukee, Muscogee

(Creek), and Seminole Tr be of Florida. This does not make FWS look good at all. In addition, the specified THPO for the Poarch Band is deceased. For those Tribes that have Natural Resource Coordinators, those people should have been notified, in addition to the THPOs.

Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

--Tim

On Wed, Sep 26, 2018 at 4:03 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

> Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.
>
> Fred Dayhoff, Tribal Historic Preservation Officer
> Miccosukee Tribe of Indians of Florida
> P.O. Box 440021, Tamiami Station
> Miami, Florida 33144
>
> Carolyn M. White, Regulatory Affairs Division Director
> & Acting Tribal Historic Preservation Officer
> Poarch Band of Creek Indians
> 5811 Jack Springs Road, Building 500
> Atmore, AL 36502
>
> Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
> Seminole Indian Tribe of Florida
> AH-TAH-THI-KI Museum
> Tribal Historic Preservation Office
> 30290 Josie Billie Hwy, PMB 1004
> Clewiston, FL 33440
>
> Ms. Corain Lowe-Zepeda, THPO
> Muscogee (Creek) Nation
> Cultural Preservation Office
> P.O. Box 580
> Okmulgee, Oklahoma 74447
>
> Theodore Isham, Tribal Historic Preservation Officer
> Seminole Nation of Oklahoma
> Historic Preservation Office
> 12555 NS 3540
> P.O. Box 1498
> Wewoka, Oklahoma 74884
>
> Rick
>
> On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > Hi Richard,
> >
> > I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to he meeting we sent letters to agency, organiza ion, and Tribal representa ives. I'm attaching the list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in he Agency mee ing on April 19, 2016.
> >
> > We were scheduled to give a presentation on the HCP and EIS status to the Seminole Tribe this month, but there were technical difficulties with the Webinar. I believe the meeting is re-scheduled for October 3rd.
> >
> > We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts let ing them know how they can review the HCP and dEIS and provide comments.
> >
> > Let me know if you have additional questions.
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
> > Supervisory Fish and Wildlife Biologist
> > U.S. Fish and Wildlife Service
> > 1339 20th Street
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> >
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> >
> > On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:
> >
> > > Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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On Wed, Sep 26, 2018 at 2:45 PM, Dell, David <david_dell@fws.gov> wrote:

> Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.
>
> Our approach to the SHPO and Tribal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tribal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.
>
> Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.
>
> David Dell
> Southeast Region
> HCP and Safe Harbors Coordinator
> 404/679-7313
> fax: 7081
> david_dell@fws.gov
>
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>
> On Wed, Sep 26, 2018 at 1:51 PM, Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > Hi Richard and Timothy,
> >
> > I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of the most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need anything else.
> >
> > Thank you,
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
> > Supervisory Fish and Wildlife Biologist
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> >
> > ---------- Forwarded message ---------
> > From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
> > Date: Wed, Sep 26, 2018 at 1:32 PM
> > Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
> > Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>
> >
> > I think Connie or Chuck can give you access to the google drive. It is huge.
> >
> > Roxanna Hinzman, Field Supervisor
> > U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
> > 1339 20th Street
> > Vero Beach, FL 32960
> > Desk 772-469-4309

Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

*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.

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---

On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

> Rox - can you send Tim & I a copy of the conservation plan?
>
> Rick
>
> On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
>
> > Hello Rox and Kevin,
> >
> > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> >
> > Thank you,
> > --Tim
> >
> > ---------- Forwarded message ---------
> > From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>
> >
> > Good Afternoon,
> >
> > I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?
> >
> > Sincerely,
> >
> > Victoria Menchaca, M.A.
> >
> > Compliance Review Specialist
> >
> > Seminole Tribe of Florida
> >
> > Tribal Historic Preservation Office
> >
> > 30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

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Email: victoriamenchaca@semtribe.com

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## "Kelso, Charles" <charles_kelso@fws.gov>

**From:** "Kelso, Charles" <charles_kelso@fws.gov>
**Sent:** Fri Oct 26 2018 14:43:55 GMT-0600 (MDT)
**To:** Constance Cassler <constance_cassler@fws.gov>
**Subject:** Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
**Attachments:** img-X18101557-0001 (2).pdf

OK,
I'll send them the letter.

On Fri, Oct 26, 2018 at 3:53 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Chuck,

I know hat is the easiest way, but not sure if it is OK in this case. Please either send letters, or ask the RO Tribal liaison team if an email is OK.

Thanks,

Connie

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To: Cassler, Constance <constance_cassler@fws.gov>
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Best,
--Tim

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--Tim

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On Wed, Sep 26, 2018 at 4:25 PM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

Hello,

The Tribal contact information that was used is badly out of date. The Chairpersons are incorrect for the Miccosukee, Muscogee (Creek), and Seminole Tribe of Florida. This does not make FWS look good at all. In addition, the specified THPO for the Poarch Band is deceased. For those Tribes that have Natural Resource Coordinators, those people should have been notified, in addition to the THPOs.

Rick has provided you with updated THPO contacts. I will provide updated contact information for the Tribal leaders and Natural Resource Coordinators.

I will also draft the response to the initial inquiry from Victoria Menchaca of the Seminole Tribe of Florida (dated Sep. 24). This draft will be a document that I will share with this group, to ensure accuracy.

--Tim

On Wed, Sep 26, 2018 at 4:03 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

Connie - looks like the mailing list needs an update. Here's an updated list for the THPOs.

Fred Dayhoff, Tribal Historic Preservation Officer
Miccosukee Tribe of Indians of Florida
P.O. Box 440021, Tamiami Station
Miami, Florida 33144

Carolyn M. White, Regulatory Affairs Division Director
& Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore, AL 36502

Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
Seminole Indian Tribe of Florida
AH-TAH-THI-KI Museum
Tribal Historic Preservation Office
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Ms. Corain Lowe-Zepeda, THPO
Muscogee (Creek) Nation
Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

On Wed, Sep 26, 2018 at 3:54 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Richard,

I wanted to mention we had a public scoping meeting on April 12, 2016, to explain the HCP and request comments to help shape the EIS and we also had an agency webinar. Prior to the mee ing we sent letters to agency, organization, and Tribal representatives. I'm attaching he list of Tribal representatives we sent letter to. We did not receive comments from any of the Tribes nor did any of the Tribes participate in he Agency mee ing on April 19, 2016.

We were scheduled to give a presentation on the HCP and EIS status to the Seminole Tribe this month, but there were technical difficulties with the Webinar. I believe the meeting is re-scheduled for October 3rd.

We expect the draft EIS to go in the Federal Register soon, and will send letters to the same Tribal contacts let ing them know how they can review the HCP and dEIS and provide comments.

Let me know if you have additional questions.

Connie

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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On Wed, Sep 26, 2018 at 2:46 PM Dell, David <david_dell@fws.gov> wrote:

Rick: Also just read your last question. No, we have not excluded activities from 106 consultation.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
404/679-7313
fax: 7081
david_dell@fws.gov

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Everyone: The short answer is that we have not initiated section 106 consultation with the Seminoles. We have, however, coordinated with them as part of the NEPA scoping process. I also understand that the FO has been conducting face-to-face meetings with the Tribe.

Our approach to the SHPO and Tribal consultations is described in the dEIS. The HCP would establish a programmatic approach to authorizing individual developments. The applicant/permittees would be required to initiate SHPO and Tr bal consultations as they fulfill state cultural resource laws and Corps wetlands permitting. Because the HCP would work programmatically, we do not know specific development footprints at this time.

Looking at your reply to Rox and Connie -- we have not advertised the dEIS yet, the tribes will have the chance to review it. For your information, here it is attached.

David Dell
Southeast Region
HCP and Safe Harbors Coordinator
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Hi Richard and Timothy,

I sent you a link to the E. Collier HCP. Please let me know if you didn't receive it. The HCP also includes 2 appendices which weren't part of he most recent draft, but haven't changed since they were sent to us in April. I'm attaching both appendices. Please let me or Chuck know if you need any hing else.

Thank you,

Connie

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---------- Forwarded message ---------
From: **Hinzman, Roxanna** <roxanna_hinzman@fws.gov>
Date: Wed, Sep 26, 2018 at 1:32 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

I think Connie or Chuck can give you access to the google drive. It is huge.

Roxanna Hinzman, Field Supervisor
U.S. Fish and Wildlife Service South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960
Desk 772-469-4309
Cell 772-532-1247
Fax 772-562-4288
roxanna_hinzman@fws.gov

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On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

> Rox - can you send Tim & I a copy of the conservation plan?
>
> Rick
>
> On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
>
> > Hello Rox and Kevin,
> >
> > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> >
> > Thank you,
> > --Tim
> >
> > ---------- Forwarded message ---------
> > From: **Victoria Menchaca** <VictoriaMenchaca@semtribe.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>
> > Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>
> >
> > Good Afternoon,
> >
> > I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?
> >
> > Sincerely,
> >
> > Victoria Menchaca, M.A.
> >
> > Compliance Review Specialist

Seminole Tr be of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
Timothy Binzen
Tribal Liaison (Northeast & Southeast Regions)
U.S. Fish and Wildlife Service
External Affairs
300 Westgate Center Drive
Hadley, MA 01035
Office: (413) 253-8731
Mobile: (413) 800-2071

--
Richard S. Kanaski, Regional Historic Preservation Officer &
Regional Archaeologist
U.S. Fish and Wildlife Service, Southeast Region
(843) 784-6310 [Office]
(912) 257-5434 [Cell]
richard_kanaski@fws.gov

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--
Chuck Kelso
U.S. Fish and Wildlife Service
South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960-3559
(772)469-4241
Charles_Kelso@fws.gov

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## "Cassler, Constance" <constance_cassler@fws.gov>

**From:** "Cassler, Constance" <constance_cassler@fws.gov>
**Sent:** Fri Oct 26 2018 14:47:14 GMT-0600 (MDT)
**To:** Charles Kelso <charles_kelso@fws.gov>
**Subject:** Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
**Attachments:** img-X18101557-0001 (2).pdf

Thanks.

Constance L. Cassler, Ph.D.
Supervisory Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, Florida 32960
office: 772-469-4243
fax: 772-562-4288
email: constance_cassler@fws.gov

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On Fri, Oct 26, 2018 at 4:44 PM Kelso, Charles <charles_kelso@fws.gov> wrote:

> OK,
> I'll send them the letter.
>
> On Fri, Oct 26, 2018 at 3:53 PM Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > Chuck,
> >
> > I know hat is the easiest way, but not sure if it is OK in this case. Please either send letters, or ask the RO Tribal liaison team if an email is OK.
> >
> > Thanks,
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
> > Supervisory Fish and Wildlife Biologist
> > U.S. Fish and Wildlife Service
> > 1339 20th Street
> > Vero Beach, Florida 32960
> > office: 772-469-4243

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On Fri, Oct 26, 2018 at 3:50 PM Kelso, Charles <charles_kelso@fws.gov> wrote:

The RO list has the emails. I can email folks emails and a general notification letter (attached).

On Fri, Oct 26, 2018 at 3:43 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Thanks.

Connie

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On Fri, Oct 26, 2018 at 3:29 PM Kelso, Charles <charles_kelso@fws.gov> wrote:

Thanks Connie,
I've attached a copy of the list that was used on the mailing. The sheet named "Combined Sheets" was used to populate the merge fields. A handful of those addresses were still under investigation at the time of the mailing. I'll check it against the above "Eastern Collier HCP-Tribal Contact Info Sep 2018" sheet to see where any tribal contacts don't agree.

On Fri, Oct 26, 2018 at 3:01 PM Cassler, Constance <constance_cassler@fws.gov> wrote:

Hi Chuck,

You mentioned to me the other day that there were some issues wi h the names/addresses that the RO sent for the Tribes. While I was trying to see what he issues were, I no iced that the spreadsheet you created to mail the letters to did not include some of the people hat are on ROs list. They wanted us to send letters to all of these people. Please work with Patti to send letters to Craig Van der Heiden (Miccosukee Tribe), Kris i Weatherford (Poarch Band of Creek Indians, use same address as the o hers in hat tribe), Cherise Maples (Seminole Tribe), Rachel Dinwiddie (Seminole Nation of Oklahoma). Also, the street number for Victoria Menchaca (Seminole Tribe) is different from the other addresses. I think it should be the same. The letter hasn't come back yet, but we will have to re-send if it does come back to us.

Thank you,

Connie

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Supervisory Fish and Wildlife Biologist
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---------- Forwarded message ---------
From: **Binzen, Timothy** <timothy_binzen@fws.gov>
Date: Thu, Sep 27, 2018 at 11:22 AM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: Cassler, Constance <constance_cassler@fws.gov>
Cc: Richard Kanaski <richard_kanaski@fws.gov>, David Dell <david_dell@fws.gov>, Charles Kelso <charles_kelso@fws.gov>, Roxanna Hinzman <roxanna_hinzman@fws.gov>, Robert Tawes <Robert_Tawes@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>

Hi Connie,

I have attached an updated worksheet of Tribal contact information for the Eastern Collier HCP.

Best,
--Tim

On Thu, Sep 27, 2018 at 10:05 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:

> Hi Connie,
>
> Thank you for the clarification. I apologize if I overreacted, I thought that these were more recent communications with these Tribes!
>
> I will provide the updated contacts shortly.
>
> Thank you,
> --Tim
>
> On Wed, Sep 26, 2018 at 4:40 PM Cassler, Constance <constance_cassler@fws.gov> wrote:
>
> > FYI, Our consultants working on the EIS created this list for the 2016 NOI. It was our understanding that the contacts were valid at that ime. I have already made the updates hat Richard provided and am happy to make any additional updates that are needed as we prepare to send letters about the NOA, HCP, and dEIS. I appreciate the help.
> >
> > Connie
> >
> > Constance L. Cassler, Ph.D.
> > Supervisory Fish and Wildlife Biologist
> > U.S. Fish and Wildlife Service
> > 1339 20th Street
> > Vero Beach, Florida 32960
> > office: 772-469-4243
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> > > > P.O. Box 440021, Tamiami Station
> > > > Miami, Florida 33144
> > > >
> > > > Carolyn M. White, Regulatory Affairs Division Director
> > > > & Acting Tribal Historic Preservation Officer
> > > > Poarch Band of Creek Indians
> > > > 5811 Jack Springs Road, Building 500
> > > > Atmore, AL 36502
> > > >
> > > > Paul Backhouse, Ph.D., Tribal Historic Preservation Officer [cc: Bradley M. Mueller, MA, Compliance Supervisor, at same address]. Let me know if you need email addresses or phone numbers.
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> > > > Tribal Historic Preservation Office
> > > > 30290 Josie Billie Hwy, PMB 1004
> > > > Clewiston, FL 33440
> > > >
> > > > Ms. Corain Lowe-Zepeda, THPO
> > > > Muscogee (Creek) Nation
```
```

Cultural Preservation Office
P.O. Box 580
Okmulgee, Oklahoma 74447

Theodore Isham, Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
Historic Preservation Office
12555 NS 3540
P.O. Box 1498
Wewoka, Oklahoma 74884

Rick

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> > HCP and Safe Harbors Coordinator
> > 404/679-7313
> > fax: 7081
> > david_dell@fws.gov
> >
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> > >
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>
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To: Richard Kanaski <richard_kanaski@fws.gov>, Constance Cassler <constance_cassler@fws.gov>, Kelso, Charles <charles_kelso@fws.gov>
Cc: Timothy Binzen <timothy_binzen@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Zintkala Eiring <zintkala_eiring@fws.gov>, Jeffrey M Fleming <jeffrey_m_fleming@fws.gov>

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On Wed, Sep 26, 2018 at 12:16 PM Kanaski, Richard <richard_kanaski@fws.gov> wrote:

> Rox - can you send Tim & I a copy of the conservation plan?
>
> Rick
>
> On Wed, Sep 26, 2018 at 11:51 AM Binzen, Timothy <timothy_binzen@fws.gov> wrote:
>
> > Hello Rox and Kevin,
> >
> > Would you please guide me in preparing an appropriate response to this inquiry from the Seminole Tribe?
> >
> > Thank you,
> > --Tim
> >
> > ---------- Forwarded message ---------
> > From: **Victoria Menchaca** <VictoriaMenchaca@semtr be.com>
> > Date: Mon, Sep 24, 2018 at 4:29 PM
> > Subject: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
> > To: comments-eastcollierhcp@fws.gov <comments-eastcollierhcp@fws.gov>, Timothy_Binzen@fws.gov <Timothy_Binzen@fws.gov>

Cc: Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtr be.com>

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tr be of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

--
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(912) 257-5434 [Cell]
richard_kanaski@fws.gov

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--
Chuck Kelso
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South Florida Ecological Services Field Office
1339 20th Street
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(772)469-4241
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**"Binzen, Timothy" <timothy_binzen@fws.gov>**

**From:** "Binzen, Timothy" <timothy_binzen@fws.gov>

| | |
|---|---|
| **Sent:** | Thu Mar 28 2019 12:49:02 GMT-0600 (MDT) |
| **To:** | "Cassler, Constance" <constance_cassler@fws.gov>, Kevin Palmer <kevin_palmer@fws.gov>, Richard Kanaski <richard_kanaski@fws.gov> |
| **Subject:** | Fwd: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan |
| **Attachments:** | image003.png image003.png |

Hello Connie, Kevin, Rick,

Thank you for the call this afternoon.

Here is a response I sent to the Seminole Tr be's Victoria Menchaca, Paul Backhouse (THPO) and Brad Mueller last year, in response to Victoria's query about Sec. 106 and the HCP. They were provided with the dEIS as an attachment.

--Tim

---------- Forwarded message ---------
From: **Binzen, Timothy** <timothy_binzen@fws.gov>
Date: Fri, Sep 28, 2018 at 4:01 PM
Subject: Re: [EXTERNAL] Eastern Collier Multiple Species Habitat Conservation Plan
To: <VictoriaMenchaca@semtribe.com>
Cc: <comments-eastcollierhcp@fws.gov>, Paul Backhouse <PaulBackhouse@semtribe.com>, Bradley Mueller <bradleymueller@semtribe.com>

Dear Victoria,

Thank you for your email message of September 24. You asked about Tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan (HCP), and consultation that the U.S. Fish and Wildlife Service (Service) has conducted under Section 106 of the National Historic Preservation Act.

Formulation of this complex HCP has taken several years, has followed the NEPA scoping process, and will conclude with the Service deciding whether to issue an incidental take permit (ITP). During the scoping process, the Service has coordinated with the Seminole Tribe of Florida. The Service's South Florida Ecological Services Field Office (SFESFO) conducts monthly coordination meetings (usually by teleconference) with representatives of the Seminole Tribe. The HCP and draft Environmental Impact Statement (dEIS) have been mentioned in these meetings. In-depth discussions are planned for the near future. A webinar to discuss this topic with the Tribe is tentatively scheduled for October 3. The THPO staff would be welcome to participate in this webinar.

Regarding the National Historic Preservation Act (Sec. 106) and the HCP, the Service's approach to Tr bal consultation (and SHPO coordination) is described in the forthcoming dEIS for the HCP. The HCP would establish a programmatic approach to authorizing individual development projects within the HCP area. The applicant/permittee for a proposed development project would be required to comply with Sec. 106 and with state cultural resource laws (because of the need for Corps wetlands permitting, for example). Consequently, Sec. 106 Tribal consultation and SHPO coordination would be required for future development projects that may be proposed within the HCP area. (Because the HCP would work programmatically, the Sec. 106 Areas of Potential Effect (APEs) of specific proposed future development projects are not known at this time.) The APE encompasses a 51,000-acre area in which covered land use activities may occur (area designated as "covered" in Figure 2.1-1 of the dEIS). Up to 45,000 acres of impacts would be authorized.

The Service recognizes the importance of collaborating with the Seminole Tribe on conservation and historic preservation issues, and looks forward to addressing your concerns during the ongoing development of the HCP and its subsequent implementation, if the Service issues an ITP. A copy of the dEIS will be sent directly to the THPO.

Thank you for your interest in the Eastern Collier Multiple Species Habitat HCP. Please let me know if you have any additional questions or concerns.

Respectfully,

Tim Binzen

On Mon, Sep 24, 2018 at 4:29 PM Victoria Menchaca <VictoriaMenchaca@semtribe.com> wrote:

Good Afternoon,

I am writing to inquire about tribal consultation concerning the Eastern Collier Multiple Species Habitat Conservation Plan. Does the US Fish and Wildlife have any records that indicate consultation occurred under Section 106 of the National Historic Preservation Act for this permit?

Sincerely,

Victoria Menchaca, M.A.

Compliance Review Specialist

Seminole Tribe of Florida

Tribal Historic Preservation Office

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Tel: 863-983-6549 Ext: 12216

Email: victoriamenchaca@semtribe.com

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# APPENDIX A

# DECONSTRUCTED ACTIVITIES FOR THE COVERED SPECIES

**GENERAL NOTES FOR DECONSTRUCTED COVERED ACTIVITIES SPREADSHEETS**

The following spreadsheets analyze the potential effects of the Covered Activities identified in the Eastern Collier Multiple Species HCP (""ECMSHCP"") on each of the ECMSHCP Covered Species, by breaking each Covered Activity into sub-activities. The Covered Activities identified in the ECMSHCP are limited to residential and commercial development and earth mining, along with traditional land management activities. Future activities of third parties -- including, for example, the actions of the individuals who will one day live in the residential developments -- are not analyzed in this spreadsheet because the applicants do not have control over those future activities and do not seek take coverage for them.

The information provided in these spreadsheets identify, for each Covered Species, stressors that may result from each sub-activity. The spreadsheets also provide estimates of the distance from each sub-activity within which the species may experience a stressor ("Spatial Distribution"), and the estimated frequency and duration of each potential stressor ("Temporal Distribution"). The effects of the potential stressors on species are variable, but in most cases are limited to avoidance behaviors and associated effects.

The vast majority of direct impacts will potentially occur within agricultural areas that have been historically cleared and managed, and retain only remnant patches of native habitats. Although impact analyses consider land cover as static, agricultural practices rotate in many areas through cropping cycles where there is essentially no crop cover (i.e., barren land) during portions of the year. Species exposure analyses need to consider that the HCP Covered Activities may occur at times when an area is mapped as one land cover (e.g., row crops), but in fact it is a barren field when construction activities are initiated.

Estimated distances for the effects of a stressor on a given species -- referred to in the spreadsheet as the "Spatial Distribution" -- were the subject of an intensive search of peer-reviewed literature and agency guidance. In most cases, the Spatial Distribution was quantified in the literature. For a few species, reliable estimates have not been published, so conservative estimates based on species behavior and expert opinion (narrative descriptions) were used. Where published literature was the source for data, the in-text citation is listed on the spreadsheet, and the full citation is provided in the Literature Cited section of the HCP document.

# APPENDIX A-1

# DECONSTRUCTED ACTIVITIES FOR THE FLORIDA PANTHER

**FLORIDA PANTHER: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: Janis and Clark (2002); McCarthy and Fletcher (2015) for ORV effects; 300m radius proposed for daytime construction (no published data)

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 180 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 180 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 180 m | 1-3 days; one-time activity | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV vehicle use | Disturbance; noise | 180 m | 1-3 days; one-time activity | Sub-activity similar to baseline (land managers; hunters) |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 180 m | 1-3 days; one-time activity | Sub-activity similar to baseline (land managers; hunters) |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 300 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 300 m | <1 day per acre; once | Already barren post-harvest; habitat value diminished |
| | Citrus clearing | Habitat loss; disturbance; noise | 300 m | 3 days per acre; once | Panthers partly habituated to farm machinery and humans |
| | Pasture clearing | Habitat loss; disturbance; noise | 300 m | <1 day per acre; once | Clearing effects primarily near field edges |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 300 m | <1 days per acre; once | Generally isolated remnants; field edges |
| | Native forested clearing | Habitat loss; disturbance; noise | 300 m | 3 days per acre; once | Generally isolated remnants; field edges |
| | Exotic vegetation clearing | Disturbance; noise | 300 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 300 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 300 m | 60 days (5 days/wk) | Effects primarily near forest edges for earth moving. |
| | Bulldozing | Noise; human disturbance | 300 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 300 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 300 m | 10-60 days per zone | Effects increase near forest edges; habituation to ag pumping |
| General Construction | Small vehicle traffic | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 300 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 300 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 300 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 300 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 300 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 300 m | 60 days per zone | Post-clearing wildlife habituation as activities continue |
| | Road drainage grading | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 300 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 300 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 300 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 300 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 300 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 300 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 300 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 300 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 300 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 300 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 1000 feet | 360 days per zone | Post-clearing wildlife habituation as activities continue |
| | Interior construction | Noise; human disturbance | 1000 feet | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 1000 feet | 360 days per zone | |
| Road lighting/signage | Streetlights, signals installation | Noise; human disturbance | 1000 feet | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 1000 feet | 60 days | |
| | Recreational lighting install | Noise; human disturbance | 1000 feet | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**FLORIDA PANTHER: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: Janis and Clark (2002); McCarthy and Fletcher (2015) for ORV effects; 300m radius proposed for daytime construction (no published data)

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 180 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 180 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 180 m | 1-3 days; one-time activity | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV vehicle use | Disturbance; noise | 180 m | 1-3 days; one-time activity | Sub-activity similar to baseline (land managers; hunters) |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 180 m | 1-3 days; one-time activity | Sub-activity similar to baseline (land managers; hunters) |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 300 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 300 m | <1 day per acre; once | Already barren post-harvest; habitat value diminished |
| | Citrus clearing | Habitat loss; disturbance; noise | 300 m | 3 days per acre; once | Panthers partly habituated to farm machinery and humans |
| | Pasture clearing | Habitat loss; disturbance; noise | 300 m | <1 days per acre; once | |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 300 m | <1 days per acre; once | Generally isolated remnants; field edges |
| | Native forested clearing | Habitat loss; disturbance; noise | 300 m | 3 days per acre; once | Generally isolated remnants; field edges |
| | Exotic vegetation clearing | Disturbance; noise | 300 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 300 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 300 m | >5 years (5 days/wk) | Depends on size/type of mine |
| | De-watering/pumping | Noise; human disturbance | 300 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 300 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 300 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 300 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 300 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 300 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 300 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 300 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 300 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 300 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 300 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 300 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 300 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 300 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 300 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 300 m | 180 days (5 days/wk); | Effects increase near forest edges |
| | Bulldozing | Noise; human disturbance | 300 m | 180 days per zone | Effects increase near forest edges |
| | Grading | Noise; human disturbance | 300 m | 180 days per zone | Effects increase near forest edges |
| | Compacting | Noise; human disturbance | 300 m | 180 days per zone | Effects increase near forest edges |
| | Sedimentation control berms | Noise; human disturbance | 300 m | 180 days per zone | Effects increase near forest edges |
| | Sedimentation control fencing | Noise; human disturbance | 300 m | 180 days per zone | Effects increase near forest edges |
| Construction | **SEE "PANTHER-DEV" PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 300 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 300 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 300 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 180 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-2

# DECONSTRUCTED ACTIVITIES FOR THE NORTHERN CARACARA

**NORTHERN CARACARA: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: Morrison (2001), and subsequent publications; 300m cited as distance when caracara flush; also radius of primary zone.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 300 m | One day; once/year | |
| | ATV/ORV surveys | Disturbance; noise | 300 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 300 m | 1-3 days; one-time activity | Pre-construction nest surveys |
| | ATV/ORV vehicle use | Disturbance; noise | 300 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 300 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 300 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 300 m | <1 day per acre; once | Already barren post-harvest; clearing may enhance foraging |
| | Citrus clearing | Habitat loss; disturbance; noise | 300 m | 3 days per acre; once | May include communal roosting; clearing may enhance foraging |
| | Pasture clearing | Habitat loss; disturbance; noise | 300 m | <1 day per acre; once | Depends on vegetative structure; clearing may enhance foraging |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 300 m | <1 days per acre; once | Depends on vegetative structure; clearing may enhance foraging |
| | Native forested clearing | Habitat loss; disturbance; noise | 300 m | 3 days per acre; once | Generally isolated remnants; edges |
| | Exotic vegetation clearing | Disturbance; noise | 300 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 300 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 300 m | 60 days (5 days/wk) | Nest surveys as needed prior to clearing/construction |
| | Bulldozing | Noise; human disturbance | 300 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 300 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 300 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 300 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 300 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 300 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 300 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 300 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 300 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 300 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 300 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 300 m | 60-180 days | Pre-construction corridor surveys for nest trees |
| | Electrical substations | Noise; human disturbance | 300 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 300 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 300 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 300 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 300 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 300 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 300 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 300 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 300 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 300 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 300 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 300 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 300 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 300 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**NORTHERN CARACARA: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: Morrison (2001) and subsequent publications; 300m cited as distance when caracara flush; also radius of primary zone.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 300 m | One day; once/year | |
| | ATV/ORV surveys | Disturbance; noise | 300 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 300 m | 1-3 days; one-time activity | Pre-construction nest surveys |
| | ATV/ORV vehicle use | Disturbance; noise | 300 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 300 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 300 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 300 m | <1 day per acre; once [2] | Already barren post-harvest; clearing may enhance foraging |
| | Citrus clearing | Habitat loss; disturbance; noise | 300 m | 3 days per acre; once | May include communal roosting; clearing may enhance foraging |
| | Pasture clearing | Habitat loss; disturbance; noise | 300 m | <1 day per acre; once | Depends on vegetative structure; clearing may enhance foraging |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 300 m | <1 days per acre; once | Depends on vegetative structure; clearing may enhance foraging |
| | Native forested clearing | Habitat loss; disturbance; noise | 300 m | 3 days per acre; once | Generally isolated remnants; edges |
| | Exotic vegetation clearing | Disturbance; noise | 300 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 300 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 300 m | >5 years (5 days/wk) | Nest surveys as needed prior to clearing/mining |
| | De-watering/pumping | Noise; human disturbance | 300 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 300 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 300 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 300 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 300 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 300 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 300 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 300 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 300 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 300 m | 360 days (5 days/wk) | Potential releases (unlikely) to drainage could affect individuals |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 300 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 300 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 300 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 300 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 300 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 300 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 300 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 300 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 300 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 300 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 300 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 300 m | 180 days per zone | |
| Construction | **SEE "CARACARA-DEV" PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 300 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 300 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 300 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 300 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-3

# DECONSTRUCTED ACTIVITIES FOR THE WOOD STORK

**WOOD STORK: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: Rodgers and Schwikert (2002), Table 2; No proposed Covered Activities occur within 2500 feet of a known wood stork colony.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 118 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 118 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 118 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 118 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 118 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 118 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 118 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 118 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 118 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 118 m | <1 days per acre; once | Direct habitat impacts for wetlands only |
| | Native forested clearing | Habitat loss (if wetland) | 118 m | 3 days per acre; once | Direct habitat impacts for wetlands only |
| | Exotic vegetation clearing | Noise; human disturbance | 118 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 118 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 118 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 118 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 118 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 118 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 118 m | 10-60 days per zone | Low stressor if sediment control is good |
| | Sedimentation control fencing | Noise; human disturbance | 118 m | 10-60 days per zone | Low stressor if sediment control is good |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 118 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 118 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 118 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 118 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 118 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 118 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 118 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 118 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 118 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 118 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 118 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 118 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 118 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 118 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 118 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 118 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 118 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 118 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 118 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 118 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 118 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 118 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 118 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 118 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 118 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 118 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 118 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 118 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 118 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 118 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**WOOD STORK: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: Rodgers and Schwikert (2002), Table 2; No proposed Covered Activities occur within 2500 feet of a known wood stork colony.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 118 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 118 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 118 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 118 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 118 m | 1-3 days; one-time activity | No proposed Covered Activities occur within 2500' of colonies |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 118 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 118 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 118 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 118 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 118 m | <1 days per acre; once | Only wetlands affected |
| | Native forested clearing | Habitat loss (if wetland) | 118 m | 3 days per acre; once | Only wetlands affected |
| | Exotic vegetation clearing | Noise; human disturbance | 118 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 118 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 118 m | >5 years (5 days/wk) | Pre-construction nest surveys |
| | De-watering/pumping | Noise; human disturbance | 118 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 118 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 118 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 118 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 118 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 118 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 118 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 118 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 118 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 118 m | 360 days (5 days/wk) | Potential releases (unlikely) to drainage could affect individuals |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 118 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 118 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 118 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 118 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 118 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 118 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 118 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 118 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 350 feet | 180 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 350 feet | 180 days per zone | |
| | Grading | Noise; human disturbance | 350 feet | 180 days per zone | |
| | Compacting | Noise; human disturbance | 350 feet | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 350 feet | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 350 feet | 180 days per zone | |
| Construction | **SEE "STORK-DEV" PAGE** | | 350 feet | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 350 feet | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 350 feet | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 350 feet | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 350 feet | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-4

# DECONSTRUCTED ACTIVITIES FOR THE RED-COCKADED WOODPECKER

**RED-COCKADED WOODPECKER: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: Delaney et al. 2011; RCWs did not flush from simulated artillery fire or 50-caliber blanks at distances >152 meters. No differences in reproduction between treatment and control groups.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 152 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 152 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 152 m | 1-3 days; one-time activity | Pre-construction cavity surveys (old-stand pine flatwoods) |
| | ATV/ORV vehicle use | Disturbance; noise | 152 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 152 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 152 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 152 m | <1 day per acre; once | No effects likely unless <152m from RCW cluster or habitat. |
| | Citrus clearing | Habitat loss; disturbance; noise | 152 m | 3 days per acre; once | Pre-clearing surveys of old-stand pine habitats for RCW cavities |
| | Pasture clearing | Habitat loss; disturbance; noise | 152 m | <1 day per acre; once | (minimal isolated pine stands exist where Covered Activities |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 152 m | <1 days per acre; once | are proposed). |
| | Native forested clearing | Habitat loss; disturbance; noise | 152 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 152 m | 3 days per acre; once | |
| | Vegetation piling/burning | Disturbance; noise; smoke | 152 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 152 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 152 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 152 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 152 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 152 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 152 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 152 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 152 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 152 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 152 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 152 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 152 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 152 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 152 m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 152 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 152 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 152 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 152 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 152 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 152 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 152 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 152 m | 60-180 days | Pre-construction corridor surveys for cavity trees (if warranted) |
| | Electrical substations | Noise; human disturbance | 152 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 152 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 152 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 152 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 152 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 152 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 152 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 152 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 152 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 152 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 152 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 152 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 152 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 152 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**RED-COCKADED WOODPECKER: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: Delaney et al. 2011; RCWs did not flush from simulated artillery fire or 50-caliber blanks at distances >152 meters. No differences in reproduction between treatment and control groups.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 152 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 152 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 152 m | 1-3 days; one-time activity | Pre-construction cavity surveys (old-stand pine flatwoods) |
| | ATV/ORV vehicle use | Disturbance; noise | 152 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 152 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 152 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 152 m | <1 day per acre; once [2] | No effects likely unless <152m from RCW cluster or habitat. |
| | Citrus clearing | Habitat loss; disturbance; noise | 152 m | 3 days per acre; once | Pre-clearing surveys of old-stand pine habitats for RCW cavities |
| | Pasture clearing | Habitat loss; disturbance; noise | 152 m | <1 day per acre; once | (minimal isolated pine stands exist where Covered Activities |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 152 m | <1 days per acre; once | are proposed). |
| | Native forested clearing | Habitat loss; disturbance; noise | 152 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 152 m | 3 days per acre; once | |
| | Vegetation piling/burning | Disturbance; noise; smoke | 152 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 152 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 152 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 152 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 152 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 152 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 152 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 152 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 152 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 152 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 152 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 152 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 152 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 152 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 152 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 152 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 152 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 152 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 152 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 152 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 400 feet | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 400 feet | 180 days per zone | |
| | Grading | Noise; human disturbance | 400 feet | 180 days per zone | |
| | Compacting | Noise; human disturbance | 400 feet | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 400 feet | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 400 feet | 180 days per zone | |
| Construction | **SEE "RCW-DEV" PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 400 feet | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 400 feet | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 400 feet | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 400 feet | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-5

# DECONSTRUCTED ACTIVITIES FOR THE FLORIDA SCRUB-JAY

**FLORIDA SCRUB-JAY: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: No published data found for scrub-jay disturbance distances; literature notes that scrub jay nest sites are not sensitive to human disturbance (Woolfenden and Fitzpatrick 1996b). 50m effects distance is proposed as conservative.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Surveys for scrub jays only where scrubby habitat exists |
| | ATV/ORV surveys | Disturbance; noise | 50m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 50m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 50m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 50m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | N/A except adjacent to scrub | 50m | <1 day per acre; once | For all activities, N/A except where activities are adjacent to scrub |
| | Citrus clearing | N/A except adjacent to scrub | 50m | 3 days per acre; once | or scrubby habitats. |
| | Pasture clearing | N/A except adjacent to scrub | 50m | <1 day per acre; once | |
| | Native herbaceous clearing | N/A except for scrub | 50m | <1 days per acre; once | Environmental permitting field surveys for scrub or scrubby |
| | Native forested clearing | N/A except for scrub | 50m | 3 days per acre; once | habitats. |
| | Exotic vegetation clearing | N/A except adjacent to scrub | 50m | 3 days per acre; once | |
| | Vegetation piling/burning | N/A except adjacent to scrub | 50m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 50m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 50m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 50m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 50m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 50m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 50m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 50m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 50m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 50m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 50m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 50m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 50m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 50m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 50m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 50m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 50m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 50m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 50m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 50m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 50m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 50m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 50m | 60-180 days | Pre-construction corridor surveys for scrub/scrubby habitat |
| | Electrical substations | Noise; human disturbance | 50m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 50m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 50m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 50m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 50m | 360 days | |
| | Water supply lines | Noise; human disturbance | 50m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 50m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 50m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 50m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 50m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 50m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 50m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 50m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 50m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**FLORIDA SCRUB-JAY: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: No published data found for scrub-jay disturbance distances; literature notes that scrub jay nest sites are not sensitive to human disturbance (Woolfenden and Fitzpatrick 1996b). 50m effects distance is proposed as conservative.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Surveys for scrub jays only where scrubby habitat exists |
| | ATV/ORV surveys | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 50 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | N/A except adjacent to scrub | 50 m | <1 day per acre; once [2] | For all activities, N/A except where activities are adjacent to scrub |
| | Citrus clearing | N/A except adjacent to scrub | 50 m | 3 days per acre; once | or scrubby habitats. |
| | Pasture clearing | N/A except adjacent to scrub | 50 m | <1 day per acre; once | |
| | Native herbaceous clearing | N/A except for scrub | 50 m | <1 days per acre; once | Environmental permitting field surveys for scrub or scrubby |
| | Native forested clearing | N/A except for scrub | 50 m | 3 days per acre; once | habitats. |
| | Exotic vegetation clearing | N/A except adjacent to scrub | 50 m | 3 days per acre; once | |
| | Vegetation piling/burning | N/A except adjacent to scrub | 50 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 50 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 50 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 50 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 50 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 50 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 50 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 50 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 50 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 50 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 50 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 50 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 50 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 50 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 50 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 50 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 50 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 50 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 50 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 50 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 50 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 50 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 50 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 50 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 50 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 50 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 50 m | 180 days per zone | |
| Construction | **SEE "SCRUBJAY-DEV" PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 50 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 50 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 50 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 50 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-6

# DECONSTRUCTED ACTIVITIES FOR THE EVERGLADE SNAIL KITE

**EVERGLADE SNAIL KITE: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: Rodgers and Schwikert (2003), Table 1. Recommended buffer (131m) based on direct approach by airboat.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 131 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 131 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 131 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 131 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 131 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 131 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 131 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 131 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 131 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 131 m | <1 days per acre; once | Potential effects where activities occur near deeper wetlands |
| | Native forested clearing | Habitat loss (if wetland) | 131 m | 3 days per acre; once | Potential effects where activities occur near deeper wetlands |
| | Exotic vegetation clearing | Noise; human disturbance | 131 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 131 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 131 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 131 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 131 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 131 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 131 m | 10-60 days per zone | Low stressor if sediment control is good |
| | Sedimentation control fencing | Noise; human disturbance | 131 m | 10-60 days per zone | Low stressor if sediment control is good |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 131 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 131 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 131 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 131 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 131 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 131 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 131 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 131 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 131 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 131 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 131 m | 60 days per zone | |
| | Road drainage grading | Noise; humans; fuel/oil | 131 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 131 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 131 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 131 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 131 m | 60-180 days | Only deeper wetlands potentially affected (apple snails) |
| | Electrical substations | Noise; human disturbance | 131 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 131 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 131 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 131 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 131 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 131 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 131 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 131 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 131 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 131 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 131 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 131 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 131 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 131 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**EVERGLADE SNAIL KITE: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: Rodgers and Schwikert (2003), Table 1. Recommended buffer (131m) based on direct approach by airboat.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 131 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 131 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 131 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 131 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 131 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 131 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 131 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 131 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 131 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 131 m | <1 days per acre; once | Potential effects where activities occur near deeper wetlands |
| | Native forested clearing | Habitat loss (if wetland) | 131 m | 3 days per acre; once | Potential effects where activities occur near deeper wetlands |
| | Exotic vegetation clearing | Noise; human disturbance | 131 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 131 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 131 m | >5 years (5 days/wk) | Pre-construction nest surveys |
| | De-watering/pumping | Noise; human disturbance | 131 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 131 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 131 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 131 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 131 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 131 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 131 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 131 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 131 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 131 m | 360 days (5 days/wk) | Potential releases (unlikely) to drainage could affect individuals |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 131 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 131 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 131 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 131 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 131 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 131 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 131 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 131 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 131 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 131 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 131 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 131 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 131 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 131 m | 180 days per zone | |
| Construction | **SEE "KITE-DEV" PAGE** | | 131 m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 131 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 131 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 131 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 131 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-7

# DECONSTRUCTED ACTIVITIES FOR THE EASTERN INDIGO SNAKE

**EASTERN INDIGO SNAKE: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: no data found for disturbance distance threshholds; assumption is that ground vibrations and earth disturbance are the primary stressors. Proposed 100m distance is probably conservative.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 100 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 100 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 100 m | <1 day per acre; once | FWS Eastern indigo snake standard protection measures employed |
| | Citrus clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | Potential direct impacts from clearing and earth-moving; |
| | Pasture clearing | Habitat loss; disturbance; noise | 100 m | <1 day per acre; once | pre-clearing surveys |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 100 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 100 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 100 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 100 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 100 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 100 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 100 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 100 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 100 m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 100 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 100 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | Accounted for with clearing and earth-moving activities |
| | Road drainage grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 100 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 100 m | 60-180 days | Pre-construction corridor surveys for gopher tortoise burrows |
| | Electrical substations | Noise; human disturbance | 100 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 100 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 100 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 100 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 100 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 100 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 100 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 100 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 100 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 100 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 100 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**EASTERN INDIGO SNAKE: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: no data found for disturbance distance threshholds; assumption is that ground vibrations and earth disturbance are the primary stressors. Proposed 100m distance is probably conservative.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 100 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 100 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 100 m | <1 day per acre; once [2] | FWS Eastern indigo snake standard protection measures employed |
| | Citrus clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | Potential direct impacts from clearing and earth-moving; |
| | Pasture clearing | Habitat loss; disturbance; noise | 100 m | <1 day per acre; once | pre-clearing surveys |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 100 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 100 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 100 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 100 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 100 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 100 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 100 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 100 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 100 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 100 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 100 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 100 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 100 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 100 m | 180 days (5 days/wk); | Accounted for with clearing and earth-moving activities |
| | Bulldozing | Noise; human disturbance | 100 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 100 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 100 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 180 days per zone | |
| Construction | **SEE "INDIGO-DEV" PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 100 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 100 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 100 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 100 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-8

# DECONSTRUCTED ACTIVITIES FOR THE FLORIDA BONNETED BAT

**FLORIDA BONNETED BAT: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: Final listing (USFWS 2013), literature, and Bi-Ops do not provide data; current FWS consultation guidelines (USFWS 2017e) suggest a buffer of 250 feet (76 m) around roost trees.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 76 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 76 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 76 m | 1-3 days; one-time activity | Pre-construction roost tree surveys for tree clearing |
| | ATV/ORV vehicle use | Disturbance; noise | 76 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 76 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 76 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 76 m | <1 day per acre; once | No human activity at night; ag fields not foraging or roosting |
| | Citrus clearing | Habitat loss; disturbance; noise | 76 m | 3 days per acre; once | habitat for FBB. |
| | Pasture clearing | Habitat loss; disturbance; noise | 76 m | <1 day per acre; once | Effects likely limited to field edges adjacent to roosting habitat. |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 76 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 76 m | 3 days per acre; once | Isolated remnants; forest edges; do roost tree surveys |
| | Exotic vegetation clearing | Disturbance; noise | 76 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 76 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 76 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 76 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 76 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 76 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 76 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 76 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 76 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 76 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 76 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 76 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 76 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 76 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 76 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 76 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 76 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 76 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 76 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 76 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 76 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 76 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 76 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 76 m | 60-180 days | Pre-construction corridor surveys for roost trees |
| | Electrical substations | Noise; human disturbance | 76 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 76 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 76 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 76 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 76 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 76 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 76 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 76 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 76 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 76 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 76 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 76 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 76 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 76 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**FLORIDA BONNETED BAT: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: Final listing (USFWS, 2013), literature, and Bi-Ops do not provide data; 100m effects distance applies from edge of fields into native habitats

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 76 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 76 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 76 m | 1-3 days; one-time activity | Pre-construction roost tree surveys for tree clearing |
| | ATV/ORV vehicle use | Disturbance; noise | 76 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 76 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 76 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 76 m | <1 day per acre; once [2] | No human activity at night; ag fields not foraging or roosting |
| | Citrus clearing | Habitat loss; disturbance; noise | 76 m | 3 days per acre; once | habitat for FBB. |
| | Pasture clearing | Habitat loss; disturbance; noise | 76 m | <1 day per acre; once | Effects likely limited to field edges adjacent to roosting habitat. |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 76 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 76 m | 3 days per acre; once | Generally isolated remnants; edges; roost tree surveys |
| | Exotic vegetation clearing | Disturbance; noise | 76 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 76 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 76 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 76 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 76 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 76 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 76 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 76 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 76 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 76 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 76 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 76 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 76 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 76 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 76 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 76 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 76 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 76 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 76 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 76 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 76 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 76 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 76 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 76 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 76 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 76 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 76 m | 180 days per zone | |
| Construction | **SEE "BAT-DEV" PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 76 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 76 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 76 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 76 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-9

# DECONSTRUCTED ACTIVITIES FOR THE EASTERN DIAMONDBACK RATTLESNAKE

**EASTERN DIAMONDBACK RATTLESNAKE: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: no data found for disturbance distance threshholds; assumption is that ground vibrations and earth disturbance are the primary stressors. Proposed 100m distance is probably conservative.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 100 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 100 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 100 m | <1 day per acre; once | Potential direct impacts from clearing and earth-moving; |
| | Citrus clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | pre-clearing surveys |
| | Pasture clearing | Habitat loss; disturbance; noise | 100 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 100 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 100 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 100 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 100 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 100 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 100 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 100 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 100 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 100 m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 100 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 100 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 100 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 100 m | 60-180 days | Pre-construction corridor surveys for gopher tortoise burrows |
| | Electrical substations | Noise; human disturbance | 100 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 100 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 100 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 100 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 100 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 100 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 100 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 100 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 100 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 100 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 100 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**EASTERN DIAMONDBACK RATTLESNAKE: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: no data found for disturbance distance threshholds; assumption is that ground vibrations and earth disturbance are the primary stressors. Proposed 100m distance is probably conservative.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 100 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 100 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 100 m | <1 day per acre; once [2] | Potential direct impacts from clearing and earth-moving; |
| | Citrus clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | pre-clearing surveys |
| | Pasture clearing | Habitat loss; disturbance; noise | 100 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 100 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 100 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 100 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 100 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 100 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 100 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 100 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 100 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 100 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 100 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 100 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 100 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 100 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 100 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 100 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 100 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 100 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 100 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 100 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 100 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 100 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-10

# DECONSTRUCTED ACTIVITIES FOR THE GOPHER TORTOISE

**GOPHER TORTOISE: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: no data found for disturbance distance threshholds; Jones and Dorr (2004) noted a 7.4 meter buffer from burrows for Florida timber operations; no lasting adverse effects from machinery.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 100 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 100 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 100 m | <1 day per acre; once | For all clearing and construction activities, pre-clearing surveys for |
| | Citrus clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | gopher tortoise burrows within suitable habitats. |
| | Pasture clearing | Habitat loss; disturbance; noise | 100 m | <1 day per acre; once | Potential direct impacts minimized by pre-clearing surveys. |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 100 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 100 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 100 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 100 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 100 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 100 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 100 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 100 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 100 m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 100 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 100 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 100 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 100 m | 60-180 days | Pre-construction corridor surveys for gopher tortoise burrows |
| | Electrical substations | Noise; human disturbance | 100 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 100 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 100 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 100 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 100 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 100 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 100 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 100 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 100 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 100 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 100 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**GOPHER TORTOISE: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: no data found for disturbance distance threshholds; Jones and Dorr (2004) noted a 7.4 meter buffer from burrows for Florida timber operations; no lasting adverse effects from machinery.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | No literature found for disturbance distances/thresholds |
| | ATV/ORV surveys | Disturbance; noise | 100 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 100 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 100 m | <1 day per acre; once [2] | For all clearing and construction activities, pre-clearing surveys for |
| | Citrus clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | gopher tortoise burrows within suitable habitats. |
| | Pasture clearing | Habitat loss; disturbance; noise | 100 m | <1 day per acre; once | Potential direct impacts minimized by pre-clearing surveys. |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 100 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 100 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 100 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 100 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 100 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 100 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 100 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 100 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 100 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 100 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 100 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 100 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 100 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 100 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 100 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 100 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 100 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 100 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 100 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 100 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 100 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-11

# DECONSTRUCTED ACTIVITIES FOR THE GOPHER FROG

**GOPHER FROG: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: no data found for disturbance distance threshholds; Jones and Dorr (2004) noted a 7.4 meter buffer from gopher tortoise burrows for Florida timber operations; no lasting adverse effects from machinery.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 100 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 100 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 100 m | <1 day per acre; once | For all clearing and construction activities, pre-clearing surveys for |
| | Citrus clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | gopher tortoise burrows within suitable habitats. |
| | Pasture clearing | Habitat loss; disturbance; noise | 100 m | <1 day per acre; once | Potential direct impacts minimized by pre-clearing surveys. |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 100 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 100 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 100 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 100 m | 60 days (5 days/wk) | Accounted for during land clearing |
| | Bulldozing | Noise; human disturbance | 100 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 100 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 100 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 100 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 100 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 100 m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 100 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 100 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 100 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 100 m | 60-180 days | Pre-construction corridor surveys for gopher tortoise burrows |
| | Electrical substations | Noise; human disturbance | 100 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 100 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 100 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 100 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 100 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 100 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 100 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 100 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 100 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 100 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 100 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 100 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**GOPHER FROG: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: no data found for disturbance distance threshholds; Jones and Dorr (2004) noted a 7.4 meter buffer from gopher tortoise burrows for Florida timber operations; no lasting adverse effects from machinery.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | No literature found for disturbance distances/thresholds |
| | ATV/ORV surveys | Disturbance; noise | 100 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 100 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 100 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | No replanting; disturbance; noise | 100 m | <1 day per acre; once [2] | Pre-clearing GT burrow surveys |
| | Citrus clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Pasture clearing | Habitat loss; disturbance; noise | 100 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss; disturbance; noise | 100 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss; disturbance; noise | 100 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Disturbance; noise | 100 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Disturbance; noise; smoke | 100 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 100 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 100 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 100 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 100 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 100 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 100 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 100 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 100 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 100 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 100 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 100 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 100 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 100 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 100 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 100 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 100 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 100 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 100 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 100 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 100 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 100 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 100 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-12

# DECONSTRUCTED ACTIVITIES FOR THE FLORIDA SANDHILL CRANE

**FLORIDA SANDHILL CRANE: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: Buffer distance from FWC *Species Action Plan for the Florida Sandhill Crane* and Final Species Guidelines (FWC 2013b, 2016d), based on Stys (1997).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 125 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 125 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 125 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 125 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 125 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 125 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 125 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 125 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 125 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 125 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 125 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 125 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 125 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 125 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 125 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 125 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 125 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 125 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 125 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 125 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 125 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 125 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 125 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 125 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 125 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 125 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 125 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 125 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 125 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 125 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 125 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 125 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 125 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 125 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 125 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 125 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 125 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 125 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 125 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 125 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 125 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 125 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 125 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**FLORIDA SANDHILL CRANE: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: Butter distance from FWC *Species Action Plan for the Florida Sandhill Crane* and Final Species Guidelines (FWC 2013b, 2016d), based on Stys (1997).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 125 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 125 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 125 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 125 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 125 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 125 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 125 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 125 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 125 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 125 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 125 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 125 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 125 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 125 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 125 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 125 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 125 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 125 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 125 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 125 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 125 m | 360 days (5 days/wk) | Potential releases (unlikely) to drainage could affect individuals |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 125 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 125 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 125 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 125 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 125 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 125 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 125 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 125 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 125 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 125 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 125 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | 125 m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 125 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 125 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 125 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 125 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-13

# DECONSTRUCTED ACTIVITIES FOR THE FLORIDA BURROWING OWL

**FLORIDA BURROWING OWL: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Sources: Buffer distance from *FWC Burrowing Owl Nest Protection Guidelines and Procedures in Urban Areas* (FWC 2004).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 50 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 50 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 50 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 50 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 50 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 50 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 50 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 50 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 50 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 50 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 50 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 50 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 50 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 50 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 50 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 50 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 50 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 50 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 50 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 50 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 50 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 50 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 50 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 50 m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 50 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 50 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 50 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 50 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 50 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 50 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 50 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 50 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 50 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 50 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 50 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 50 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 50 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 50 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 50 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 50 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 50 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 50 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 50 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 50 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 50 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 50 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**FLORIDA BURROWING OWL: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Sources: Butter distance from *FWC Burrowing Owl Nest Protection Guidelines and Procedures in Urban Areas* (2009).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 125 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 125 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 125 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 125 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 125 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 125 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 125 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 125 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 125 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 125 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 125 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 125 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 125 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 125 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 125 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 125 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 125 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 125 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 125 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 125 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 125 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 125 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 125 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 125 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 125 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 125 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 125 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 125 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 125 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 125 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 125 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 125 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 125 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 125 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | 125 m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 125 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 125 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 125 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 125 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-14

# DECONSTRUCTED ACTIVITIES FOR THE SOUTHEASTERN AMERICAN KESTREL

**SOUTHEASTERN AMERICAN KESTREL: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Source: Buffer distance from Stys (1993).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 150 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 150 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 150 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 150 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 150 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 150 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 150 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 150 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 150 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 150 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 150 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 150 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 150 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 150 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 150 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 150 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 150 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 150 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 150 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 150 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 150 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 150 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 150 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 150 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 150 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 150 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 150 m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 150 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 150 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 150 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 150 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 150 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 150 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 150 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 150 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 150 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 150 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 150 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 150 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 150 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 150 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 150 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 150 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 150 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 150 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 150 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 150 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 150 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 150 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**SOUTHEASTERN AMERICAN KESTREL: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Source: Buffer distance from Stys (1993).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 150 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 150 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 150 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 150 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 150 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 150 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 150 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 150 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 150 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 150 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 150 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 150 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 150 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 150 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 150 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 150 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 150 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 150 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 150 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 150 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 150 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 150 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 150 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 150 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 150 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 150 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 150 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 150 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 150 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 150 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 150 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 150 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 150 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 150 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 150 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 150 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 150 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 150 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | 150 m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 150 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 150 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 150 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 150 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-15

# DECONSTRUCTED ACTIVITIES FOR THE LITTLE BLUE HERON

**LITTLE BLUE HERON: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Source: Buffer distance from Rodgers and Schweikert (2002).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 113 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 113 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 113 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 113 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 113 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 113 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 113 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 113 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 113 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 113 m | <1 days per acre; once | Direct habitat impacts for wetlands only |
| | Native forested clearing | Habitat loss (if wetland) | 113 m | 3 days per acre; once | Direct habitat impacts for wetlands only |
| | Exotic vegetation clearing | Noise; human disturbance | 113 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 113 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 113 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 113 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 113 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 113 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 113 m | 10-60 days per zone | Low stressor if sediment control is good |
| | Sedimentation control fencing | Noise; human disturbance | 113 m | 10-60 days per zone | Low stressor if sediment control is good |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 113 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 113 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 113 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 113 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 113 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 113 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 113 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 113 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 113 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 113 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 113 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 113 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 113 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 113 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 113 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 113 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 113 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 113 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 113 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 113 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 113 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 113 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 113 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 113 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 113 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 113 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 113 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 113 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 113 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 113 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**LITTLE BLUE HERON: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Source: Buffer distance from Rodgers and Schweikert (2002).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 113 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 113 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 113 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 113 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 113 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 113 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 113 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 113 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 113 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 113 m | <1 days per acre; once | Only wetlands affected |
| | Native forested clearing | Habitat loss (if wetland) | 113 m | 3 days per acre; once | Only wetlands affected |
| | Exotic vegetation clearing | Noise; human disturbance | 113 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 113 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 113 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 113 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 113 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 113 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 113 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 113 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 113 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 113 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 113 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 113 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 113 m | 360 days (5 days/wk) | Potential releases (unlikely) to drainage could affect individuals |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 113 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 113 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 113 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 113 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 113 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 113 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 113 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 113 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 113 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 113 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 113 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 113 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 113 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 113 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | 113 m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 113 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 113 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 113 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 113 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-16

# DECONSTRUCTED ACTIVITIES FOR THE TRICOLORED HERON

**TRICOLORED HERON: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Source: Buffer distance from Rodgers and Schweikert (2002).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 132m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 132m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 132m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 132m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 132m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 132m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 132m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 132m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 132m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 132m | <1 days per acre; once | Direct habitat impacts for wetlands only |
| | Native forested clearing | Habitat loss (if wetland) | 132m | 3 days per acre; once | Direct habitat impacts for wetlands only |
| | Exotic vegetation clearing | Noise; human disturbance | 132m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 132m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 132m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 132m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 132m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 132m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 132m | 10-60 days per zone | Low stressor if sediment control is good |
| | Sedimentation control fencing | Noise; human disturbance | 132m | 10-60 days per zone | Low stressor if sediment control is good |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 132m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 132m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 132m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 132m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 132m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 132m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 132m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 132m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 132m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 132m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 132m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 132m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 132m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 132m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 132m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 132m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 132m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 132m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 132m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 132m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 132m | 360 days | |
| | Water supply lines | Noise; human disturbance | 132m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 132m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 132m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 132m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 132m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 132m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 132m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 132m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 132m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**TRICOLORED HERON: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Source: Buffer distance from Rodgers and Schweikert (2002).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 132m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 132m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 132m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 132m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 132m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 132m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 132m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 132m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 132m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 132m | <1 days per acre; once | Only wetlands affected |
| | Native forested clearing | Habitat loss (if wetland) | 132m | 3 days per acre; once | Only wetlands affected |
| | Exotic vegetation clearing | Noise; human disturbance | 132m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 132m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 132m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 132m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 132m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 132m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 132m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 132m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 132m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 132m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 132m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 132m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 132m | 360 days (5 days/wk) | Potential releases (unlikely) to drainage could affect individuals |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 132m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 132m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 132m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 132m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 132m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 132m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 132m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 132m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 132m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 132m | 180 days per zone | |
| | Grading | Noise; human disturbance | 132m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 132m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 132m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 132m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | 132m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 132m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 132m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 132m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 132m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-17

# DECONSTRUCTED ACTIVITIES FOR THE ROSEATE SPOONBILL

**ROSEATE SPOONBILL: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Source: Buffer distance from Rodgers and Schweikert (2002).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 98 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 98 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 98 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 98 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 98 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 98 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 98 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 98 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 98 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 98 m | <1 days per acre; once | Direct habitat impacts for wetlands only |
| | Native forested clearing | Habitat loss (if wetland) | 98 m | 3 days per acre; once | Direct habitat impacts for wetlands only |
| | Exotic vegetation clearing | Noise; human disturbance | 98 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 98 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 98 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 98 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 98 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 98 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 98 m | 10-60 days per zone | Low stressor if sediment control is good |
| | Sedimentation control fencing | Noise; human disturbance | 98 m | 10-60 days per zone | Low stressor if sediment control is good |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 98 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 98 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 98 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 98 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 98 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 98 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 98 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 98 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 98 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 98 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 98 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 98 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 98 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 98 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 98 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 98 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 98 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 98 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 98 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 98 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 98 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 98 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 98 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 98 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 98 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 98 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 98 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 98 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 98 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 98 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**ROSEATE SPOONBILL: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Source: Buffer distance from Rodgers and Schweikert (2002).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 98 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 98 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 98 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 98 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 98 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 98 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 98 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 98 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 98 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 98 m | <1 days per acre; once | Only wetlands affected |
| | Native forested clearing | Habitat loss (if wetland) | 98 m | 3 days per acre; once | Only wetlands affected |
| | Exotic vegetation clearing | Noise; human disturbance | 98 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 98 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 98 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 98 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 98 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 98 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 98 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 98 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 98 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 98 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 98 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 98 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 98 m | 360 days (5 days/wk) | Potential releases (unlikely) to drainage could affect individuals |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 98 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 98 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 98 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 98 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 98 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 98 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 98 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 98 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 98 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 98 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 98 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 98 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 98 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 98 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | 98 m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 98 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 98 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 98 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 98 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-18

# DECONSTRUCTED ACTIVITIES FOR THE BIG CYPRESS FOX SQUIRREL

**BIG CYPRESS FOX SQUIRREL: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Source: Buffer distance from *Big Cypress Fox Squirrel Species Guidelines* (FWC 2018b).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 175 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 175 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 175 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 175 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 175 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 175 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 175 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 175 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 175 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 175 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 175 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 175 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 175 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 175 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 175 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 175 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 175 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 175 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 175 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 175 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 175 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 175 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 175 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 175 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 175 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 175 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 175 m | 360 days per zone | |
| | Concrete batch plants | Noise; humans; fuel/oil | 175 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 175 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 175 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 175 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 175 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 175 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 175 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 175 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 175 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 175 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 175 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 175 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 175 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 175 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 175 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 175 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 175 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 175 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 175 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 175 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 175 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 175 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**BIG CYPRESS FOX SQUIRREL: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Source: Buffer distance from *A Species Action Plan for the Big Cypress Fox Squirrel* (FWC, 2013g).

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 175 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 175 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 175 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 175 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 175 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 175 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 175 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 175 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 175 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 175 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 175 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 175 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 175 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 175 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 175 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 175 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 175 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 175 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 175 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 175 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 175 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 175 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 175 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 175 m | 360 days (5 days/wk) | |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 175 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 175 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 175 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 175 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 175 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 175 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 175 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 175 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 175 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 175 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 175 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 175 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 175 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 175 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | 175 m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 175 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 175 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 175 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 175 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX A-19

# DECONSTRUCTED ACTIVITIES FOR THE EVERGLADES MINK

**EVERGLADES MINK: DECONSTRUCTION OF RESIDENTIAL/COMMERCIAL DEVELOPMENT ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ALL ACTIVITIES OCCUR BETWEEN SUNRISE AND SUNSET*****

Source: FWC Everglades Mink Species Guidelines (2016e) recommend a minimum buffer distance of 11m (35 feet) from potential habitat; buffers should be 200m from known den sites.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-CONSTRUCTION** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 11 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 11 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 11 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 11 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Small drill rig driving | Disturbance; noise | 11 m | 1-3 days; one-time activity | |
| | Small drill rig operation | Disturbance; noise; fuel/oil [1] | 11 m | 1-3 days; one-time activity | BMPs for rig operation |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 11 m | <1 day per acre; once | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 11 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 11 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 11 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 11 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 11 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 11 m | 3 days; once | |
| Earth moving/grading | Excavation | Noise; human disturbance | 11 m | 60 days (5 days/wk) | |
| | Bulldozing | Noise; human disturbance | 11 m | 10-60 days per zone [2] | |
| | Grading | Noise; human disturbance | 11 m | 10-60 days per zone | |
| | Compacting | Noise; human disturbance | 11 m | 10-60 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 11 m | 10-60 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 11 m | 10-60 days per zone | |
| Dewatering | Excavation (receiving reservoir) | Noise; human disturbance | 11 m | 10-60 days per zone | |
| | Construction excavation | Noise; human disturbance | 11 m | 10-60 days per zone | |
| | Pumping | Noise; human disturbance | 11 m | 10-60 days per zone | |
| General Construction | Small vehicle traffic | Noise; human disturbance | 11 m | 10-60 days per zone | |
| | Delivery trucks/vehicles | Noise; human disturbance | 11 m | 10-60 days per zone | |
| | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 11 m | 10-60 days per zone | |
| | Staging areas | Noise; humans; fuel/oil | 11 m | 10-60 days per zone | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 11 m | 360 days per zone | Potential releases (unlikely) to drainage could affect individuals |
| | Concrete batch plants | Noise; humans; fuel/oil | 11 m | 360 days per zone | Batch plants unlikely to be sited near native habitats |
| | Asphalt paving (parking) | Noise; humans; fuel/oil | 11 m | 10-20 days per zone | |
| **CONSTRUCTION (HORIZONTAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Internal road construction | Road bed grading | Noise; humans; fuel/oil | 11 m | 60 days per zone | Accounted for with clearing |
| | Road drainage grading | Noise; humans; fuel/oil | 11 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 11 m | 60 days per zone | |
| | Road paving | Noise; humans; fuel/oil | 11 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 11 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 11 m | 60-180 days | |
| | Electrical substations | Noise; human disturbance | 11 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 11 m | 60 days per zone | |
| | Underground electrical | Noise; human disturbance | 11 m | 60 days per zone | |
| Water and sewer utilities | Water supply wells | Noise; humans; fuel/oil | 11 m | 60 days | |
| | Water treatment plants | Noise; human disturbance | 11 m | 360 days | |
| | Water supply lines | Noise; human disturbance | 11 m | 60 days per zone | |
| | Sanitary sewer lines | Noise; human disturbance | 11 m | 60 days per zone | |
| | Stormwater sewers | Noise; human disturbance | 11 m | 60 days per zone | |
| **CONSTRUCTION (VERTICAL)** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Building construction | Framing | Noise; human disturbance | 11 m | 360 days per zone | |
| | Interior construction | Noise; human disturbance | 11 m | 360 days per zone | |
| | Exterior construction | Noise; human disturbance | 11 m | 360 days per zone | |
| Road lighting/signage | Streetlights; signals | Noise; human disturbance | 11 m | 90 days per zone | |
| Recreational construction | Recreational fencing (fields) | Noise; human disturbance | 11 m | 60 days | |
| | Recreational lighting | Noise; human disturbance | 11 m | 60 days | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

**EVERGLADES MINK: DECONSTRUCTION OF EARTH MINING ACTIVITIES**

Note: Sub-activities defined down to a level where a) they stop resulting in ecological stressors, and/or b) have considered all reasonable effects on covered species.

*****ONSITE OPERATIONS MAY OCCUR DAY OR NIGHT; OFFSITE TRANSPORT OF MINING PRODUCTS LIMITED TO DAYLIGHT HOURS*****

Source: FWC Everglades Mink Species Guidelines (2016e) recommend a minimum buffer distance of 11m (35 feet) from potential habitat; buffers should be 200m from known den sites.

| ACTIVITY OR PHASE | SUB-ACTIVITY | STRESSOR(S) (Physical, chemical, biological) | SPATIAL DISTRIBUTION (Radius, in meters) | TEMPORAL DISTRIBUTION (Duration; frequency) | NOTES |
|---|---|---|---|---|---|
| **PRE-MINING** | | | | | |
| Listed species surveys | Pedestrian transects | Disturbance; noise | 11 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| | ATV/ORV surveys | Disturbance; noise | 11 m | One day; once/year | Sub-activity similar to baseline (land managers; hunters) |
| Land surveying | Pedestrian transects | Disturbance; noise | 11 m | 1-3 days; one-time activity | |
| | ATV/ORV vehicle use | Disturbance; noise | 11 m | 1-3 days; one-time activity | |
| Geotechnical investigations | Drill rig driving | Disturbance; noise | 11 m | 1-3 days; one-time activity | |
| | Drill rig operation | Disturbance; noise; fuel/oil [1] | 11 m | 1-3 days; one-time activity | BMPs for rig operation |
| **MINING** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Land/vegetation clearing | Row crop "clearing" | Noise; human disturbance | 11 m | <1 day per acre; once [2] | Already barren post-harvest |
| | Citrus clearing | Noise; human disturbance | 11 m | 3 days per acre; once | |
| | Pasture clearing | Noise; human disturbance | 11 m | <1 day per acre; once | |
| | Native herbaceous clearing | Habitat loss (if wetland) | 11 m | <1 days per acre; once | |
| | Native forested clearing | Habitat loss (if wetland) | 11 m | 3 days per acre; once | |
| | Exotic vegetation clearing | Noise; human disturbance | 11 m | 3 days per acre; once | Net benefit to environment |
| | Vegetation piling/burning | Noise; human disturbance | 11 m | 3 days; once | |
| Earth materials excavation | Use of explosives (if necessary) | Noise (sudden) | 1000 m | Minutes; infrequent | Only used for rock mining (not sand mining); startle response |
| | Excavation | Noise; human disturbance | 11 m | >5 years (5 days/wk) | |
| | De-watering/pumping | Noise; human disturbance | 11 m | >5 years (5 days/wk) | |
| | Onsite hauling | Noise; human disturbance | 11 m | >5 years (5 days/wk) | |
| | Stockpiling | Noise; human disturbance | 11 m | >5 years (5 days/wk) | |
| | Sedimentation control berms | Noise; human disturbance | 11 m | 360 days (5 days/wk) | |
| | Sedimentation control fencing | Noise; human disturbance | 11 m | 60 days (5 days/wk) | |
| Processing plant construction | Heavy equipment (cranes, etc.) | Noise; humans; fuel/oil | 11 m | 360 days (5 days/wk) | |
| | Delivery trucks/vehicles | Noise; humans | 11 m | 360 days (5 days/wk) | |
| | Staging areas | Noise; humans; fuel/oil | 11 m | 360 days (5 days/wk) | |
| | Small vehicle traffic | Noise; humans | 11 m | 360 days (5 days/wk) | |
| | Fuel/oil storage | Noise; humans; fuel/oil; odor | 11 m | 360 days (5 days/wk) | Potential releases (unlikely) to drainage could affect individuals |
| Internal mine road construction | Road bed grading | Noise; humans; fuel/oil | 11 m | 60 days per zone [2] | |
| | Road drainage grading | Noise; humans; fuel/oil | 11 m | 60 days per zone | |
| | Road bed compaction | Noise; humans; fuel/oil | 11 m | 60 days per zone | |
| | Paving | Noise; humans; fuel/oil | 11 m | 60 days per zone | |
| | Bridges (wetland crossings) | Noise; humans | 11 m | 30 days per structure | |
| Electrical utilities | High-voltage transmission lines | Noise; human disturbance | 11 m | 60-180 days | |
| | Electrical substation | Noise; human disturbance | 11 m | 360 days | |
| | Electrical distribution lines | Noise; human disturbance | 11 m | 60 days | |
| **CONVERSION TO DEVELOPMENT** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Excavation | Noise; human disturbance | 11 m | 180 days (5 days/wk); | |
| | Bulldozing | Noise; human disturbance | 11 m | 180 days per zone | |
| | Grading | Noise; human disturbance | 11 m | 180 days per zone | |
| | Compacting | Noise; human disturbance | 11 m | 180 days per zone | |
| | Sedimentation control berms | Noise; human disturbance | 11 m | 180 days per zone | |
| | Sedimentation control fencing | Noise; human disturbance | 11 m | 180 days per zone | |
| Construction | **SEE RESIDENTIAL-COMM PAGE** | | 11 m | | |
| **RECLAMATION ACTIVITIES** | **SUB-ACTIVITY** | **STRESSOR(S)** | **SPATIAL DISTRIBUTION** | **TEMPORAL DISTRIBUTION** | **NOTES** |
| Earth moving/grading | Grading | Noise; human disturbance | 11 m | 180 days per mine phase | Depends on size of mine/phase |
| | Redistribute soils | Noise; human disturbance | 11 m | 180 days per mine phase | Depends on size of mine/phase |
| Revegetate per reclamation plan | Planting | Noise; human disturbance | 11 m | Varies by planting plan | Depends on size of mine/phase |
| Post-reclamation monitoring | Onsite monitoring per plan | Human disturbance | 11 m | 1 day per year | |

[1] "Fuel/oil" refers to the potential release of fuel or oil to the environment. No such releases are expected.

[2] The word "zone" denotes an area that varies by the nature of the sub-activity (for example, construction of a surface water management basin within a future residential development).

# APPENDIX B

# SAMPLES OF BEST MANAGEMENT PRACTICES (BMPs) AND EDUCATIONAL MATERIALS

# COMMUNITY ENVIRONMENTAL EDUCATION

# (UNIVERSITY OF FLORIDA)

Continuing Education
Class Registration

Home
Publications
About Us
Key Activities
News & Events
Projects
Programs
People
Continuing Education

> Back to Programs

## Community Environmental Education

**Background:** In "green" communities, one of the primary issues is whether local residents, over the long term, will understand and take local action to conserve natural resources as originally intended by the developer. Decisions made by homeowners ultimately determine whether a community functions as a "green" community. For example, people determine which light bulbs to purchase, what types of vegetation to plant (e.g., exotics vs. natives), how much water to use, and whether to ameliorate their yards for wildlife.

**Summary of Program:** We have developed an environmental education program that will engage the homeowners in understanding and implementing natural resource conservation strategies. The program contains three elements:

1. **Interpretive Kiosks: Highly visible interpretive kiosks are placed in a trail system or public areas where people traffic is high. Each of the kiosks contains informative displays that discuss a particular topic, such as water, energy, and wildlife. Kiosks are dynamic and different informative panels can be easily changed.**
2. **Web Site: A Web site is constructed (in association with the kiosks) that will give detailed environmental information and management strategies pertinent to a community.**
3. **Brochure: A brochure is given to each new homeowner. This brochure will highlight local natural resource issues and invite homeowners to explore the kiosks in their neighborhood and visit the Web site.**

**Program Details:** Currently, we are implementing this residential environmental education program in several "green" communities in Central Florida. For the kiosks, full-color exterior graphic panels are placed into each kiosk. To date, we have 28 full-color panels that cover seven themes: Water, Energy, Wildlife, Environmental Landscaping, Insects/Pollinators, Lakes, and Natural/Human History. The Web site generally follows the topic themes. The front page is designed as an entry port for a community and is designed to be compatible, in terms of look and feel, with the overall design and flavor of the community. From there, residents can link to various environmental topics and learn more about local resources, issues, and conservation strategies. The brochure functions as a springboard for people to explore the kiosks and Web site. This brochure generally has four panels (front and back) and covers the above topic themes.

**Implementation:** Overall, a community can implement any combination of kiosks, panels, Web site, and brochure. For example, a community may decide to build two kiosks and use all 28 panels for these two kiosks, Web site, and brochure in combination but in certain instances, a community may want to use the kiosks alone.

**Estimated Costs:** Approximate materials and construction costs for the signs and panels:

1. **24" x 36" all aluminum Graphic Display Units: $1,300.00 each**
2. **24" x 36" single wood pedestal & aluminum frame Graphic Display Units: $925.00 each**
3. **Printing Costs for Full-Color Exterior Graphics (panels): $80.00 each**
4. **Printing Costs for 1000 Full-Color Brochures: $800.00**
5. **Production Costs: Production costs are variable depending on the topics, the community, and the amount of site-specific information that is needed for the graphic displays or the Web site.**

For more information, contact **Dr. Mark Hostetler**

# FLORIDA-FRIENDLY LANDSCAPING

# (FDEP AND UNIVERSITY OF FLORIDA)

http://www.floridayards.org/

**A GUIDE TO LIVING WITH FLORIDA PANTHERS**

**(FWC)**

## You live in Florida panther country

Florida panthers are reclusive and rarely seen by people. Fewer than 100 Florida panthers remain in the wild. 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.

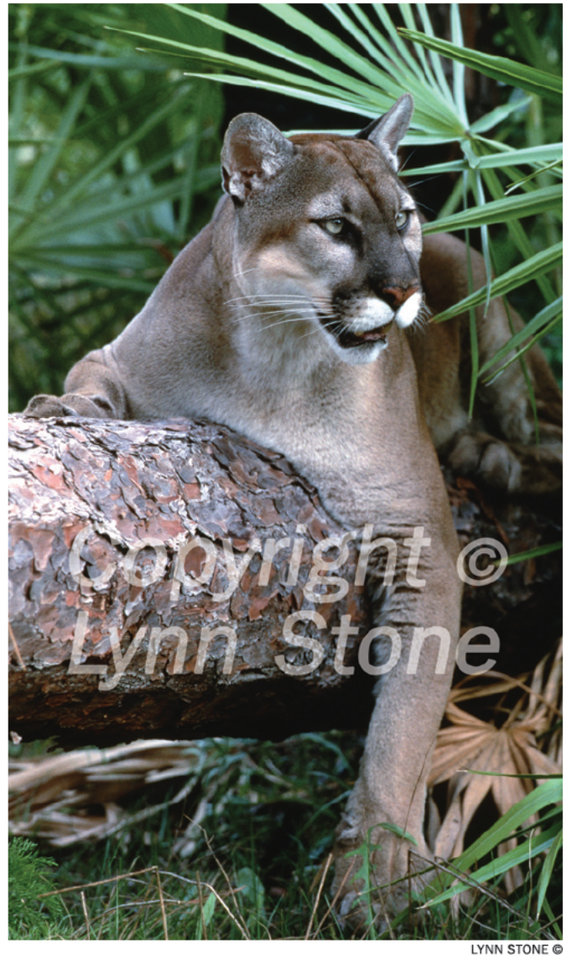
MARK LOTZ

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

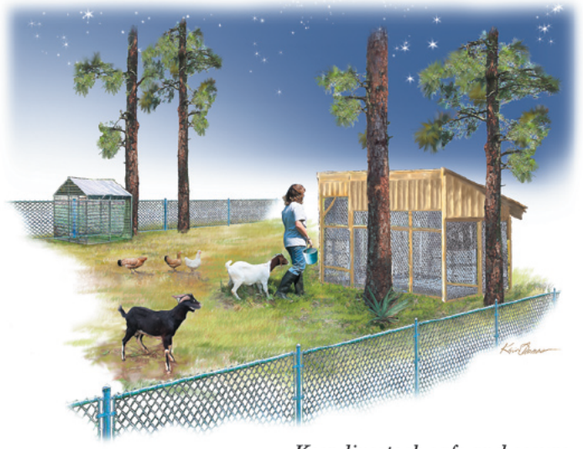
While these guidelines are meant to help you live safely in Florida panther habitat, they also apply to living with more commonly encountered wildlife, including raccoons, snakes, bears and alligators.

**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 http://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!

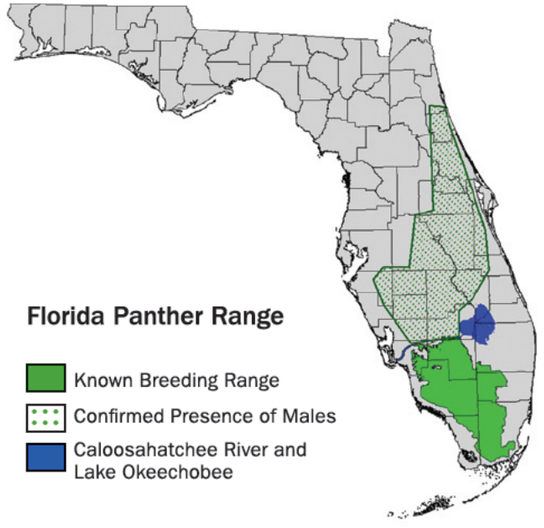
## Florida panther facts

- 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.
- As of 2006, biologists estimate roughly 80-100 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 Flagler County.
- 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.

FWC PANTHER TEAM

- 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.

**For more Florida panther information, visit MyFWC.com/panther**




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.

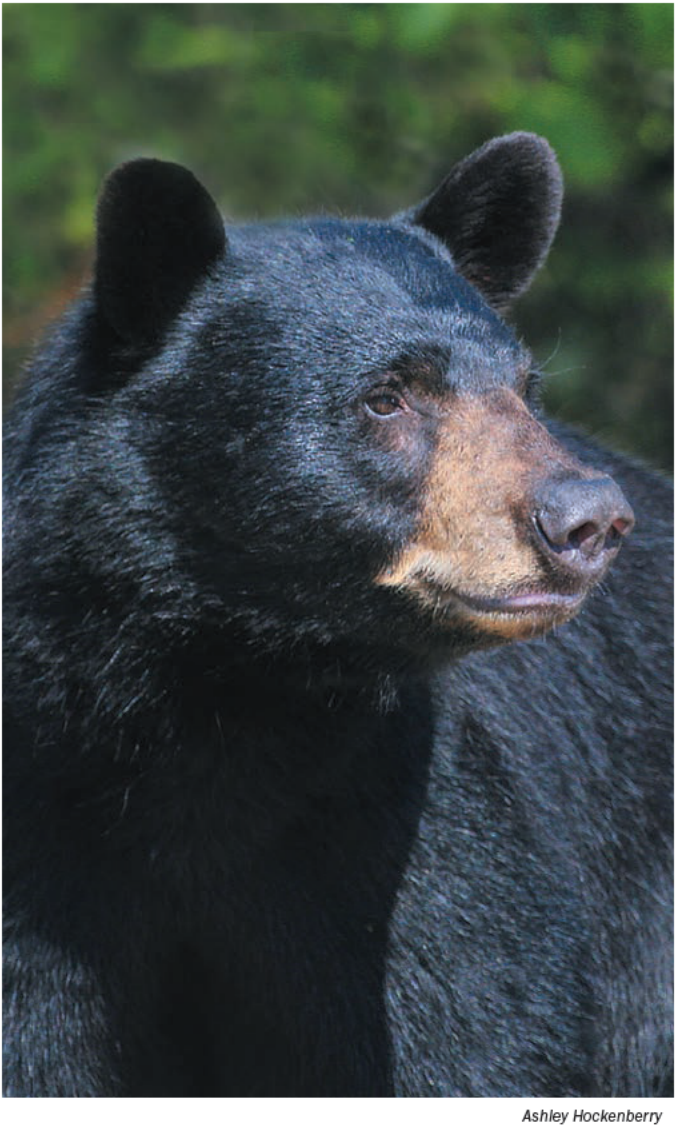
# A GUIDE TO LIVING IN BEAR COUNTRY

# AND

# BEAR DOOR-HANGER

# (FWC)

# A guide to living in **bear country**



*Ashley Hockenberry*

**Florida Fish and Wildlife Conservation Commission**

MyFWC.com/Bear

Ashley Hockenberry

## If you are in Florida, you should know

Florida's black bear population has recovered from historically low numbers in most areas of the state, while at the same time the number of people has increased in and around where bears live. As a result, bears and people encounter each other more than ever. Keeping bears wild and away from the places where people live and work is a responsibility we all share to ensure they remain a valued part of Florida's natural heritage.

Living in bear country provides rewarding opportunities for residents and visitors to view Florida's largest land mammal. Observe them from a distance, as a bear near your home or workplace is usually just passing through. However, if you experience human-bear conflicts, the Florida Fish and Wildlife Conservation Commission (FWC) can assist you.

The FWC receives over 5,000 bear related calls annually, with most people reporting bears in their yards or getting into garbage.

Human-bear conflicts are preventable. Most conflicts result from people feeding bears either intentionally or unintentionally, even though feeding is illegal in Florida. Bears are attracted to neighborhoods that allow access to food sources – such as garbage, pet food and birdseed – and will quickly learn to associate homes and businesses with getting an easy meal. This behavior becomes more evident in fall, when bears eat up to 20,000 calories a day to bulk up for winter. Bears that become too comfortable around people are more likely to be killed by collisions with vehicles, by someone taking an illegal action or by FWC to address a public safety risk.

Ashley Hockenberry

**It is illegal to place food or garbage out that attracts bears and causes conflicts. Anything that attracts dogs, cats or raccoons also will attract bears!**

## The bear facts

Black bears are the only species of bear in Florida and once roamed the entire state.

- FWC biologists estimate approximately 4,000 black bears roam Florida today, compared to as few as 300 bears in the 1970s.
- Florida bears generally have black fur with a tan muzzle and sometimes a white chest patch called a blaze.
- Adult black bears typically weigh between 150 to 400 pounds, with males often twice the size of females.
- Female bears have their first litter at about 3 1/2 years old and usually have one to three cubs every other year.
- In Florida, bear breeding season runs from about June to August, with cubs born in late January or early February.
- Bears typically range over a large area: 15 square miles for females and 62 square miles for males.
- Bears have the best sense of smell of any land mammal, seven times better than a bloodhound.
- 80% of a black bear's diet comes from plants such as fruits, nuts and berries, 15% from insects like termites, ants and bees, and 5% from meat such as opossums, armadillos and carrion.

**For more bear facts, visit MyFWC.com/Bear.**

**Learn more about bears with the Florida Black Bear Curriculum Guide. The guide is designed for teachers and students in grades 3 to 8 and offers a comprehensive series of lessons on Florida's black bears.**

**Visit www.blackbearinfo.com for more information.**

© Charles Towne

## Why not relocate bears?

Unfortunately, relocation typically does not resolve human-bear conflicts. In Florida, it is rare to find public lands large and remote enough where bears can be moved without coming in contact with people. Relocated bears typically leave the new area to return to their original home or because the new habitat is already occupied by other bears. The result can be bears wandering through unfamiliar areas and crossing busy roads, which creates a danger to motorists and bears. In addition, relocated bears very often exhibit the same unwanted behavior they did before, so relocation may just shift the problem to a new place. For all these reasons, relocation is neither a desirable nor effective way to solve human-bear conflicts.

The FWC is committed to providing effective solutions to conflicts that address the safety concerns of residents and visitors, as well as the long-term well-being of bears.

## Bear behavior and you

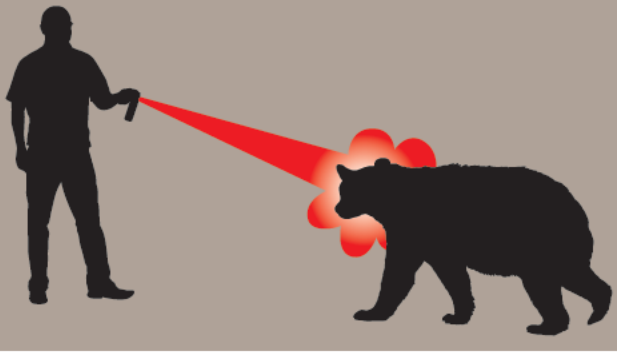
Black bears are shy animals and generally not aggressive towards people. When bears are frightened they run away or climb a tree. If a bear is in a tree in your neighborhood, it is either feeding or trying to escape danger. Keep people and pets away, and the bear will come down and leave on its own when it feels safe, usually after dark. When a bear stands on its hind legs, it is only trying to get a better view or scent, rather than acting in a threatening manner. Black bears may huff, snap their jaws, swat the ground or “bluff charge” when cornered, threatened or

defending food or young. If this happens, stop, hold your ground and then slowly back away. Always remember to respect bears – they are large, powerful, wild animals that can act unpredictably and become dangerous. Bears used to getting food from people may lose their natural fear of human contact and are more likely to damage property or become a public safety threat. NEVER 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.

Here are some tips on how to be BearWise, remain safe around black bears and reinforce their natural fear of people:

- Never approach a bear. Keep as much distance between you and the bear as possible.
- If a bear changes its behavior because of your presence, you are too close.
- When walking dogs, keep them close and be aware of your surroundings. Dogs can trigger defensive behaviors from bears.
- Report any bear threatening the safety of people, pets or livestock, or causing property damage to the FWC (see back cover).
- If you encounter a bear at close range, remain standing upright with arms raised, back up slowly and speak to the bear in a calm, assertive voice.
- Do not turn your back, play dead or run from a black bear. Back away slowly into a secure area such as a house, car or building.

**Carry bear spray and learn how to use it properly, factoring in wind direction, distance to bear (20-30 ft.) and your escape route. Make sure to buy spray specific for use on bears.**



- Make sure you are in a secure area and the bear has a clear escape route, then yell loudly, bang pots and pans, blow a whistle, or use an air horn or car horn to scare the bear away.
- Install a motion-activated device, such as flood lights, a water sprinkler or audio alarm, to scare a bear away from a location when you are not present.

**Warning! It is illegal to take, possess, injure, shoot, collect or sell black bears under Florida state law unless authorized by Commission issued permit. If you are found guilty, you could face fines and/or jail time.**

Rick Sinnott, ADFG

## Discouraging bears from visiting your home

Bears do not linger in neighborhoods if they do not find food. Properly storing or securing garbage and other attractants is a proven method of preventing bear conflicts around homes, neighborhoods and businesses. However, it takes a community-wide effort to keep bears wild and away from people. These items will attract bears:

- Unsecured trash and unwashed recycling containers
- Bird and squirrel feeders with items like seed, suet and peanuts

Milt Fox

- Wildlife feeders
- Pet food and bowls
- Barbeque grills and smokers
- Small animals such as chickens, goats, pigs and rabbits
- Animal feed like corn, grain and pet food
- Composting unsuitable materials
- Beehives
- Fruit and nut-bearing trees and shrubs
- Unsecured outdoor freezers, refrigerators or coolers

## Securing garbage:

- Store garbage and unwashed recyclables in bear-resistant containers or in a secure area, such as a sturdy shed or garage, until the morning of pickup, or
- Build a small shed to store trash cans. Be sure there are no gaps along the shed's edges and use screws instead of nails. If the shed is curbside, call your waste service provider to ensure they will service trash cans from a shed, or

- Retrofit your regular trash can to make it more bear-resistant by adding hardware. For a retrofit to be successful, the lid must not be flexible and the can must not collapse when you stand on its side. Call your waste service provider to ensure they will service a retrofitted trash can, or
- Request a commercially manufactured bear-resistant trash can from your waste service provider. If they do not provide these cans, you can special order one from a hardware store, but ensure your waste service provider will service it.

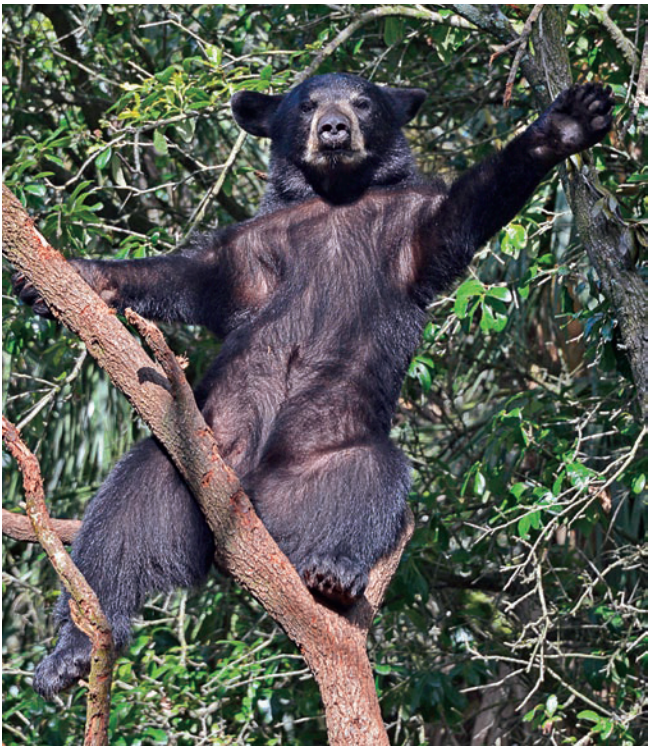
## Securing other bear attractants:

- Use electric fencing to protect gardens, garbage, compost piles, beehives, fruit trees and livestock.

- Feed pets indoors or bring food dishes (even empty ones) inside before dark.
- Store pet and livestock feed in bear-resistant containers or inside a secure area.
- Remove or modify bird and wildlife feeders and ensure the ground is free of all feed and debris.
- Keep gardens and fruiting trees and shrubs tidy. Remove rotten fruit and harvest ripe nuts, fruits and vegetables.
- Create an Unwelcome Mat by placing finishing nails, heads up, 2 inches apart with no more than 3/4 of an inch of the nail sticking up, into a sheet of anchored plywood to keep bears away from a specific area, such as under a window or door, along a patio edge or an opening in a fence.

- Keep outdoor refrigerators and freezers in a secure location or lock up with super-adhesive anchors, like Marine Locks™.
- Clean meat smokers and barbeque grills with a degreasing detergent and store in a secure area. Properly dispose of any food remnants after each use.

**NOTE: Screened porches are not secure from bears.**



© Dave Parkinson

**Visit *MyFWC.com/Bear* for tips on how to secure bear attractants, videos about bears and how to install electric fencing and to learn more about bear-resistant containers.**

**Funds from Florida's "Conserve Wildlife" license plate help conserve bears and reduce human-bear conflicts. Buy one today at your local tax collector's office or online at BuyAPlate.com.**

## Where bears live in Florida

**If you are experiencing bear conflicts, 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 888-404-FWCC (3922).**

**Follow us on:**

YouTube flickr

Florida Fish and Wildlife Conservation Commission

MyFWC.com/Bear

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5/2017

# Avoid attracting bears!

- Garbage, pet foods, barbeque grills and anything that smells like food attracts bears!
- Don't leave your garbage can outside! Store trash and recyclables in bear resistant containers or in a secure area until morning of pick-up.
- Feed pets inside or bring in bowls after pet is finished eating.
- Remove bird and wildlife feeders. Store pet or livestock feed indoors or in bear-resistant containers.
- Protect your garden, compost pile or livestock with electric fencing.
- Clean meat smokers and grills with bleach or a degreasing agent.
- If bears are rewarded with food (garbage, pet food, etc.) at your home, bears will keep coming back!

# If you see a bear...

- Remain calm. DO NOT run or play dead. Back away slowly and speak in a calm, assertive voice.
- Make sure that you are in a safe area and that the bear has an escape route, then make noise to scare the bear away.
- Secure the attractants that are bringing the bear to your neighborhood.

# Bear Conflicts? Call the FWC office nearest you:

| | |
|---|---|
| Panama City | 850-265-3676 |
| Lake City | 386-758-0525 |
| Ocala | 352-732-1225 |
| Lakeland | 863-648-3200 |
| West Palm Beach | 561-625-5122 |

MyFWC.com

# ¡ Asegure su propiedad para evitar a los osos!

- Basuras, comidas para perros, parrillas barbacoa y toda cosa que huela a comida puede atraer osos!
- Guarde su basura y desechos reciclables en un contenedor resistente a osos o en un área segura hasta la mañana de captación.
- Alimente a sus animales domésticos adentro de la casa, o recoja los platos de comida inmediatamente después que terminen de comer.
- Quite alimentadores de aves y de fauna. Guarde la comida de su animal doméstico o de granja adentro de su casa o en un área segura, o en un contenedor resistente a osos.
- Proteja su jardín, abono, y animales de granja con una cerca eléctrica.
- Limpie los ahumaderos de carnes y parrillas después de usarlos con detergente desengrasante.
- Si se les premia a los osos con comida (basura, comida para mascotas, etc.) en su casa, los osos seguirán volviendo.

# En caso de encontrarse con un oso...

- Mantenga la calma. NO corra o se haga el muerto. Aléjese lentamente y hable con una voz calmada y asertiva.
- Asegúrese que estar en un área segura y que el oso tenga una ruta de escape, después haga bulla para asustar al oso y causar que se vaya.
- Asegure todo objeto que atraiga osos a su casa.

# ¿Conflictos oso? Llame a la oficina más cercana:

| | |
|---|---|
| Panama City | 850-265-3676 |
| Lake City | 386-758-0525 |
| Ocala | 352-732-1225 |
| Lakeland | 863-648-3200 |
| West Palm Beach | 561-625-5122 |

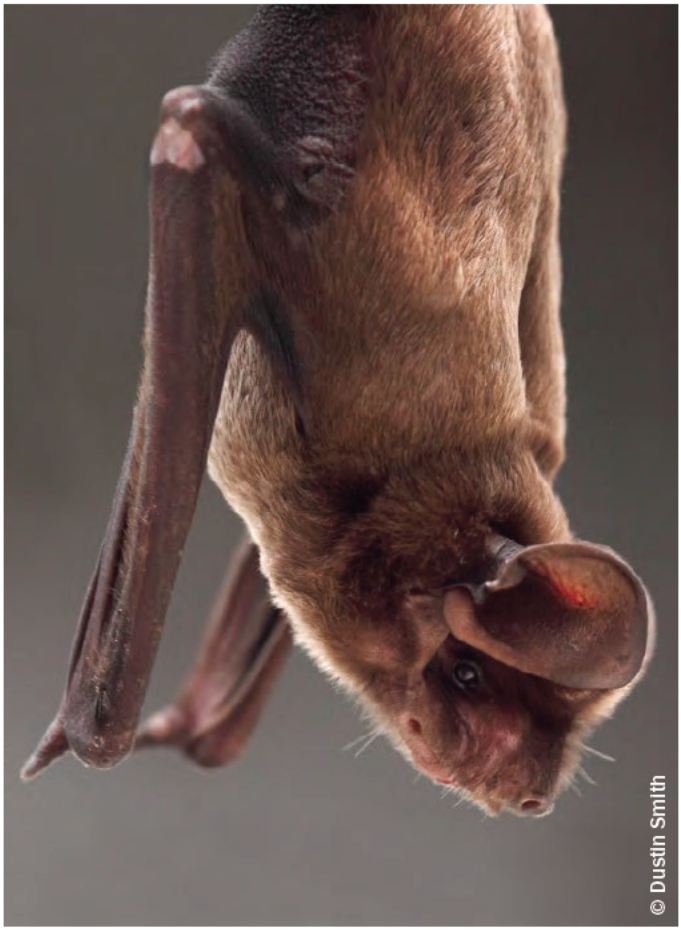
MyFWC.com

**LIVING WITH BATS**

**(FWC)**

A guide to living with

# Bats




*Florida bonneted bat*

Florida Fish and Wildlife Conservation Commission
MyFWC.com

UF UNIVERSITY of FLORIDA
IFAS Extension

*A hoary bat, one of Florida's bat species that roosts in trees.*

## Living with bats

Bats are the only mammals that can truly fly. By grooming themselves regularly they keep their fur very clean. In Florida, there are 13 resident bat species. All of these bats feed on night-flying insects. They rely on echolocation, using high-frequency sound waves to navigate and find prey even in total darkness.

Many Florida bat species roost in colonies ranging from a few bats to many thousands, but some roost individually. Some important natural roost sites for Florida's bats are trees with cavities or peeling bark, palm trees, Spanish moss, and caves.

Bats provide major ecological and economic benefits. One bat can consume hundreds of insects a night. Bats save U.S. farmers billions of dollars annually by controlling insects that damage crops and spread disease among livestock.

## Bats in buildings

Bats may roost in buildings or other man-made structures that mimic their natural habitats. This may occur after their habitat is disturbed and can create conflicts between bats and humans.

*A big brown bat colony in a picnic pavilion.*

Bats roosting in buildings do not physically damage structures, but can cause stains or odors.

If you suspect bats are living in a building, check for staining and bat feces, known as guano. Bat stains are light brown discolorations consisting of oils and dirt left around openings the bats use to enter the roost. Guano is black, dry, and found under the roost site and by the openings. Also, look for bats at dawn or dusk as they enter or leave the roost. **Bat exclusion devices should be used to humanely remove bats that are roosting in a building. These should only be used from August 16 through April 14, outside of the maternity season.**

## How to remove bats from buildings

Exclusion devices allow bats to exit but not reenter a roost. It is vital that exclusions are done properly to prevent illegal killing of bats. Detailed information on how to exclude bats from buildings in Florida is available at: MyFWC.com/bats.

*A Rafinesque's big-eared bat.*

## One bat in a building

There is an exception to the bat exclusion rule: A single bat found inside the living space of a building can be removed at any time of year. If you find a bat indoors, stay calm. The bat may fly around as it attempts to escape but is not trying to attack. Turn on lights so you can see the bat. Confine the bat to a single room and open windows and doors to let it escape. If the bat cannot find its way out, wait for it to land and then carefully capture the bat by either placing a container over the animal and sliding a piece of thick paper underneath or using a thick towel and leather gloves to contain the bat before releasing it outdoors.

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*A Seminole bat.*

## Bat maternity season

In Florida, the maternity season lasts from April 15 through August 15. This is when bats breed and young are born. During this time, people in Florida are not allowed to disturb bats or attempt to remove them from buildings.

Newborn bats are known as pups, which are flightless and completely dependent on their mother's milk. Female bats require roosts free from disturbance, with constant high temperatures to help keep the pups warm. For this reason, a maternity colony in a building usually is not found within rooms where people live or work.

*Big brown bat chasing insects at night.*

## Helping bats survive

Bats are fascinating animals that fly using wings supported by many of the same types of bones that we have in our arms and hands. They can be good neighbors and our best friends on a summer night. Did you know that a single bat can eat hundreds of mosquitoes each night? By helping bats, you can be helping yourself.

But, Florida's bats are facing a lot of challenges. They're misunderstood. They're losing their natural roost sites as forests are removed and caves are blocked. Now a new disease called white-nose syndrome (WNS) has killed millions of cave-roosting bats and is spreading rapidly. As of early 2015, WNS has not reached Florida, but it remains a serious threat.

These are ways you can help bats thrive in Florida:

- Spread the word that bats help people by eating large amounts of mosquitoes and agricultural pests.
- Preserve natural roost sites such as trees with cavities and peeling bark, and dead fronds on palms.
- Put up a bat house.
- Report unusual bat behavior to: **MyFWC.com/BatMortality**.
- Do not enter Florida caves with shoes, clothing or equipment that has been used in caves outside of Florida.

## Common bat myths

**There is a rabies epidemic in bats. Myth!**
The incidence of rabies in bats is rare. Bites can be avoided by not touching bats.

**Bats regularly attack people. Myth!**
Bats are shy and will try to avoid people but they are excellent fliers and you may see them trying to catch insects.

**All bats are blind. Myth!**
Bats use echolocation to locate prey, but all bats have eyes and they can see very well. Bats sometimes see better than people when there is little light.

**Bats are attracted to human hair. Myth!**
Bats don't aim for a person's hair. Bats are agile fliers whose echolocation skills help them maneuver in complete darkness.

**All bats suck blood. Myth!**
Florida's resident bats only eat insects. Only vampire bats consume blood, and they are found ONLY in Central and South America, feeding mainly on livestock and wildlife.

*Bat houses installed on poles.*

## Remember:

- Bats are important parts of healthy ecosystems.
- Wait for the end of the maternity season before taking any actions to exclude bats from buildings.
- The intentional harming of bats is prohibited.
- Bats cannot legally be trapped and relocated.
- Protect bats by preserving roosting habitat and preventing the spread of WNS.
- Do NOT handle bats, especially sick, injured or dead bats.

Find out more about Florida's bats, including how to exclude bats from buildings and how to build and install bat houses at: **MyFWC.com/bats** and **EDIS.IFAS.UFL.edu/topic_bats**.

If you have additional questions about bats or are experiencing bat conflicts, please contact your nearest FWC regional office:

## FWC Regional Offices:

| | | |
|---|---|---|
| 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 |

**Florida Fish and Wildlife Conservation Commission**
620 South Meridian Street
Tallahassee, Florida 32399-1600
www.MyFWC.com/Manatee

## Follow us on:

3/2015

**EVERGLADE SNAIL KITE BROCHURE AND NESTING SIGN**

**(FWC)**

## Nesting and Roosting

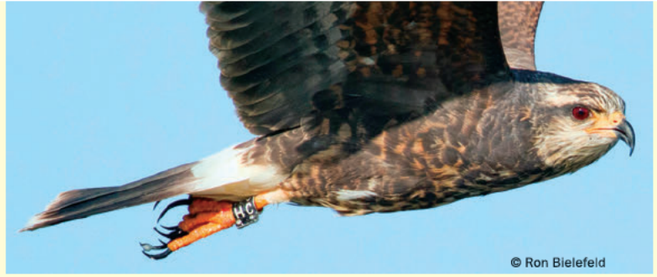
Snail kites can nest year-round, but the peak season is from February through July. Males can often be seen bringing food or nesting material to females as part of mating behavior. They can also be seen flying a series of short dives and ascents near her. Males do most of the nest building, always choosing sites over water to reduce predator access. In the Everglades, kites tend to nest in short trees, while kites on lakes usually nest in non-woody plants like cattail and bulrush. These nests are more likely to collapse and are vulnerable to high winds, waves and even boat traffic.

© Jean Olbert

*Nestling snail kites*

## Legal Protection

Snail kites have been protected by state and federal law under the Endangered Species Act since 1967, making it illegal to harass, kill, capture or collect them. This includes protection from activities that disrupt normal breeding, feeding or sheltering.



© Ron Bielefeld

*Leg bands on female snail kite*

## Research

Scientists have been monitoring snail kite nests and fitting kite chicks with leg bands since the mid 1990s. This allows researchers to make estimates of the number of snail kites in Florida, and to track movements and nesting locations. In 1999, scientists estimated that there were over 3,000 snail kites; this number dropped to less than 700 by 2009. At the current rate of decline, snail kites are predicted to be extinct within 30 years.

## How you can help

The Florida Fish and Wildlife Conservation Commission (FWC) and the U.S. Fish and Wildlife Service protect nest sites by posting signs around sensitive areas during the breeding season. Always avoid posted areas, particularly from February through August, and stay back at least 500 feet from warning signs.

Snail kites will leave their nest when bothered, but may not aggressively defend it from people or predators. They may fly away or just sit nearby until the intruder is gone. This behavior can lead people to think that their presence is not bothering the birds; however, any time a nest is untended the chicks or eggs are vulnerable to predators and harsh temperatures. The longer the nest is exposed, the greater the chance of failure. The best way you can help snail kites is to avoid posted nesting areas and to report any harassment or disturbance to FWC's Wildlife Alert Rewards Program at 888-404-FWCC (3922).

© Larry Frogge

*Male snail kite eating apple snail*

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# Everglade Snail Kite

© Marina Scarr

Florida Fish and Wildlife
Conservation Commission
MyFWC.com

## The Snail Kite

Adult male snail kite

The snail kite *(Rostrhamus sociabilis)*, a crow-sized hawk, is easily identified by the white patch at the base of its tail. It has a unique curved bill designed to quickly pluck snails from their shells. Adult males are slate-gray, while females are brown with varying amounts of white streaks on the face, chest and neck; both sexes have red eyes. Young birds, similar in appearance to females, are cinnamon colored with buff streaks.

Adult female snail kite

## Habitat

Snail kites can be found in Central and South America, but the Everglade snail kite *(R. s. plumbeus)* is the only subspecies found in the United States. Their entire U.S. range is restricted to South Florida, where they can be found in shallow freshwater marshes, like those of the Everglades, or along the shallow, grassy shorelines of lakes. Both habitats have a mixture of short plants and open water, making them great places for kites to see and catch apple snails as they climb to the surface to breathe. All of the habitats dry out periodically, causing snail kites to move around the state looking for good places to eat and breed.

Primary snail kite range in Florida

## Feeding Habits

Snail kites only eat apple snails, which they hunt by flying low over the water while searching for their prey near the surface. Only snails that are breathing air, laying eggs or crawling in a few inches of water are vulnerable. After capturing a snail, the kite pries it open and, using its curved bill, cuts the snail from the shell. Sometimes this feat is performed while in flight.

Snail capture

## Exotic Snails

Large apple snails from South America have been spreading throughout Florida and are now common in many of our lakes and wetlands. These snails lay as many as 30 times more eggs, live twice as long, breed more times per year, and are two to three times the size of our native apple snails. Snail kites readily eat several species of apple snails, but young birds just learning to feed themselves may have a difficult time carrying and opening the larger exotics. However, much of the snail kite nesting in the state now appears to be dependent on exotic snail populations. See www.pompaceaproject.org to learn more about apple snails in Florida.

Non-native snail (left) vs. native snail (right)

# STAY BACK

# Endangered Snail Kites Nesting

Florida Fish and Wildlife Conservation Commission

MyFWC.com

# A GUIDE TO LIVING WITH GOPHER TORTOISES

# (FWC)

Cliff Leonard

## Before you bulldoze

Before you clear land, learn the law. Visit MyFWC.com/GopherTortoise or call the gopher tortoise conservation biologist in your region. Request a permitting fact sheet and remember gopher tortoises must be relocated before any land clearing or development takes place. Property owners must obtain permits from the FWC before tortoises can be moved. Depending on the type of permit, you may be permitted to move the tortoises yourself or you may need to contact an authorized agent.

## Tips for horse owners

Gopher tortoises often dig their burrows in pastures, which can be a challenge to horse farm owners who are concerned their horses may step into the burrows and be injured. For tips on how to avoid potential horse-tortoise conflicts, visit MyFWC.com/GopherTortoise or call the gopher tortoise conservation biologist in your region.

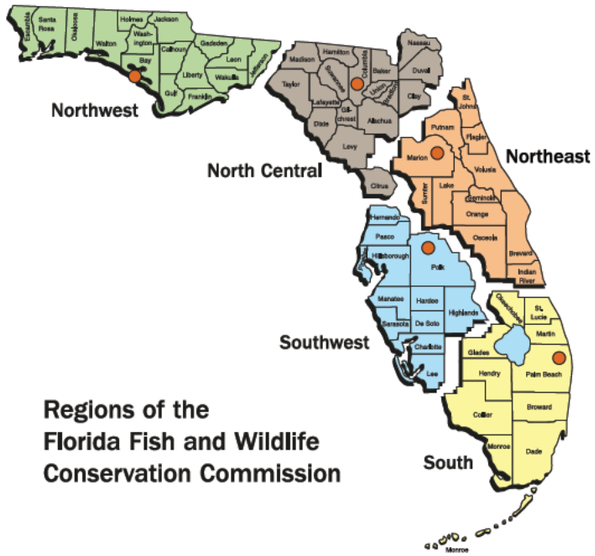
## Gopher tortoise fast facts

- Gopher tortoise burrows average seven feet deep and 15 feet long but may be more than 40 feet long.
- A tortoise may have multiple burrows within the area it spends most of its time.
- Burrow openings are half-moon shaped with the curve at the top, and its size is a fair representation of the size of the tortoise. Burrows with round openings have generally been taken over by an armadillo.
- Adult tortoises are generally 9-11 inches long and weigh 7-9 pounds.
- Females begin to reproduce when they are 9-21 years old (age depends on local conditions); males begin slightly younger.
- They breed March-October but generally dig nests in May and June. One clutch is laid per year with an average of six eggs. Many eggs never hatch because they are eaten by mammals, birds and snakes.
- The biggest threat to the gopher tortoises' long-term survival is loss of habitat.

## Wildlife Alert Reward Program

It is against the law to kill, harass or destroy gopher tortoises, their burrows or eggs. If you suspect illegal activity, you can report it anonymously to FWC's Wildlife Alert Hotline at 888-404-3922, 24 hours a day or online at MyFWC.com/law/Alert. You could be eligible for a reward if your information leads to an arrest.

Robert La Follette




**Regions of the Florida Fish and Wildlife Conservation Commission**

**Northwest Region**
3911 Highway 2321
Panama City, FL 32409-1658
850-265-3676

**North Central Region**
3377 East U.S. Highway 90
Lake City, FL 32055-8795
386-758-0525

**Northeast Region**
1239 S.W. 10th Street
Ocala, FL 34471-0323
352-732-1225

**Southwest Region**
3900 Drane Field Road
Lakeland, FL 33811-1299
863-648-3200

**South Region**
8535 Northlake Boulevard
West Palm Beach, FL 33412
561-625-5122

For more on any information in this brochure, or for Gopher Tortoise Management Plan or permitting information, please call the gopher tortoise conservation biologist in your region listed above, or call 850-488-3831, or visit MyFWC.com/GopherTortoise.

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# A guide to living with gopher tortoises

David Moynahan

**Florida Fish and Wildlife Conservation Commission**
MyFWC.com

Cliff Leonard

# The gopher tortoise in Florida

## Where they live: high and dry

The gopher tortoise (*Gopherus polyphemus*) is a medium size land turtle with large, stumpy hind legs and flattened, shovel-like front legs it uses to dig burrows in sandy soil. These burrows provide a home and refuge for the tortoise and more than 350 species of wild animals and insects that share the same habitat.

Gopher tortoises occur in parts of all 67 counties in Florida, but prefer high, dry, sandy places such as longleaf pine and oak sandhills. They also live in scrub, dry hammocks, pine flatwoods, dry prairies, coastal grasslands and dunes, mixed hardwood-pine communities and a variety of disturbed habitats, such as pasture lands.

## What they eat

Gopher tortoises graze naturally on a wide variety of plant types, including broadleaf grasses, wiregrass, prickly pear cactus, wild grape, blackberry, blueberry, beautyberry and many more. They generally feed within about 160 feet of their burrows, but have been known to travel more than twice that distance to meet their foraging and nutritional needs.

## A keystone species

Wildlife experts call the gopher tortoise a "keystone species" because it is the backbone of the plant and wildlife community in which it lives. Without the tortoise, the populations of more than 350 wildlife species that seek refuge or live in the burrows would be greatly reduced, if not eliminated. The species that depend upon tortoise burrows are called commensals and include the indigo snake, pine snake, gopher frog, opossum, burrowing owl, Florida mouse, gopher cricket and scarab beetle.

## Protecting and managing

Gopher tortoises have lived for millions of years, but biologists who study these ancient reptiles are concerned we may lose them entirely unless we do more to protect and conserve them and their rapidly disappearing habitat.

In 2007, the Florida Fish and Wildlife Conservation Commission (FWC) listed the gopher tortoise as a threatened species and created a plan to manage and protect these unique reptiles. The plan is a blueprint of conservation objectives and actions which includes guidelines for landowners whose property contains gopher tortoises, habitat acquisition plans and permitting guidelines all designed to ensure the tortoises' habitat needs are met now and in the future.

## Legal protection

It is against the law to damage, destroy, harass or kill gopher tortoises, their burrows or their eggs. Gopher tortoises must be moved out of harm's way before any land clearing or development takes place. Permits are required from the FWC before handling or moving tortoises.

Robert La Follette

## Living in your yard

If a gopher tortoise is living in your yard, embrace the opportunity to learn about a threatened species and help the conservation efforts. Here are a few tips:

- Leave the tortoise alone and keep dogs and small children away from it and its burrow.
- Use tortoise-friendly plants to landscape your yard. In addition to providing excellent food for the tortoise, the plants will require very little watering once established. For a list of suitable plants visit MyFWC.com/GopherTortoise.
- Allow the tortoise to come and go freely from your yard. Fencing it in or restricting its movements in any way is against the law.
- It is acceptable to trim tall grass around the burrow if necessary but leave the burrow and mound alone.
- If possible, avoid mowing, digging, driving over or otherwise disturbing the area right around the burrow, which includes the entrance apron and 25 feet beyond the burrow opening.
- Never block the entrance to the burrow, it could harm the tortoise or prevent its exit.
- A burrow should not compromise the integrity of a foundation or mound septic system, but the gopher tortoise conservation biologist in your region can offer you options.

## Crossing the road

- Do not take the tortoise with you.
- If it is in the roadway you can move it across the road in the direction in which it was headed. **Do not put your life in danger to move the tortoise.**
- Do not put the tortoise in the water. Gopher tortoises are terrestrial turtles which means they live on land.

## Living in your neighborhood

Gopher tortoises and their burrows are often found on undeveloped lots in neighborhoods that were built in gopher tortoise habitat. The last remaining tortoises in a community sometimes take refuge on these habitat islands scattered among home sites. If your neighborhood has some of these reptilian residents, keep the following in mind:

- Before a lot can be developed, any gopher tortoises present must, by law, be moved out of harm's way before land clearing begins. Property owners must obtain permits from the FWC before moving gopher tortoises.
- If a lot is about to be developed, you can search the online gopher tortoise permitting database at MyFWC.com/GopherTortoise to see if a permit to move the tortoise(s) has been issued. You can also call the gopher tortoise conservation biologist in your region.
- If there is no land clearing or construction activity on the lot, leave the tortoises alone.
- If you suspect a violation has occurred or is about to occur, call the FWC's toll free Wildlife Alert Hotline at 888-404-3922 or report it online at MyFWC.com/law/Alert.

## Sick or injured

- Sometimes it's better to just leave a sick or injured gopher tortoise alone and let it return to its burrow to heal.
- You may pick up an injured tortoise to transport it for treatment if necessary.
- Call the nearest FWC regional office to find a wildlife rehabilitator in the area or take it to a veterinarian.
- If you think the injury is the result of a violation and you can provide information, call the FWC's Wildlife Alert Hotline.

## Help their future

- Become tortoise-wise: Learn about gopher tortoises and their habitat needs online at MyFWC.com/GopherTortoise and share the information with family, friends and neighbors.
- Support "green spaces" in and around developments – there is still time to save gopher tortoise habitat before it's gone.

**A GUIDE TO LIVING WITH ALLIGATORS**

**(FWC)**

- 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

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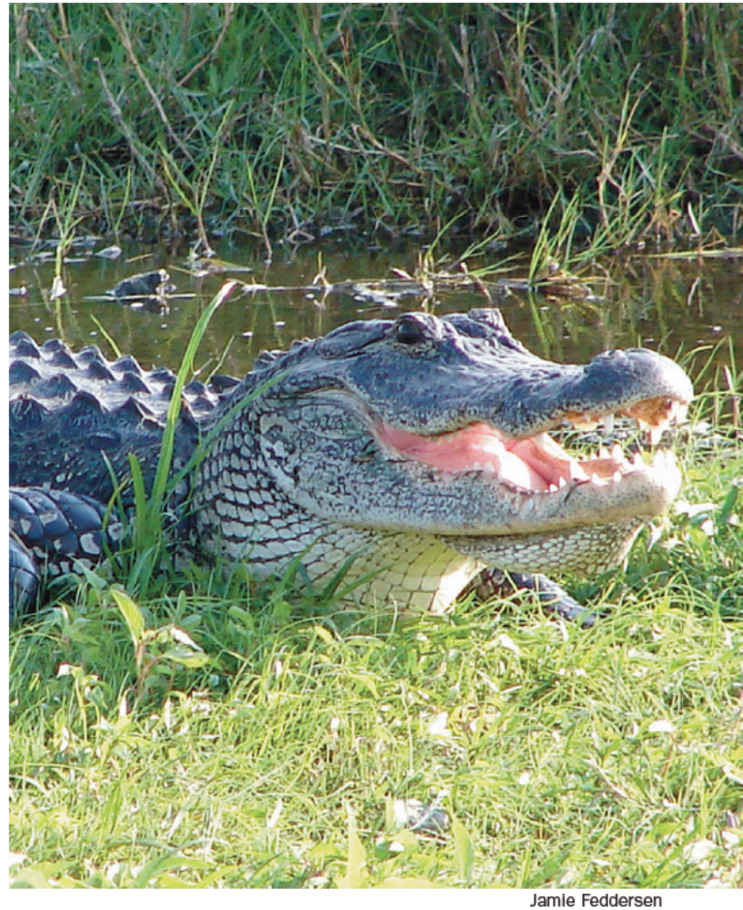
02/2012

# 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.

# Eastern Collier Multiple Species Incidental Take Permit Applications and Habitat Conservation Plan

# Draft Environmental Impact Statement

**U.S. Fish and Wildlife Service**

**September 2018**

**Estimated Applicant Total Costs Associated with Developing and producing this Draft EIS: $836,050**

**Estimated Lead Agency Total Costs Associated with Developing and Producing this Draft EIS: $442,451**

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# EXECUTIVE SUMMARY

## ES.1 INTRODUCTION TO THE FEDERAL ACTION

This draft Environmental Impact Statement (dEIS) has been prepared by the U.S. Fish and Wildlife Service (USFWS or Service) pursuant to the National Environmental Policy Act of 1969, as amended (42 United States Code [USC] 4321 et seq.) (NEPA), the Council on Environmental Quality (CEQ) regulations for Implementing NEPA (40 Code of Federal Regulations (CFR) Parts 1500-1508), and Department of the Interior NEPA Procedures including Secretarial Order 3355. The U.S. Army Corps of Engineers (Corps) is a cooperating agency.

This dEIS evaluates the potential effects to the natural, physical, and human environments likely to occur as a consequence of the Service issuing Incidental Take Permits (ITPs) for Covered Activities and Covered Species requested by a group of landowners acting jointly as the Eastern Collier Property Owners, LLC (ECPO) under Section 10 of the federal Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). The ECPO anticipate pursuing various activities on approximately 152,000 acres of private lands in northeastern Collier County, Florida identified as the Rural Land Stewardship Area (RLSA). Of these lands, the ECPO intend to preserve and limit development of approximately 107,000 acres of habitat important to the Florida panther (FP) and other federally listed species (restricted to uses no more intensive than historical uses of these lands) while directing future residential development, commercial development, and earth mining (i.e., "Covered Activities") to the remaining 45,000 acres minus the acreage of the already permitted Ave Maria project for a total maximum of 39,973 acres of potential new development within the 152,000-acre plan area. These Covered Activities will be implemented in a portion of the RSLA lands considered to be of lesser habitat quality for the FP. The applicants have prepared the "Eastern Collier Multiple Species Habitat Conservation Plan" (ECMSHCP) as part of their ITP applications. The ECMSHCP provides, among other things, additional details of the activities and listed species of wildlife to be covered by the ITPs and the actions proposed by the ECPO to minimize and mitigate the effects of the taking of listed species.

The ECMSHCP and ITPs (if issued) would cover the incidental take of 19 Covered Species--eight federally listed species, three species that are being considered for listing but are not currently federally listed, and eight non-federally listed species that are currently listed as threatened by the state of Florida. See Section 2.1.3, Covered Species for details. Any ITPs issued, and the biological analyses performed for our intra-Service consultation, would inform and facilitate future regulatory actions by the Corps of Engineers in the ECMSHCP plan area.

The Service must decide whether to issue, issue with conditions, or deny the ITP applications based on the applicants' ECMSHCP and after public comment. The Service will make its decision based on ITP issuance criteria: section 10(a)(2)(B), 50 CFR 17.22(b)(2), and 17.32(b)(2). If the Service finds that the ECMSHCP meets these criteria, we will issue the requested ITPs.

## ES.2 PURPOSE AND NEED

The Service's purpose in considering the proposed action is to fulfill its authority under the ESA, Section 10(a)(1)(B). Non-federal applicants, whose otherwise lawful activities may result in take of ESA-listed wildlife, can apply to the Service for incidental take authority so that their activities may proceed without potential violations of Section 9. Take is defined in Section 3 of the ESA as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The ECMSHCP would also provide a framework for section 7 consultations on future Clean Water Act section 404 authorizations.

Section 10 of the ESA specifically directs the Service to issue ITPs to non-federal entities for take of endangered and threatened species when the criteria in Section 10(a)(2)( A) are satisfied by the applicant. Once the Service receives an application for an ITP, the Service reviews the application to determine if it meets issuance criteria. As part of the ITP decision process, the Service conducts and intra-Service Section 7 consultation under Section 7(a)(2). During this consultation the Service must

insure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any listed species or result in the adverse modification of critical habitat. The Service also needs to ensure that issuance of the ITP and implementation of the associated habitat conservation plan is in compliance with applicable federal laws, regulations, treaties, and Executive Orders (EO).

A broader need for the federal action is to fulfill the Service's obligation to protect, conserve, and enhance threatened and endangered species and their respective habitats for the continuing benefit of the people of the United States and to provide a means and to take steps to conserve the ecosystems depended on by these species.

## ES.3 ALTERNATIVES

This EIS analyzes Alternative 1 – No Action Alternative and Alternative 2 – Issuance of ITPs for the ECMSHCP. Two other alternatives (Alternative 3 – Issuance of ITP for Panther-Only and Alternative 4 – Issuance of ITP for Florida Panther Protection Program Review Team (PRT) Configuration) were considered but not carried forward for detailed analysis in Chapter 4. A brief summary of Alternatives 1 and 2 is provided below. Sections 2.2, 2.3, and 2.4 provide detailed descriptions of all four alternatives.

### ES.3-1 Alternative 1 – No Action Alternative

Under the No Action Alternative, the Service would not issue the ITPs and the ECMSHCP would not be implemented. Under this Alternative, the current residential zoning in the Rural Lands Stewardship Area's (RLSA) "Open Lands" would remain at a density of one residence per five acres (base zoning). Within the RLSA boundary, land owners could opt to voluntarily participate in the Rural Land Stewardship Program (RLSP); where they would be free to pursue development at greater densities than are permitted under base zoning. This optional participation in the RLSP requires transfer of development rights within the RLSA's Stewardship Sending Areas (SSAs) to the RLSA's Stewardship Receiving Areas (SRAs). Landowners participating in the RLSP can also pursue earth mining activities with a SRA. Under the No Action Alternative, any land use action taken by land owners could be done with, or without the following: coordination among landowners, landscape-level planning, monitoring or mitigation. Projects would be evaluated individually on a project-by-project basis to ensure compliance under federal, state, and local laws. Under this Alternative, the Service would request on-site or off-site compensation to offset development of lands used by the FP or the eighteen other Covered Species, on a case-by-case basis.

### ES.3-2 Alternative 2 – Issuance of ITPs for the ECMSHCP

Under Alternative 2, the Service would issue ITPs for a period of 50 years for the Covered Species and Covered Activities, and the plan would be implemented as described in the ECMSHCP. The ECMSHCP proposes approximately 50,175 acres of land for Covered Activities, within which up to approximately 45,000 acres of residential/commercial development and/or earth mining could occur. This acreage includes the acreage of the already permitted Ave Maria project (Figure 2-2) and thus leaves 39,973 acres for new development. The ECMSHCP was designed to work in concert with the current RLSP and would also work with the proposed RLSP amendments.

Under the ECMSHCP, approximately 107,000 acres would be designated for Preservation/Plan-Wide Activities and Very Low Density Use. Activities that could occur on the 107,000 acres would be deed restricted and no more intensive than the types of agricultural, ranching, and other traditional rural land use activities that have occurred historically throughout the ECMSHCP area. The 107,000-acre area also includes areas that function as regional wildlife corridors, potentially allowing for wildlife movement between publicly owned conservation lands in Southwest Florida. The deeds associated with the land parcels within the 107,000 acres would be designated for either continuation of current land use, very low density development, or possibly conservation, as development within the 45,000 acres occurs.

The exact type, location, and intensity of future land use associated with the ECMSHCP's traditional rural use area remain undefined. Future land use regulations including the County's RLSP allow for future land use that ranges in intensity from conservation to surface mining. Consistent with the RSLA program, these 107,000 acres could be not only designed for Preservation, but could also be developed with other

Plan-Wide Activities and Very Low Density Use, as described in the ECMSHCP. However, it is important to note that due to the inherent complexities of the RSLA program and the uncertainties in the proposed types, locations, and intensities of traditional rural use, the basis of analysis in determining potential environmental effects in this dEIS makes a conservative assumption that the approximately 107,000 acres of lands would be designated solely for preservation.

In addition to the activities undertaken through the ECMSHCP, the Marinelli Fund, founded by the Florida Panther Protection Program (FPPP) and funded through implementation of the ECMSHCP, is expected to serve the proposed ECMSHCP by undertaking additional conservation activities within and around the ECMSHCP area, independently of any project development conservation. The Marinelli Fund was originally intended to be used for FP habitat restoration, including restoring the functional corridors, buffering against panther-human interaction, locating and constructing of panther crossings, and acquiring habitat demonstrated to be important to FP management within the RLSP area. The FPPP has since expanded the mission of the Marinelli Fund to include conservation actions to benefit other wildlife including the ECMSHCP's Covered Species.

## ES.4 POTENTIAL EFFECTS OF ALTERNATIVES

The potential environmental effects associated with the No Action Alternative and Alternative 2 are summarized below and described in detail in Chapter 4, Environmental Consequences. The resources described and analyzed in detail in this dEIS are: Environmental Setting (see Section 4.3), Geology and Soils (see Section 4.4), Cultural Resources (see Section 4.7), Transportation (see Section 4.9), and Biological Resources (see Section 4.10).

### ES.4-1 Environmental Setting

The No Action Alternative would likely result in permanent change of land use from the present mostly agricultural use to other uses (such as earth mining, oil and gas exploration, residential and commercial development), resulting in urban or suburban sprawl. Under Alternative 2, a regional strategy (the ECMSHCP) resulting from collaboration between conservation organizations and a landowner group would be implemented. The ECMSHCP would provide a long term (50-year) conservation and land use planning framework involving the restricted use of approximately 107,000 acres of privately held land while setting aside 45,000 acres of permanently changed land use (residential, commercial, earth mining) within the ECMSHCP area.

### ES.4-2 Geology and Soils

The creation of impervious surfaces, in the form of access roads, footings, and foundations, would increase the potential for stormwater runoff and soil erosion. Earth and soils would also be directly impacted by residential and commercial development, earth mining, and oil and gas exploration and production. As discussed in Section 3.2.3, eastern Collier County consists mainly of poorly to very poorly drained soils, with hydric soils comprising approximately 61 percent of the ECMSHCP area. While both the No Action Alternative and Alternative 2 would involve displacement and disturbance of earth and soils, Alternative 2 is anticipated to reduce adverse impacts to geology and soils in the ECMSHCP Area.

### ES.4-3 Water Resources

The No Action Alternative would require individual owners of 5-acre "ranchette" lots, and larger developments, to apply for state water resource permits, and possibly Corps dredge and fill permits. These individual actions would also require well and wastewater treatment system permits. Existing high-volume water uses and water management practices can be expected to continue for agriculture, and mining, in the ECMSHCP area. Under Alternative 2, the residential and commercial development would have centralized water distribution, wastewater collection, and treatment services. Alternative 2's development plan would leave the regional flow ways more intact by concentrating development and mining activities in areas that are currently row crops.

### ES.4-4 Air Quality

Under the No Action Alternative, air pollutant emissions are expected to increase in Collier County. The short-term impacts from residential and commercial construction may temporarily increase particulate dust in the vicinity of construction projects. Mining activities are anticipated to create particulate dust daily. The effects of construction and mining on air quality would be reviewed on a case-by-case basis, as necessary, by the Florida Department of Environmental Protection. Alternative 2 is not expected to accelerate air pollution effects. The more self-contained development plan anticipated under Alternative 2 would result in reduced vehicle trip lengths relative to those which would occur if development was dispersed over a larger area which, in turn, is expected to reduce air pollutant emissions in the ECMSHCP area.

### ES.4-5 Cultural Resources

The No Action Alternative would leave open the option to develop approximately 93,000 acres within the ECMSHCP area with no specific requirement to comply with Section 106 of the National Historic Preservation Act unless federal permits are required. Under Alternative 2, only approximately 45,000 acres of lands within the ECMSHCP area would be available for development. All actions with the potential to affect cultural resources (e.g., land clearing for development) would require consultation with the State Historic Preservation Officer. Section 106 also requires federal agencies to consult with federally recognized Native American Tribes to identify cultural resources of concern. Additionally, the restricted use of approximately 107,000 acres is anticipated to benefit Southern Florida's cultural heritage and create opportunities for future conservation activities.

### ES.4-6 Visual Resources

Under the No Action Alternative, conservation lands (native wetlands, uplands and unimproved pasture) included in the RLSP sending areas will remain visibly intact. Lands developed under the RLSP in receiving areas are likely to include modern development aesthetics practices including wildlife friendly lighting. Land owners not participating in the RLSP may develop their properties in a piecemeal manner visually similar to nearby Golden Gate Estates. Under the ECMSHCP Alternative, development will incorporate water management lakes, berms, structural buffers, fencing, and directional and/or low-level lighting along the periphery of Covered Activities areas to visually separate developments from preservation areas, and minimizing the effects of light. Under both alternatives, both Preserved lands and undeveloped agricultural lands are expected to remain visually similar to their current state.

### ES.4-7 Transportation

Future development within the ECMSHCP area would generate additional traffic on local and regional roadways. Future condition estimates included in FDOT's District One Regional Planning Model identify 30,000 residential units and 4,100 jobs present in the Plan Area under the No Action Alternative, and 72,200 residential units and 21,300 jobs under Alternative 2. Total Vehicle Miles Traveled (VMT) estimates for the No Action Alternative and Alternative 2 show VMT totals within the TAA would increase annually by an average of 6.0 percent and 6.8 percent, respectively over the 50 year study period (2010 to 2060).

As a result, most roadways within the Transportation Analysis Area would operate at much higher volumes with significant impacts to traffic and transportation. Both alternatives would entail a significant increase in the overall regional traffic volume.

### ES.4-8 Biological Resources

Under the No Action Alternative, there could be significant direct and indirect impacts on ecological communities, wildlife (including federally listed and candidate species), and wildlife habitat linkages and corridors. Future land use would be regulated by current base zoning entitlements potentially leading to a disjointed land use pattern with little capacity to accommodate the preservation of wildlife corridors between existing public conservation lands. Impacts resulting from this type of disjointed development

include the potential loss of habitats, habitat fragmentation, loss of wildlife corridor linkages between existing public conservation lands, and harm from wildlife-vehicle collisions.

Under Alternative 2, direct and indirect adverse impacts on biological resources could be potentially significant but would be theoretically limited, as compared to the No Action Alternative, because of conditions of any ITP and mitigation measures that are part of the ECMSHCP. Potential impacts from future development associated with Covered Activities within the ECMSHCP area would result in loss of habitat, disturbance due to construction and earth mining, and harm from wildlife-vehicle collisions. However, under Alternative 2 the ECMSHCP would preserve additional habitat, limit habitat fragmentation, conserve wildlife corridors to provide permanent linkages between existing public conservation lands. Under Alternative 2, direct and indirect adverse impacts on biological resources within the ECMSHCP area likely would be below significant levels.

### ES.4-9 Farmlands

The Natural Resources Conservation Service's (NRCS) Farmland Protection Policy Act of 1981 (FPPA) provides definitions for prime, unique, statewide, and locally important farmlands. This act is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Only soils classified as unique farmland under FPPA occur in the ECMSHCP area.

Even though Federal permitting decisions are not subject to the FPPA, the Service is providing some general statements about farmland in the ECMSHCP Area. Under the No Action Alternative, farmlands (including cultivated crops, citrus, sod, pastures, and specialty crops) are likely to be developed before natural communities because the permitting at many levels is easier than for natural areas. Under the ECMSHCP Alternative, the intensively farmed lands in the Covered Activities area are expected to be converted to residential or commercial development, or mining.

# CHAPTER 1.0 INTRODUCTION AND BACKGROUND

## 1.1 INTRODUCTION

This draft Environmental Impact Statement (dEIS)[1] has been prepared by the U.S. Fish and Wildlife Service (USFWS or Service) pursuant to the National Environmental Policy Act of 1969, as amended (42 United States Code [USC] 4321 et seq.) (NEPA) the President's Council on Environmental Quality (CEQ) regulations for implementing NEPA (Title 40 of the Code of Federal Regulations [CFR] Parts 1500 to 1508), the US Department of the Interior's (DOI) implementing regulations (43 CFR Part 46), and DOI Secretarial Order 3355. The mission of the Service is working with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people (USFWS 1999). The U.S. Army Corps of Engineers (Corps) is a cooperating agency in the preparation of this dEIS. The CEQ NEPA regulations address cooperating agencies, which are federal agencies other than a lead agency that have jurisdiction by law or special expertise with respect to an environmental impact involved in a proposal or reasonable alternatives (40 CFR 1501.6 and 1508.5). The Corps has prepared a comprehensive study of future permitting in Southwest Florida, including the HCP Area (Corps 2000, 2003). This study improved planning and permitting by identifying site design and other considerations depending on the location of the project. The dEIS complements the Corps' study and refines the footprint for development which will inform future Clean Water Act Section 404 permitting and preservation.

This dEIS evaluates the potential effects to the natural, physical, and human environments likely to occur as a consequence of the Service issuing Incidental Take Permits (ITPs) requested by a group of landowners acting jointly as the Eastern Collier Property Owners, LLC (ECPO) under Section 10(a)(1)(B) of the federal Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 et seq.). The ECPO applicants (in alphabetical order) are: Alico, Inc.; Barron Collier Investment, Ltd.; Collier Enterprises Management, Inc.; Consolidated Citrus Limited Partnership; English Brothers Partnership; Half Circle L Ranch, LLP; Heller Bros. Packing Corp.; JB Ranch I, LLC; Owl Hammock Immokalee, LLC; Pacific Land, Ltd.; and Sunniland Family Limited Partnership. The ECPO anticipates pursuing various activities on approximately 152,000 acres of private lands in northeastern Collier County, Florida (Figure 1-1). Of these, the ECPO intends to limit development on approximately 107,000 acres of habitat important to the Florida panther (FP) and other federally listed species, while pursuing residential development, commercial development, and earth mining on the remaining 45,000 acres (i.e., Covered Activities). This acreage includes the acreage of the already permitted Ave Maria project and leaves 39,973 acres for new development.

Take is defined in Section 3 of the ESA as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." In relation to an ITP, take must be incidental to the otherwise legal activity for which the ITP is being sought. Section 10(a)(2)(A) of the ESA and federal regulations (50 CFR Parts 17.22(b)(1), 17.32(b)(1), and 222.22) require that any applicant for an ITP also submit a conservation plan that specifies the impact that will likely result from such taking); the steps the applicant will take to minimize and mitigate such impacts and the funding that will be available to implement such steps; what alternative actions to such taking the applicant considered and the reasons why such alternatives were not selected; and such other measures that the Service may require as being necessary or appropriate for purposes of the plan. The ECPO have prepared the "Eastern Collier Multiple Species Habitat Conservation Plan" (ECMSHCP) as part of their ITP applications. The ECMSHCP provides, among other things, additional details of the activities to be covered by each ITP and the actions proposed by the ECPO to minimize and mitigate the effects of the taking of listed species.

The ECMSHCP proposes compact commercial/residential development and mining on up to 45,000 acres within the area covered by the plan. Conservation elements of the ECMSHCP include maintaining existing land uses, habitat preservation, and habitat restoration in an area covering approximately

[1] For this dEIS, acronyms are included in Appendix A, references in Appendix B, and the list of preparers in Appendix C.

107,000 acres; a management plan for preserved lands; a mitigation and monitoring plan for measuring success of the ECMSHCP; and contributions to a funding mechanism for conservation activities. If issued, the ITPs would cover take incidental to development activities within the ECMSHCP area. The ITPs would also include take incidental to land management activities designed to maintain or improve habitat functions; maintain agriculture operations; maintain drainage infrastructure; control exotic vegetation; and control pests and diseases. Finally, the ITPs would consider long-term effects covering the 50-year life of the permit to include more intense use within the ECMSHCP area and other results of the covered activities.

Key details and elements of the ECMSHCP are described in Chapter 2 of this dEIS.

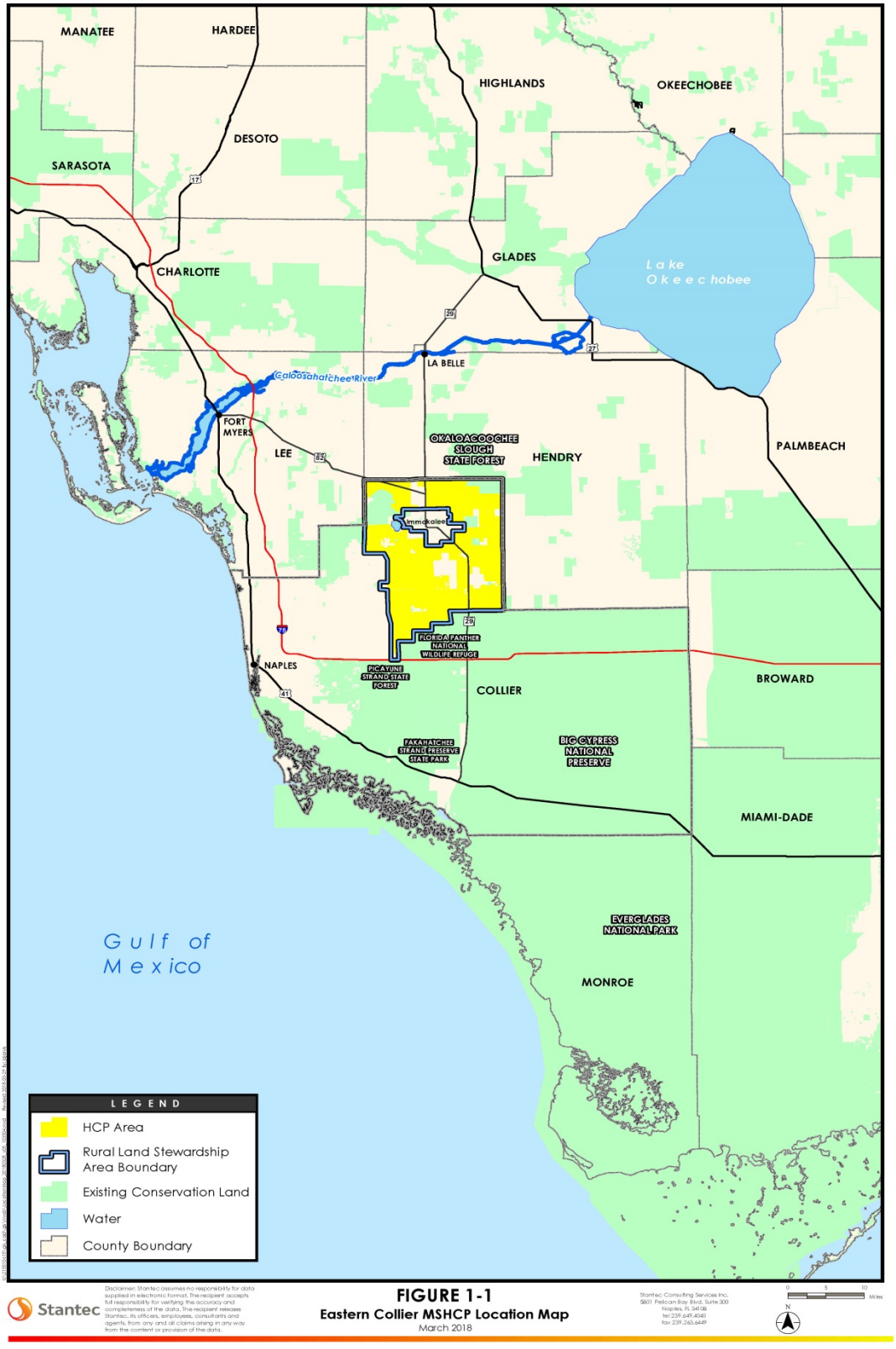



**Figure 1-1. Project Location Map**

## 1.2 BACKGROUND

In the late 1990s, the State of Florida challenged Collier County's comprehensive plan, contending that the required conservation elements would not sufficiently protect natural resources (including listed species and their habitats). In June 1999, Governor Jeb Bush issued Final Order AC-99-02, which directed Collier County to perform an assessment of 195,000 acres in eastern Collier County (known as the "Immokalee Area Study"). Specifically, the order required that the assessment address long-term planning issues in order to balance natural resource protection, agriculture, and economic development within the 195,000-acre area.

Between 1999 and 2002, the ECPO, conservation groups, consultants, local citizens, and state agencies collaborated with Collier County to complete the assessment, and to develop new comprehensive planning strategies and policies that would satisfy the requirements of the state's Final Order. The initial efforts involved a thorough compilation, mapping, and synthesis of natural resource and land use data for the 195,000-acre area, to serve as an objective and verifiable basis for planning and natural resource protection. A report synthesizing this information was submitted to Collier County in December 2000 (Wilson 2000, Wilson 2001).

Between 2000 and 2002, stakeholders utilized GIS data to develop and test various scenarios for meeting the requirements of the Final Order. This process eventually resulted in a system for calculating "credits" generated by protecting environmentally sensitive lands, and established procedures for calculating how many credits would be required to entitle a proposed development. The transfer of development rights system became the basis for new planning policies and amendments, and was codified as the Collier County Rural Land Stewardship Program (RLSP).[2] The RLSP, approved by Collier County and the state of Florida in 2002, offers landowners a voluntary alternative to existing zoning of one dwelling unit per 5 acres, at the option of the property owner. Since 2002, the RLSP policies have been implemented through the Collier County Land Development Code, which provides the detailed standards, procedures, protection mechanisms, site design criteria, and related program elements (Collier County, 2004). The Collier County Land Development Code may be accessed online at: https://library.municode.com/fl/collier_county/codes/land_development_code (see Section 4.08). A re-study of the RLSP is currently under way and changes may or may not occur in the future.

The Corps, Jacksonville District prepared the Southwest Florida Environmental Impact Statement (SWFEIS) to improve the review process of future 404 permit applications (2000, 2003). The environmental impacts of a proposed project are generally analyzed by the Corps on a case-by-case basis, subject to individual determinations by the district engineer regarding what resources may be affected and which criteria to apply. In the SWFEIS, the USACE looked at a range of potential growth scenarios and developed Permit Review Criteria depending on the location of a project. The ECMSHCP is located within the SWFEIS study area boundary, and is generally consistent with the SWFEIS,

Additional background to the development of the ECMSHCP includes the formation of the Florida Panther Protection Program (FPPP) in 2008, which was the result of a collaborative effort of eight private landowners in eastern Collier County and four non-governmental organizations (NGOs). These parties signed a memorandum of understanding to develop a comprehensive approach to planning for the protection of FP habitat within northeastern Collier County, and specifically within the area covered by Collier County's Rural Lands Stewardship Area (RLSA) overlay program (https://www.colliercountyfl.gov/your-government/divisions-a-e/comprehensive-planning/rural-land-stewardship-area-rlsa-overlay-program). The ECMSHCP is built upon the original RLSP framework and selected recommendations of the FPPP. Additional information regarding the FPPP is available at www.floridapantherprotection.com.

[2] The acronym "RLSP" is used throughout this document to refer to the Rural Land Stewardship Program and its associated elements. The Collier County Land Development Code (LDC), which implements the RLSP, utilizes the acronym "RLSA" to refer to the Rural Land Stewardship Area, the geographic area within which the County's RLSP policies and codes apply.

## 1.3 PURPOSE AND NEED FOR ACTION

The proposed action being evaluated by this dEIS is the issuance of ITPs by the Service and implementation of the conservation plan in the associated ECMSHCP, pursuant to Section 10(a)(1)(B) and Section 10(a)(2)(A) of the ESA. The ECMSHCP and ITPs (if issued) would cover the incidental take of 19 species—eight federally listed species, three species that are being considered for listing but are not currently federally listed, and eight non-federally listed species that are currently listed as threatened by the state of Florida. See Section 2.1.3, Covered Species, for details.

### 1.3.1 Purpose of the Federal Action

The Service's purpose in considering the proposed action is to fulfill its authority under the ESA, Section 10(a)(1)(B). Non-federal applicants, whose otherwise lawful activities may result in take of ESA-listed wildlife, can apply to the Service for incidental take authority so that their activities may proceed without potential violations of Section 9.

The Department of the Army, Jacksonville District, Corps is cooperating with the Service in this dEIS to assist in the development of a framework for future section 7 consultations and NEPA analyses on Corps actions within the ECMSHCP area, to build on the analysis in the SWFEIS, and to draw upon and help inform the Corps' exercise of authority under Section 404 of the Clean Water Act to regulate any discharge of dredged or fill material into jurisdictional waters and wetlands. This process will help inform future Corps decisionmaking and environmental analyses, including application of the 404(b)(1) Guidelines. Given the programmatic nature of the ECMSHCP, site-specific development plans for individual covered activities would not become available until prepared by an ECPO member. As ECPO members develop project-specific information for covered activities consistent with the ECMSHCP they would submit an application to the Corps for applicable section 404 permits.

The concurrent conservation objectives and requirements of ESA Sections 7 and 10 create an auxiliary purpose to coordinate the intra-Service Section 7 consultation on the ECMSHCP ESA Section 10 action with the Corps' future Section 7 consultations on individual Clean Water Act Section 404 actions as requested by ECPO members.

To carry out these responsibilities, the Service must comply with a number of environmental laws and regulations, Executive Orders (EO), and agency directives and policies. To fulfill these responsibilities and obligations, the Service will:

- Ensure that issuance of any ITPs and implementation of the ECMSHCP achieve long-term conservation objectives for the covered species and affected ecosystems in southern Florida.
- Ensure that the conservation actions approved with issuance of any ITPs occur within a landscape-scale conservation design capable of maintaining ECMSHCP conservation for the covered species indefinitely.
- Cooperate with the Corps to establish a framework for future Section 7 consultations on Corps wetland regulatory actions that are consistent with the ECMSHCP.
- Ensure that the ECMSHCP meets ITP issuance criteria prior to issuing any ITPs.
- Ensure that the ECMSHCP would not jeopardize listed species or result in destruction or adverse modification of critical habitat prior to issuance of any ITPs.

### 1.3.2 Need for the Federal Action

Section 10 of the ESA specifically directs the Service to issue ITPs to non-federal entities for take of endangered and threatened species when the criteria in Section 10(a)(2)(B) are satisfied by the applicant. Once the Service receives an application for an ITP, the Service reviews the application to determine if it meets issuance criteria. The Service also needs to ensure that issuance of the ITPs and implementation of the associated habitat conservation plan are in compliance with applicable federal laws, regulations, treaties, and EOs. These include other requirements of the ESA in addition to Section 10, the National Historic Preservation Act (NHPA), Migratory Bird Treaty Act (MBTA), and Bald and Golden Eagle Protection Act (BGEPA), along with their implementing regulations. Related EOs include: EO 11998

Floodplain Management, EO 11990 Protection of Wetlands, EO 12898 Environmental Justice, EO 13186 Responsibilities of Federal Agencies to Protect Migratory Birds, and EO 12962 Recreational Fisheries.

In April 2018, the Service received a draft of the ECMSHCP in support of the application from ECPO's member landowners for ITPs under the authority of Section 10(a)(1)(B) of the ESA. This dEIS evaluates the April 2018 ECMSHCP that was prepared to support ITP applications.

A broader need for the federal action is to fulfill the Service's mission to work with others to conserve, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. .

To meet these obligations, the Service is authorized (in addition to its authority under ESA Section 10(a)(1)(B)) to facilitate conservation pursuant to EO 13352 – Executive Order Facilitation of Cooperative Conservation and ESA Section 5 – Land Acquisition. ESA Section 5 authorizes the Service to establish and implement a program to conserve fish, wildlife, and plants via land acquisition and other authority under the Fish and Wildlife Act of 1956, as amended, the Fish and Wildlife Coordination Act, as amended, and the Migratory Bird Conservation Act, as appropriate.

In consideration of these obligations and authorities, the Service has prepared this dEIS to inform the public of this proposed action, alternatives to the proposed action, and the effects of the proposed action and alternatives; to seek input from the public; and to use information collected and analyzed to make informed decisions concerning the ITP applications and the Service's efforts to protect, conserve, enhance, and ensure the long-term survival of the species considered in the ECMSHCP. A description of the alternatives is provided in Chapter 2 of this dEIS.

As noted in section 1.3.1, above, the Service and the Corps need to ensure that any future Section 7 consultations on Clean Water Act Section 404 authorizations account for the HCP. The focus of the dEIS is the HCP and the issuance of ITPs. Future Corps regulatory actions in the area have also been addressed by the SWFEIS. In order to meet our need to coordinate section 7 consultations, the Service, Corps, and ECPO are developing a memorandum of agreement that would establish and memorialize Section 7 coordination procedures.

## 1.4 RELATIONSHIP TO OTHER PLANS

The following projects and plans are described in section 4.15 Cumulative Effects and were considered in the cumulative effects analysis.

- Big Cypress Area of Critical State Concern
- Collier County Rural Lands Stewardship Area Overlay
- Comprehensive Everglades Restoration Plan
- Florida Forever
- Florida Panther Protection Program (FPPP)
- Hendry County Sector Plans
- Multi-Species Recovery Plan (MSRP)
- National Wildlife Refuge Southwest Florida Landscape Conservation Design
- Southwest Florida Comprehensive Watershed Master Plan

## 1.5 REGULATORY FRAMEWORK

The proposed action is subject to the requirements of multiple federal, state, and local laws and regulations enacted to protect the human and natural environments. These laws and regulations establish the process and define the content of the study the Service is required to undertake in considering the issuance of ITPs. The ESA and NEPA set much of the legal requirements that must be addressed in the Service's consideration of the proposed action. The decision whether to issue the ITPs will be documented in the compliance reviews for the ESA and NEPA processes. The following section provides a summary of the important components of these regulations. Section 1.6 of the ECMSHCP provides descriptions of the applicable laws and regulations and also includes other federal, state, and local laws, regulations, and policies that govern land development and environmental impacts in the ECMSHCP area.

### 1.5.1 Endangered Species Act of 1973, as Amended (ESA)

The ESA (16 USC 1531 et seq.) is intended to support the protection and recovery of imperiled species and the ecosystems upon which they depend. The ESA mandates that federal agencies seek to conserve endangered and threatened species and use their resources and authorities to further such purposes. The implementing regulations for the ESA are presented in Title 50, Section 17 of the CFR (50 CFR Part 17). The Service, acting on behalf of the Secretary of the Interior, oversees administration of the ESA for terrestrial and freshwater aquatic species. Sections 7, 9, and 10 of the ESA establish the need and process for consideration of an ITP.

**ESA Section 7 – Interagency Coordination**
Section 7 of the ESA requires that all federal agencies, in consultation with the Service, ensure their activities are not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect critical habitats (ESA 7(a)(1)). Section 7 is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of a listed species.

The issuance of an ITP is a federal action subject to the provisions of Section 7 of the ESA and therefore the Service must consult to determine whether issuance of the permit will jeopardize the continued existence of the listed species. Section 7 requires, among other things, an analysis of direct, indirect, and cumulative effects on the listed species, and effects on designated critical habitat. The intra-Service Section 7 consultation must be concluded prior to the issuance of the ITP.

**ESA Section 9 – Prohibited Acts**
Section 9 of the ESA, in addition to establishing other limitations, prohibits the "take" of any species listed as threatened or endangered unless otherwise authorized by regulation (ESA 9(a)(1)). The term “take” is defined in the ESA as, "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Section 9 provides the definition of “take” that serves as the subject of the ITP applications.

**ESA Section 10 – Exceptions**
Section 10 of the ESA provides a regulatory mechanism to permit the incidental take of federally-listed species by private interests and non-federal government agencies if such take is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (ESA 10(a)(1)(B)).

The ESA authorizes the Service to issue an ITP for non-federal projects or activities that do not require federal authorization or funding. The ITP allows for the “take” of a listed species, provided specific conditions are met. Section 10(a)(2)(A) of the ESA requires an ITP applicant submit a “conservation plan” that specifies, among other things, the impacts that are likely to result from the taking, the measures the permit applicant will undertake to minimize and mitigate such impacts, and the consideration of alternative courses of action. Pursuant to the requirements of the ESA, the Service may implement one of the following options in evaluating an application for an ITP:

- Issue an ITP conditioned on implementation of the conservation plan;
- Issue an ITP conditioned on implementation of the conservation plan and other specified measures; or
- Deny the ITP application.

### 1.5.2 National Environmental Policy Act (NEPA)

NEPA (42 USC 4321 et seq.) is the basic national charter for protection of the environment. NEPA is designed to promote consideration of potential effects on the human environment that would result from proposed major federal actions, and to provide the public and decision makers with useful information regarding reasonable alternatives. NEPA requires agencies utilize a systematic approach to ensure the integrated use of the natural and social sciences in evaluating the potential impacts of their actions. The implementation guidelines for NEPA are presented in Title 40, Chapter V, Parts 1500-1508 of the CFR (40 CFR Parts 1500-1508).

The issuance of this ITP under the ESA is a major federal action with the potential to significantly affect the quality of the environment. While compliance with NEPA is not a direct obligation of the Applicant for the ITPs, the Service must comply with NEPA when making its decision whether to issue a permit. Based on the requirements outlined in 40 CFR Part 1501, the Service has prepared this dEIS to evaluate the effects of the issuance of the ITP. The evaluation of effects under NEPA and ESA overlap substantially; however, the NEPA review considers additional effects to the environment, such as air quality, water quality, socioeconomic, and cultural resources (40 CFR Part 1502).

## 1.6 DECISIONS TO BE MADE

The Service must decide whether to issue, issue with conditions, or deny the ITP applications pursuant to Section 10(a)(1)(B) of the ESA. After considering ECPO's ECMSHCP prepared pursuant to Section 10(a)(2)(A) and public comments, the Service must issue an ITP if it finds that: 1) the taking will be incidental to, and not the purpose of, the carrying out of an otherwise lawful activity; 2) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; 3) the applicant will ensure that adequate funding for the conservation plan will be provided; 4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and 5) other measures, that the Service may require as necessary or appropriate for purposes of the conservation plan will be met and plan implementation will be assured.

## 1.7 PUBLIC OUTREACH AND SCOPING

A key element of NEPA is public participation and solicitation of public comments (43 CFR Parts 46.235 and 46.435). NEPA requires public disclosure throughout development of an EIS and allows all citizens and agencies to work with the lead agency to better inform the environmental review.

A project website was developed to provide general information regarding the project and also provides the public with access to most of the USFWS project records that would be releasable under the Freedom of Information Act. Materials on the website include regulatory guidance, project documents, emails, and other correspondence. The project website is located at www.easterncollierhcpeis.com.

### 1.7.1 Scoping

The first formal step in the NEPA process is scoping, the purpose of which is to identify relevant issues that may influence the scope of the environmental analysis, including potential environmental issues and alternatives, and to guide the process for developing the dEIS.

The scoping process was initiated by publishing the Notice of Intent (NOI) to prepare a dEIS and conduct scoping meetings in the *Federal Register* (FR) on March 25, 2016 (81 FR 16200). In addition, a press release and a newspaper advertisement were prepared and distributed to announce the scoping meetings, explain the project scope, describe the format and goals of the scoping meetings, and to provide meeting information. The NOI directed the public to the project website where they could read a copy of the April 2015 version of the ECMSHCP.

Two meetings were conducted during the scoping period to solicit input. The first scoping meeting was conducted on April 12, 2016, at the University of Florida/Institute of Food and Agricultural Sciences Collier County Extension in Naples, Florida. The public meeting included an online component that broadcast the event live on the Internet. The public scoping meeting was held in an open house format followed by a presentation to provide the public with an overview of the project, answer questions regarding the project, and receive input regarding any issues and alternatives recommended for evaluation in the EIS. Following the presentation, attendees were given the opportunity to provide oral and written comments regarding the scope of the EIS.

A second scoping meeting was held for invited state, local, and federal agency staff, elected officials, Tribal representatives, local officials, and other interested parties on April 19, 2016, at 10:00 am (Eastern) via live online broadcast.

Many comments, the majority of which were from the public, expressed an opinion advocating that the Service not approve the ECMSHCP. Other comments, including many agency and NGO comments, called for improvements to the ECMSHCP. A vast majority of respondents from all groups requested that the ECMSHCP provide additional detail regarding existing conditions and the proposed action.

The most common topics included questions, comments, and concerns regarding the following topics:

- Funding/Financial (20 comments)
- Habitat (446 comments)
- Land use and development (497 comments)
- Farming/extractive/economic interest (196 comments)
- Policy process (116 comments)
- Transportation (75 comments)
- Species (517 comments)
- Water resources (63 comments)
- Additional study needed (33 comments)
- Other (64 comments)

The Service issued the Draft Scoping Report in June 2016.

During their review of the received comments, the Service noted that many commenters raised issues of significant concern and that many of these concerns were shared by multiple commenters. During development of this dEIS, the Service evaluated each issue and corresponding comments and made a determination of how each issue would or would not affect development of the EIS, including the development of alternatives, impact analysis, and required mitigation. As part of this evaluation, the Service finalized a response to each of these issues in the Final Scoping Report (Appendix D).

The NOI to prepare a draft EIS and initiate public scoping for the ECMSHCP was published in the FR on March 25, 2016. A copy of the FR notice is provided in Appendix E (FR 2016-06792).

# CHAPTER 2.0 DESCRIPTION OF ALTERNATIVES

## 2.1 FEATURES COMMON TO ALL ALTERNATIVES

### 2.1.1 Covered Lands

The land area covered by the ECMSHCP is located in the northeastern corner of Collier County, and surrounds the Town of Immokalee (Figure 1-1). For comparison purposes, the same land area is considered in the No Action Alternative. The ECMSHCP area comprises approximately 152,000 acres of land owned by the ECPO applicants, and does not include existing or future county and state roads within eastern Collier County. The ECMSHCP area is also located within the boundaries of the Collier County RLSA – the approximately 185,000 acre geographical area within which Collier County's RLSP applies[3] (see Figure 2-1). The ECMSHCP designates 50,175 acres of lands, primarily within previously cleared agricultural areas, where up to 45,000 acres of Covered Activities may occur. The remaining approximately 107,000 acres, which contribute to existing regional wildlife corridors that allow for wildlife movement among existing public conservation lands, would be designated for Preservation/Plan-Wide Activities and Very Low Density Use. Further enhancing the ratio of preserved areas to development, the 5,027-acre Town of Ave Maria would be included in the 45,000 acres where Covered Activities may occur, even though federal permitting and Section 7 consultation have been completed for the Town of Ave Maria, reducing the maximum acreage of Covered Activities attributable to the ITPs to 39,973 acres. There are two parcels of land located within the RLSA (and the outer boundaries of the ECMSHCP area) – the Hogan Island Quarry and the Immokalee Sand Mine – that are owned by ECPO members but are not included in the ECMSHCP area or as Covered Activities because the federal permitting process for each, including Section 7 consultations, is either already complete or is expected to be complete by the time the ITPs are issued (depicted on Figure 2-1 as "Prior Federal Permitting Initiated"). Nonetheless, these two parcels are accounted for in the overall configuration and planning for wildlife corridors and other ecologically beneficial features of the ECMSHCP.

### 2.1.2 Existing Land Uses

The eastern portions of Collier County comprise a variety of land uses. The major existing and traditional land uses and land cover within the ECMSHCP area include agriculture, ranching, native vegetation communities, residential and commercial development, and earth mining. The main urban areas are the unincorporated area of Immokalee and the Seminole Tribe Immokalee Reservation. Much of the public lands surrounding the ECMSHCP area are dedicated conservation lands. The ECMSHCP area borders the Florida Panther National Wildlife Refuge (FPNWR) and Big Cypress National Preserve (BCNP) to the south. The ECMSHCP area also borders the Okaloacoochee Slough State Forest (OSSF) to the north and east. To the west are the privately owned Audubon Corkscrew Swamp Sanctuary and the publicly owned Corkscrew Regional Ecosystem Watershed (CREW). Additional details on the land use and land cover of the ECMSHCP area are found in Section 3.6 of the ECMSHCP.

### 2.1.3 Covered Species

The ECMSHCP requests take for eight federally listed species: five avian species, one reptile species, and two mammal species. The Plan also covers three species – the gopher tortoise, eastern diamondback rattlesnake, and gopher frog – that are being considered for listing but are not currently federally listed. The gopher tortoise is currently designated as a candidate species for federal listing within its Florida range, and also is listed as threatened by the state of Florida; the eastern diamondback rattlesnake and gopher frog are currently proposed for federal listing. The Plan also covers eight other non-federally listed species that are currently listed as threatened by the state of Florida. All species to be covered by the Plan are included, along with their listing status, in Table 2-1 (the Covered Species).

[3] Please see Section 1.7 in the ECMSHCP for a description of the RLSP.

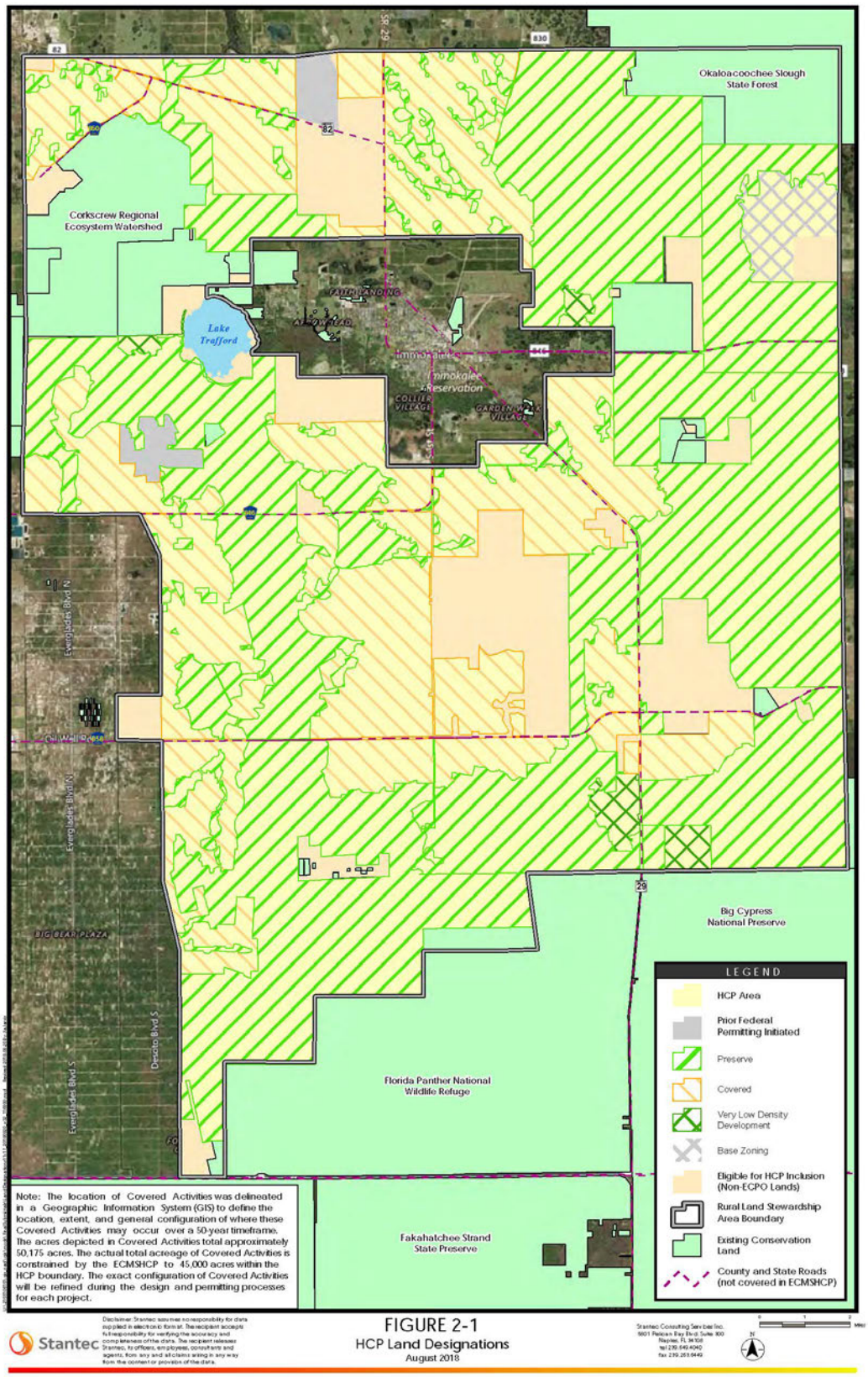



**Figure 2.1-1. East Collier Multiple Species Habitat Conservation Plan Land Designations**

**Table 2.1-1. Covered Species for the Eastern Collier Multiple Species Habitat Conservation Plan**

| COMMON NAME | SCIENTIFIC NAME | FEDERAL STATUS[1] |
|---|---|---|
| ***Federally Listed Species*** | | |
| **Birds** | | |
| Florida scrub jay | *Aphelocoma coerulescens* | T |
| Audubon's (=Northern) crested caracara | *Polyborus plancus (=Caracara cheriway)* | T |
| Wood stork | *Mycteria americana* | T |
| Red-cockaded woodpecker | *Picoides borealis* | E |
| Everglade snail kite | *Rostrhamus sociabilis plumbeus* | E |
| **Reptiles** | | |
| Eastern indigo snake | *Drymarchon corais couperi* | T |
| **Mammals** | | |
| Florida bonneted bat | *Eumops floridanus* | E |
| Florida panther | *Puma concolor coryi* | E |
| ***Candidate Species and Species Under Review for Federal Listing*** | | |
| **Reptiles** | | |
| Gopher tortoise | *Gopherus polyphemus* | C[2] |
| Eastern diamondback rattlesnake | *Crotalus adamanteus* | Under Review |
| Gopher frog | *Lithobates capito* | Under Review |
| ***Species Listed by the state of Florida*** | | |
| **COMMON NAME** | **SCIENTIFIC NAME** | **STATE STATUS[3]** |
| **Birds** | | |
| Burrowing owl | *Athene cunicularia* | T |
| Florida sandhill crane | *Antigone canadensis pratensis* | T |
| Little blue heron | *Egretta caerulea* | T |
| Roseate spoonbill | *Platalea ajaja* | T |
| Southeastern American kestrel | *Falco sparverius paulus* | T |
| Tricolored heron | *Egretta tricolor* | T |
| **Mammals** | | |
| Big Cypress fox squirrel | *Sciurus niger avicennia* | T |
| Everglades mink | *Neovison vison evergladensis* | T |

[1] Federal status abbreviations (as of March 2018): E – endangered; T – threatened; C – Candidate species for federal listing; the gopher tortoise is also listed as Threatened by the state of Florida.
[2] This species is federally threatened in western portion of its range.
[3] State status abbreviations (as of March 2018): T –Threatened

## 2.2 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

The No Action Alternative does not include the issuance of ITPs or the implementation of the ECMSHCP. Under the No Action Alternative, the agricultural, ranching, and other rural activities that have occurred historically throughout the ECMSHCP area could continue indefinitely. These activities include, but are not limited to, the following:

- Crop Cultivation
- Ranching/Livestock Operations
- Forestry and Silviculture
- Recreation
- Exotic and Nuisance Species Control
- Lodges, Hunting/Fishing Camps

- Oil and Gas Exploration and Production
- Mining

In addition to these traditional rural land uses, individual applicants would be free to independently pursue residential or commercial development activities under two scenarios. First, land can be developed under base zoning (one dwelling unit per 5 acres) anywhere within the ECMSHCP area. Alternatively each landowner may develop at greater densities than base zoning within the 71,275 acres of RLSA "Open" lands located within the ECMSHCP area by pursuing SRA Credits through the RLSP. The applicants would also be free to pursue earth mining activities anywhere within the ECMSHCP area, since the RLSP does not place any restriction on where earth mining can occur.[4] Some lands in the ECMSHCP area are within the Big Cypress Area of Critical State Concern, and are subject to State review for consistency with Florida's community planning regulations.

As compared to Alternative 2, the No Action Alternative land owners could opt to develop portions of the RLSA's Open Areas within the ECMSHCP boundary – under base zoning or the RLSP – without requiring ecological monitoring (except for restoration activities undertaken pursuant to the RLSP), provisions for changed or unforeseen circumstances, or other elements required for HCPs. Critically, the No Action Alternative would allow for a mixture of base zoning and optional RLSP- based development. The areas developed according the base zoning requirements would lack the landscape-level planning and conservation benefits of directing development to certain areas of lower habitat value and setting aside large, contiguous tracts for preservation; as well as maintaining areas for historical land uses.

Accordingly, the No Action Alternative could conceivably result in piecemeal development on a project-by-project basis with no predefined development pattern (regardless of whether the proposed RLSP amendments are eventually adopted). Individual projects would likely require federal permits, including under Section 404 of the Clean Water Act for discharges of dredged or fill material to waters of the U.S.; and ESA Section 7 consultations between Corps and USFWS would be undertaken for those permits as required. For projects triggering formal ESA Section 7 consultation, USFWS would consider biological opinions with Incidental Take Statement(s) (ITS) exempting incidental take, as appropriate, for the federally listed species potentially affected.

## 2.3 ALTERNATIVE 2 – ISSUANCE OF ITPS FOR THE ECMSHCP

Alternative 2 involves an ECMSHCP and ITPs with 50-year durations for the Covered Species and Covered Activities within the ECMSHCP area, implemented as described in the ECMSHCP. Figure 2-1 depicts the extent of the ECMSHCP area within the RLSA, the areas designated for Covered Activities, Preservation/Plan-Wide Activities, Very Low Density Use, and Base Zoning. The ECMSHCP sets forth the acreage and general location for each of the designated uses (Figure 2-1). Precise locations would be determined in the future. The proposed ECMSHCP provides the Applicants' plan to satisfy ITP issuance criteria to minimize and mitigate the effects of their taking to the maximum extent practicable.

The ECMSHCP proposes 50,175 acres of land for Covered Activities, within which up to 45,000 acres of residential/commercial development and/or earth mining could occur. The ECMSHCP was designed to work in concert with the current RLSP and would also work with the proposed RLSP amendments.

Under the ECMSHCP, approximately 107,000 acres would be designated for Preservation/Plan-Wide Activities and Very Low Density Use. Activities that could occur on the 107,000 acres would be deed restricted and no more intensive than the types of agricultural, ranching, and other traditional rural land use activities that have occurred historically throughout the ECMSHCP area. The 107,000-acre area also includes areas that function as regional wildlife corridors, potentially allowing for wildlife movement between publicly owned conservation lands in Southwest Florida. The deeds associated with the land parcels within the 107,000 acres would be designated for either continuation of current land use, very low density development, or possibly conservation, as development within the 45,000 acres occurs.

[4] Proposed amendments to the Collier County comprehensive plan would place a 45,000-acre cap on development within the RLSA (Collier County 2009). The proposed amendments would also allow for the voluntary restoration of panther corridors as a means to generate stewardship credits. These proposed amendments were not adopted during the last comprehensive planning cycle, but are currently undergoing a county restudy in 2018 and could be adopted thereafter.

The exact type, location, and intensity of future land use associated with the ECMSHCP's traditional rural use area remain undefined. Future land use regulations including the County's RLSP allow for future land use that ranges in intensity from conservation to surface mining. Consistent with the RSLA program, these 107,000 acres could be not only designed for Preservation but could also be developed with other Plan-Wide Activities and Very Low Density Use, as described in the ECMSHCP. However, it is important to note that due to the inherent complexities of the RSLA program and the uncertainties in the proposed types, locations, and intensities of ***traditional rural use***, the basis of analysis in determining potential environmental effects in this dEIS makes a conservative assumption that the approximately 107,000 acres of lands would be designated solely for preservation.

In addition to the activities undertaken through the Plan, the Marinelli Fund, founded by the FPPP and funded through implementation of the ECMSHCP, is expected to supplement the proposed ECMSHCP by undertaking additional conservation activities within and around the ECMSHCP area. The Marinelli Fund was originally intended to be used "for panther habitat restoration, including restoration of the functional corridors, buffering against panther-human interaction, locating and construction of panther crossings, and acquisition of habitat demonstrated to be important to panther management within the [RLSP area]" (FPPP 2008). The FPPP has since expanded the mission of the Fund, as described in the ECMSHCP, to include conservation actions to benefit the 18 other Covered Species, in addition to the FP, as well as other wildlife.

## 2.4 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSIS

### 2.4.1 Alternative 3 – Issuance of ITP for Panther Only

The Panther-Only ECMSHCP Alternative is similar to the proposed ECMSHCP in terms of the total acreage of Covered Activities; the configuration of lands designated for Covered Activities; and the lands designated for Preservation/Plan-Wide Activities, Very Low Density Use, and Base Zoning (See Section 2.1, Features Common to All Alternatives). However, the Panther-Only ECMSHCP Alternative only addresses the FP. Under this alternative, the FP would be the only species covered under an ITP. Although an integrated long-term plan would be provided for FP conservation, any take of other listed species and conservation measures to benefit the other Covered Species would be determined on a project-by-project basis by the landowners and the relevant permitting authorities for those projects.

The Panther-Only ECMSHCP Alternative would be effective for meeting the primary conservation goal of protecting extensive land areas for the FP through an overall integrated plan and would allow ECMSHCP efforts to focus on the panther. Because this alternative would not include the 18 other Covered Species, however, biological goals and objectives would not be established for those species and an integrated approach to their conservation within the ECMSHCP area would not be included. Monitoring for these other species would not be required, missing a valuable opportunity to collect important data on their status, habitat utilization, and responses to variable environmental conditions on private lands, and similar conservation information. Therefore, this alternative does not meet the stated purpose and need of this dEIS and was not carried forward for detailed analysis in Chapter 4.

### 2.4.2 Alternative 4 – Issuance of ITP for Florida Panther Protection Program Review Team (PRT) Configuration

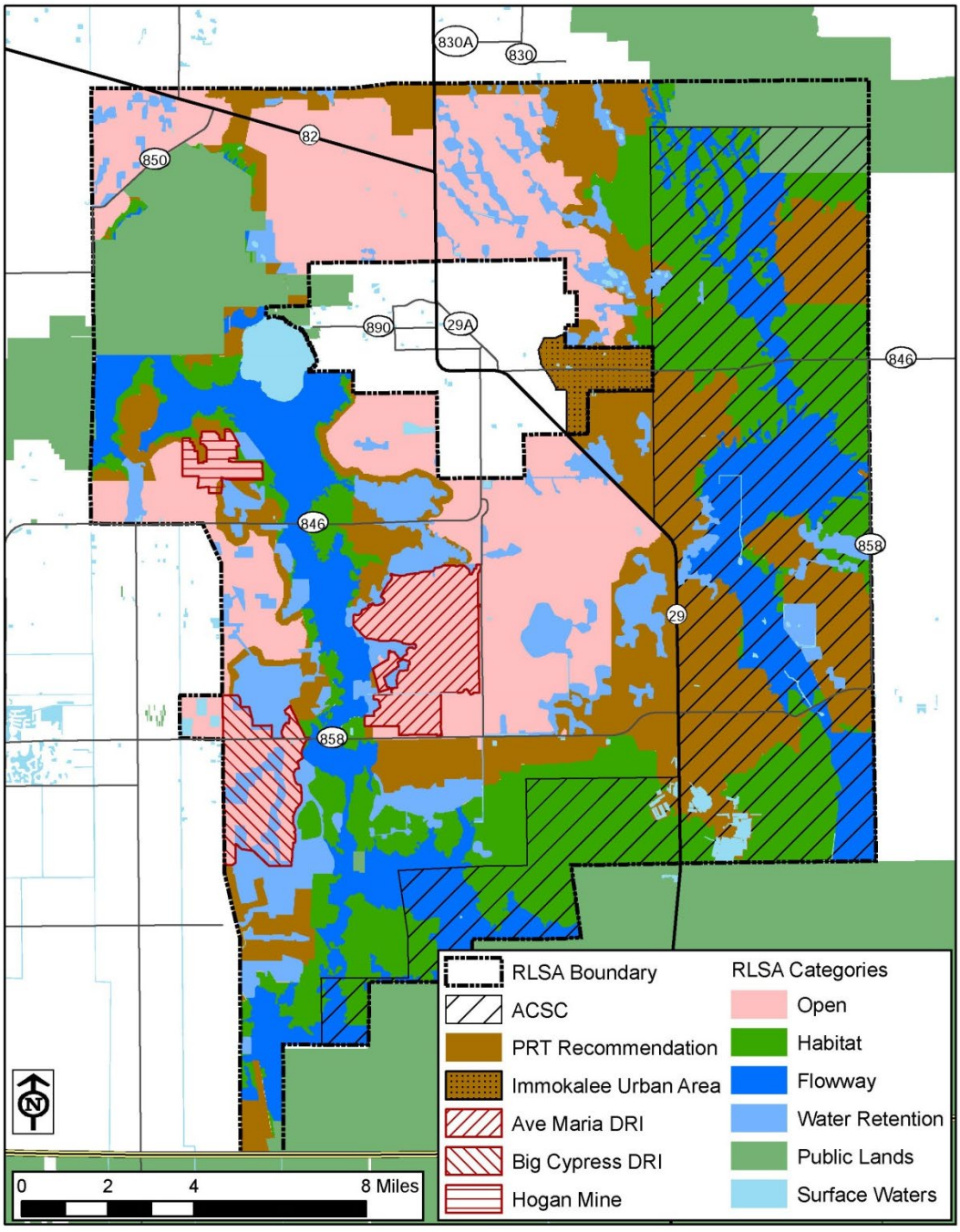
Under the PRT Configuration Alternative, the PRT map (Figure 2-2) would be the basis for configuring the extent of Covered Activities within the ECMSHCP area. Aside from differences in the specific location of Covered Activities, this alternative is very similar to Alternative 2.

The main difference between this alternative and Alternative 2 is the location of areas designated for Covered Activities. Figure 2-3 depicts the PRT recommendations in relation to the RLSA. There is a high degree of overlap in terms of the locations proposed for the Covered Activities under the ECMSHCP and the locations left open for potential future development under the PRT Configuration Alternative. The primary difference between the maps is that the PRT Configuration Alternative includes additional preservation areas south and north of County Road (CR) 858 and southeast of the Immokalee Urban

Area, buffers added along the Camp Keais Strand and Corkscrew system, and different configurations and widths for panther corridors.

Although both the PRT Configuration Alternative and Alternative 2 would provide benefits to the FP and the other Covered Species, the ECPO proposed Alternative 2 over the PRT Configuration Alternative for several reasons. First, the PRT configured the 45,000 acres of potential future development without regard to property ownership within the RLSP "Open" areas. This was reasonable given that the PRT was exploring various scenarios for enhancing panther conservation under the RLSP. However, approximately 13,000 acres mapped by the PRT for potential future development are not owned or controlled by the ECPO, and the owners of those lands have not elected to be included in the ECMSHCP (see Figure 2-1, legend item "Eligible for ECMSHCP Inclusion (Non-ECPO Lands)").[5]

[5] For the lands that are "Eligible for Inclusion (Non-ECPO Lands)," and located outside the 151,779-acre ECMSHCP area, land ownership factors (e.g., fragmented holdings, smaller parcel sizes, legal encumbrances) render it unlikely that many of these areas are practically suited to higher-density development under the RLSP. These land holdings include over 400 parcels with over 250 unique ownership entities, with an average parcel size of 50 acres (Collier County Property Appraiser 2017).




Source: FPPP Technical Review Team 2009

**Figure 2.4-1. Panther Review Team Map**

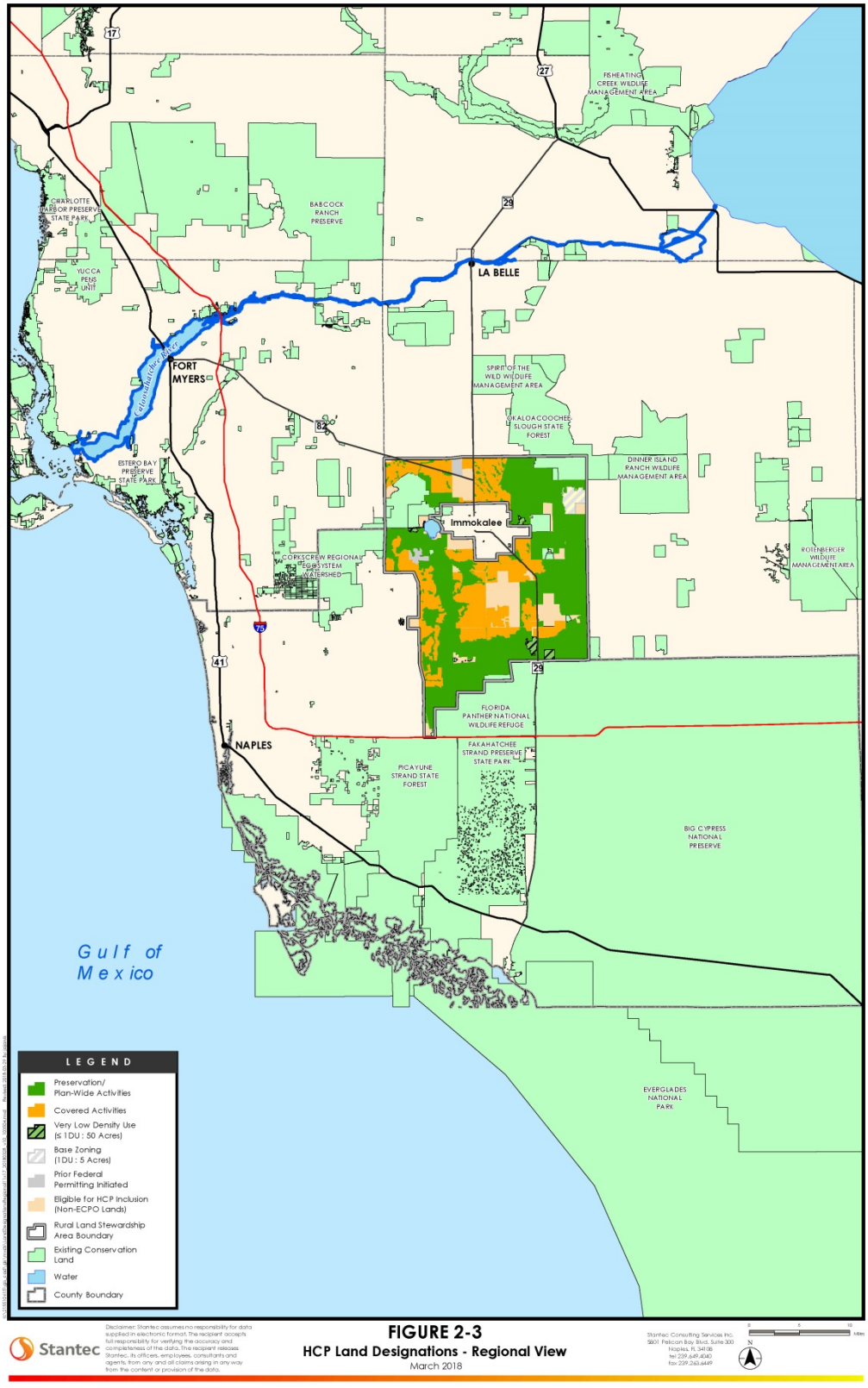



**Figure 2.4-2. East Collier Multiple Species Habitat Conservation Plan Land Designations – Regional View**

Second, considering the ECPO and their holdings, some of the PRT's recommendations are not logistically feasible based on land ownership configurations. Some applicants maintain holdings only in areas that the PRT recommended for preservation, yet those applicants possess property and zoning rights that allow for development whether or not the proposed ECMSHCP is implemented. Adopting the PRT Configuration Alternative would eliminate the interests of some of the applicants, causing them to withdraw from the ECMSHCP to pursue their interests, and therefore would not achieve the result intended by the PRT.

Third, the PRT's recommendations are outdated in a number of respects. Some of the recommendations are no longer available due to planning and permitting activities that have occurred during the years since the PRT recommendation was made. Therefore, this alternative does not meet the stated purpose and need of this dEIS and was not carried forward for detailed analysis in Chapter 4.

# CHAPTER 3.0 AFFECTED ENVIRONMENT

## 3.1 ENVIRONMENTAL SETTING

### 3.1.1 Scope of Analysis

This section describes the environmental setting of the area potentially affected by the proposed action and alternatives. The environmental setting refers to the natural attributes of the region such as soils and climate, as well as the relationship of the ECMSHCP area to places where people live, work, and participate in recreational activities.

### 3.1.2 General Geography

Collier County is bounded by five counties (Hendry, Broward, Miami-Dade, Monroe, and Lee). It is the largest county in Florida by land area (1,998 square miles) and fourth largest by total area. It encompasses 307 square miles (13.3 percent) of which is water (Collier 2016).

Though commonly referred to as eastern Collier County due to its location east of the major population center of Naples, the ECMSHCP area is geographically located in the north-central portion of Collier County between Hendry and Lee Counties. The cities of Naples and Bonita Springs and the Village of Estero are located approximately 14 miles west of the ECMSHCP area. The Southwest Florida International Airport is approximately 12 miles northwest of the ECMSHCP area and the City of Labelle is approximately 15 miles to the north. The BCNP and the adjacent FPNWR are located in the southeastern portion of the county. The ECMSHCP area also surrounds the unincorporated town of Immokalee.

### 3.1.3 Topography

Ecoregions are broadly defined as geographic areas possessing similar ecosystems, classified either by single factors (e.g., vegetation) or multiple factors (e.g., climate, vegetation, geology, topography, hydrology, and soils).

Most of the ECMSHCP area is located on a regional topographic high known as the Immokalee Rise, which corresponds to the southern limit of the Southwestern Florida Flatwoods ecoregion (Figure 3.1-1, Ecoregion 75b). The Immokalee Rise was described and delineated as a geomorphic unit by White (1970), and was included in the Physiographic Divisions of Florida map (Brooks 1981a) and accompanying geomorphic unit summaries (Brooks 1981b). The Immokalee Rise is bounded on the southeast (outside the ECMSHCP area) by a geomorphic feature that White (1970) mapped as the Big Cypress Spur, an area with elevations lower than the Immokalee Rise but slightly higher than the Everglades ecoregion to the east (Campbell 1988). The southern and southwestern portions of the ECMSHCP area grade into an area termed the Southwestern Slope, which dips generally to the southwest at a very low gradient. The boundary between the Immokalee Rise and Southwestern Slope geomorphic units of White (1970) corresponds closely to the Level IV ecoregions boundary between the Southwestern Florida Flatwoods and Big Cypress ecoregions (Figure 3.1-1).

Figure 3.1-2 depicts the surface elevations within the ECMSHCP area, derived from Light Detection and Ranging data (FDEM 2009). The highest topographic areas within the ECMSHCP area are found on the Immokalee Rise north and northeast of Lake Trafford near the Collier County-Hendry County line, with maximum elevations of 41 feet above sea level (North American Vertical Datum of 1988; USGS 1987; FDEM 2009). From the Immokalee Rise area, elevation generally decreases toward the south and southwest, with slough systems and localized depressions occurring throughout the landscape. The lowest elevations within the ECMSHCP area are found in the southwestern portion of the area, where spot measurements of 12 feet above sea level comprise the minimum recorded land elevation (USGS 1990; FDEM 2009).

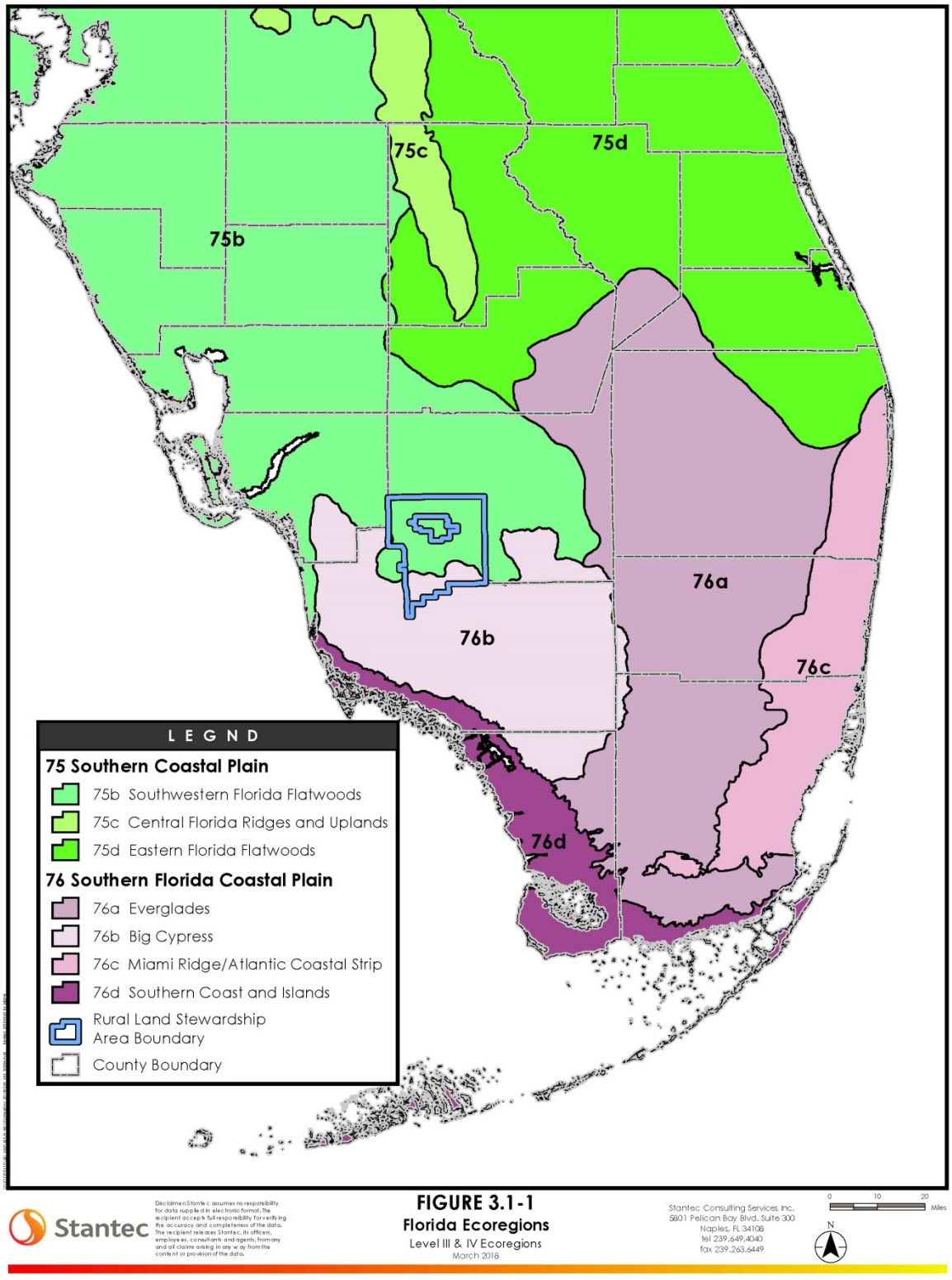



**Figure 3.1-1. Florida Ecoregions**

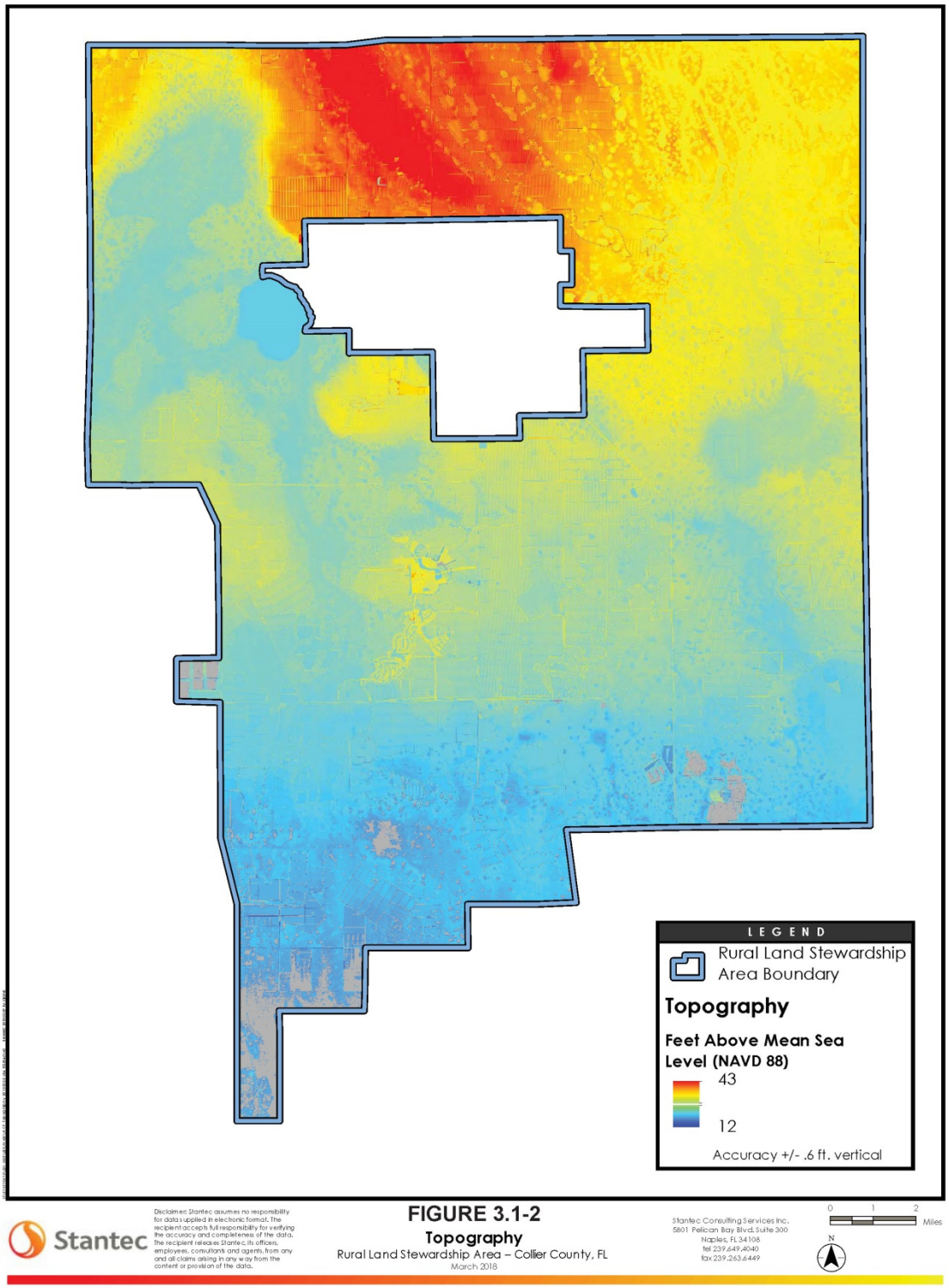



**Figure 3.1-2. Topography**

### 3.1.4 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 that 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). 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. Information for the United States at national and regional levels is summarized in the National Climate Assessment (NCA). 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. 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. Climatic changes, including sea level rise (SLR) and shifts in seasonal precipitation, temperature, and tropical storms, are expected to affect South Florida's human population and ecosystems.

**Sea Level Rise**

The National Oceanic and Atmospheric Administration's (NOAA) 2017 studies have developed scenarios that range from 1 foot to 8 feet of SLR by 2100. Tidal gauges around Florida have shown 10 inches of SLR since 1920. However, in the last 18 years there has been 5 inches of SLR in southeastern Florida. This recent acceleration makes the medium to extreme-high scenarios most probable and the low and intermediate-low scenarios (NOAA 2017) not possible. Under these scenarios, land areas nearer to the coast in southwestern Florida will become partially or completely inundated (*i.e.,* under water) at some point during this century (Figure 3.1-3). However, decades prior to surface inundation, areas nearer to the coast undergo vegetation shifts triggered by changes to hydrology (wetter), salinity (higher), and more frequent storm surge and king tide events (pulse events causing massive erosion and salinization of soils) (Saha et al. 2011). In other words, upland ecosystems such as pine flatwoods and freshwater marsh communities will convert to mangroves earlier than expected due to root zone inundation from saltwater. Recent USFWS South Florida Ecological Services Office climate change training workshops have recommended that the intermediate, intermediate-high, and high scenarios from NOAA (2017) should be considered. Higher fall and winter rainfall (+~20%), lower spring and summer rainfall (-~30%), and warmer temperatures by 3 to 7 degrees Fahrenheit (°F) should also be considered for regions of Florida (USFWS 2018).

The boundary of the ECMSHCP was overlaid on SLR inundation maps predicted for Collier, Lee, and Monroe Counties (Figure 3.1-3). These SLR inundation maps were created by the University of Florida GeoPlan Center (https://sls.geoplan.ufl.edu) using the Corps and NOAA SLR projections. Based on the GeoPlan Center's SLR inundation prediction maps for years 2040 and 2070, the proposed ECMSHCP area is too far inland to be inundated in the foreseeable future by SLR (Figure 3.1-3). In addition, the height of the underground saltwater intrusion under the highest SLR scenario is not predicted to reach the root zone of habitats within the ECMSHCP boundary. Therefore, habitats are not expected to change due to SLR within the ITP time frame.

**Temperatures**

According to the NCA, projected increases in Florida's average annual temperatures by 2100 vary from +3° to +7°F, depending on the emissions scenario used and the region within Florida. Increasing global temperatures cause more glacier and polar ice sheet melt, which in turn increases the rate of SLR. statewide temperature increases will change levels of humidity and rates of evapo-transpiration, leading to changes in vegetation growth seasons and location. Increasing temperatures can also affect the sex ratio of some species, especially reptiles such as sea turtles, leading to a decline in species populations.

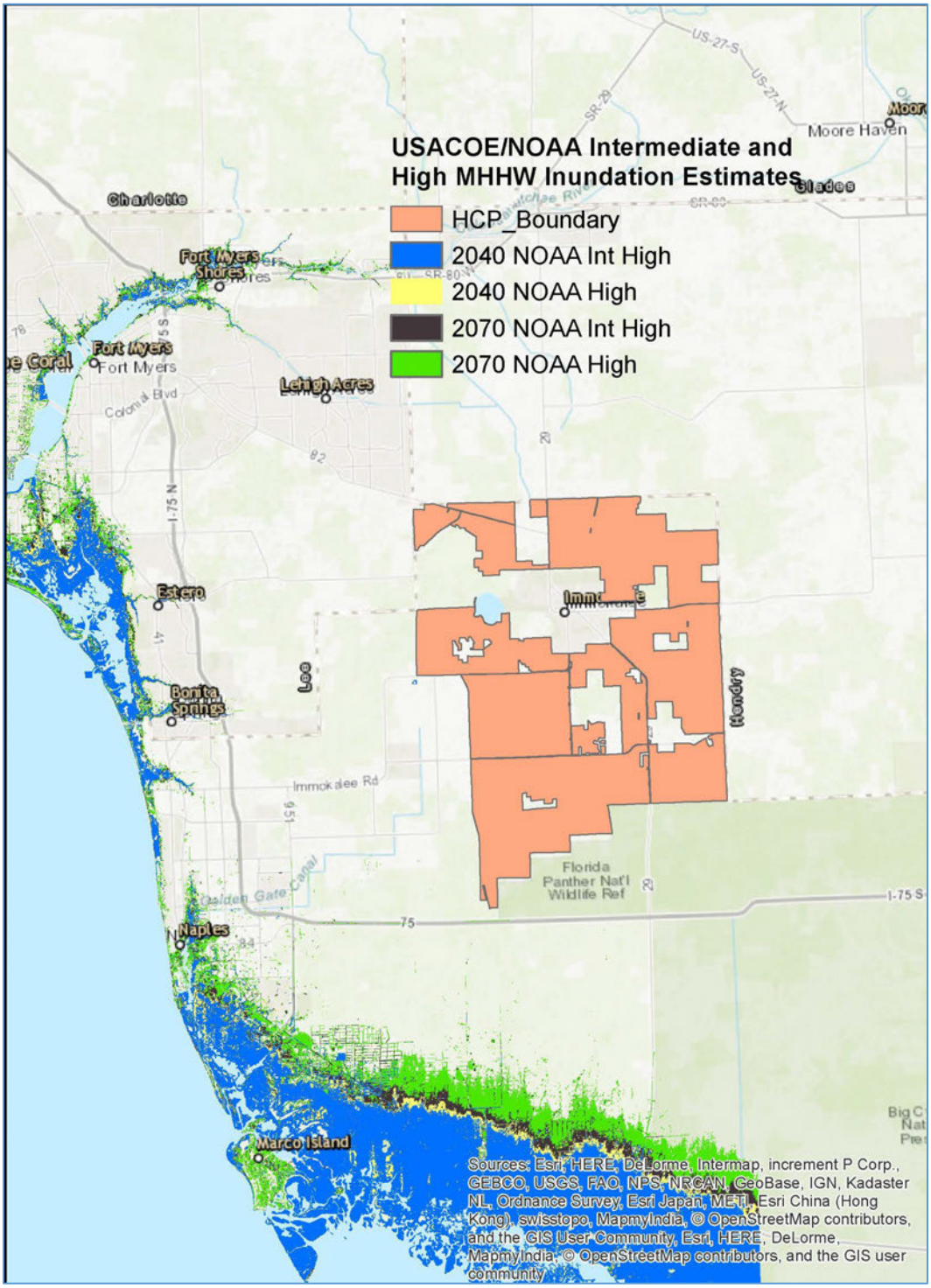



**Figure 3.1-3. Years 2040 and 2070 sea level rise inundation predictions (National Oceanic and Atmospheric Administration [2017] Intermediate-High and High) in relation to the East Collier Multiple Species Habitat Conservation Plan location.**

Extreme heat events in Florida are projected to increase relative to 1986-2005. By the late 21st century the average temperatures on the hottest days will be 3° to 8°F warmer. Due to human-induced emissions of greenhouse gases (GHGs) that already have occurred, another +0.5°F increase in surface air temperature would be expected even if there was a sudden end to all GHG emissions caused by humans

(NCA 2014). Significantly more hot days (95°F or above) and fewer freezing events are projected. For the state of Florida, this equates to an increase of >50 hot days for western and southwestern Florida, +40 to 50 hot days for the interior of Florida, and +30 to 40 hot days for Florida's coastal areas.

**Anticipated Changes in Florida's Precipitation Patterns**
Higher fall and winter rainfall (+~20%), lower spring and summer rainfall (-~30%) and warmer temperatures by 3° to 7°F are anticipated for regions of Florida. These increases are linked, in part, to higher sea surface temperatures in the region. Natural variability of the Atlantic Multi-decadal Oscillation (AMO), El Nino South Oscillation (ENSO), human-induced emissions of heat-trapping gases, and particulate pollution all influence the warming or cooling of sea surface temperatures that lead to the annual precipitation trends.

**Anticipated Changes in Tropical Storm Frequency and Intensity**
There has been a substantial increase in most measures of Atlantic hurricane activity since the early 1980s, the period for which high-quality satellite data are available. These include measures of intensity, frequency, and duration, as well as the number of strongest (Category 4 and Category 5) storms. The recent increases in activity are linked, in part, to higher sea surface temperatures in the region that Atlantic hurricanes form in and move through. Numerous factors have been shown to influence these local sea surface temperatures, including natural variability of the AMO, human-induced emissions of heat-trapping gases, and particulate pollution.

Tropical storms and hurricanes are projected to be fewer in number but stronger in force, with more Category 4 and Category 5 hurricanes. Almost all existing studies project greater rainfall rates in hurricanes in a warmer climate, with projected increases of about 20 percent averaged near the center of hurricanes. Models also project changes in hurricane tracks and where they strike land.

Extreme events are expected to increase in strength and frequency with accelerated climate change. These increases are linked, in part, to higher sea surface temperatures in the region where Atlantic hurricanes form and move through.

**Anticipated Changes in Drought Duration**
As mentioned in the Precipitation section, dry consecutive days are expected to increase 10 to 20 percent for most of Florida, with up to 30 percent for South Florida.

**Anticipated Changes in Wildfire Frequency**
In some areas, prolonged periods of record high temperatures associated with droughts contribute to dry conditions that are driving wildfires. Wildfires can cause drastic changes in species composition, changes in tree density, increased flooding and erosion risks, and decreased carbon storage capacity. The effects of climate change weaken the natural protections ecosystems have against these extreme events, making them more vulnerable. However, some areas of southwest Florida are lacking a natural fire regime which results in a reduction in habitat quality for many species. Wildfire could be beneficial in some of these areas.

### 3.1.5 Regional Ecosystems

USFWS has divided peninsular Florida into two major ecosystem units – North Florida and South Florida – based primarily on regional watersheds and county boundaries (USFWS 2000). The U.S. Environmental Protection Agency (USEPA) has further delineated ecoregions within Florida, determined by the interactions of multiple environmental factors, including climate, vegetation, geology, topography, hydrology, soils, human land use, and other factors (Omernik 1987; Griffith et al. 1994).

Figure 3.1-1 shows the location of the ECMSHCP area relative to the "Level III and IV Ecoregions of Florida" map (USEPA 2012). USEPA "Level IV" ecoregions correspond most closely to the interrelated ecological characteristics and gradients within and around the ECMSHCP area.

The majority of the ECMSHCP area is located within the "Southwestern Florida Flatwoods" Level IV ecoregion (Figure 3.1-1, Ecoregion 75b), specifically within a physiographic division known as the Immokalee Rise (Brooks 1981a; Griffith et. al. 1997). The Immokalee Rise comprises a local topographic high between the Caloosahatchee River valley and the Big Cypress swamp, with extensive uplands, large

slough (flowway) wetland systems, and depressional wetlands. This portion of the ECMSHCP area is largely uplands, with the total acreage of non-hydric soils, undeveloped upland communities, and agricultural land uses exceeding the total acreage of hydric soils and wetlands (FWC and FNAI 2016).

The southern portion of the ECMSHCP area, roughly located south of Oil Well Road and adjacent to the FPNWR, comprises a lower elevation landscape with a higher proportion of hydric soils and native wetland communities (forested wetlands and marsh wetlands). Local topographic highs within this landscape support upland forests and some areas have been historically utilized for agriculture. This southern area falls within the "Big Cypress" Level IV ecoregion, part of the greater "Southern Florida Coastal Plain" ecoregion (Figure 3.1-1, Ecoregion 76b). Topography, soils, vegetation communities, and drainage networks within the Big Cypress Level IV ecoregion are generally similar in nature to those found elsewhere within the ECMSHCP area, but differ primarily in extent and proportion from those found on the Immokalee Rise ecoregion. For example, forested wetlands occur throughout the ECMSHCP area, but comprise a much greater proportion of the land area south of Oil Well Road as compared to areas to the north (see Figure 3.1-4).

The ECMSHCP area is topographically and hydrologically separated from the Everglades ecoregion to the east by the Immokalee Rise in southern Hendry County, and the Big Cypress Spur topographic feature along the Collier, Broward, and Miami-Dade County boundaries (USEPA 2012, Brooks 1981a, White 1970).

### 3.1.6 Existing Land Uses

The ECMSHCP area was mapped in detail in 1999-2000, as part of the design process for the Collier County RLSP (WilsonMiller 2000). The land cover mapping utilized true color and 1995 USGS color infrared aerial photography as mapping bases, at a field mapping scale of 1:12,000 (1" = 1000'). Land cover map units were delineated by aerial photo interpretation, and classified according the Florida Land Use, Cover and Forms Classification System Level III categories (FDOT 1999). A formal accuracy assessment of the mapping was performed using National Biological Service standard methods (Stadelmann et al. 1994), with polygons in each land cover class selected randomly by a geographic information system (GIS). The statistics for the stratified random sampling of 135 polygons indicated an overall map accuracy of 91 percent, with a 90 percent probability that the true map accuracy was within ±5 percent of this estimate.

The Florida Fish and Wildlife Conservation Commission (FWC) subsequently developed and implemented a state Wildlife Action Plan that highlighted the need for habitat-based land cover mapping and an associated land cover classification system (FWC 2014). FWC partnered with Florida Natural Areas Inventory (FNAI) to develop the land cover mapping from existing data sources and expert reviews of aerial photography, resulting in a statewide Cooperative Land Cover (CLC) Map. The CLC classification schema incorporated classifications from the FWC, FNAI, and Florida Department of Transportation (FDOT) classification systems, and was reviewed and revised by experts knowledgeable of Florida's natural communities and image processing (FWC 2014). For conservation planning purposes, the CLC mapping represents the best available data set for characterizing land cover within the ECMSHCP area, and was therefore used for GIS analyses.

Figure 3.1-4 shows a thematic grouping of the current iteration (version 3.2, vector) of the CLC mapping (FWC and FNAI 2016). Table 3.1-1 provides a breakdown of land use/land cover (LULC) categories grouped by broad CLC classes and ECMSHCP land designations. In terms of LULC, active agriculture (including croplands, groves, sod, pastures, and nurseries) comprises approximately 50 percent of the ECMSHCP area. Native wetlands account for approximately 39 percent of the total ECMSHCP area, and are split roughly evenly between forested and marsh (mainly herbaceous) wetland systems. Undeveloped uplands comprise 9 percent of the ECMSHCP area, with forested uplands comprising over 88 percent of undeveloped uplands. Over 92 percent of the total native vegetation acreage within the ECMSHCP area occurs within land designations slated for protection under the ECMSHCP. Open water, consisting of cultural lacustrine/riverine and natural lakes/ponds total 1,245 acres, or 1 percent of the ECMSHCP area (Lake Trafford is not included within the ECMSHCP area). Approximately 1 percent of the ECMSHCP area consists of existing development, primarily the Town of Ave Maria (depicted on Figure 3.1-4), based on the latest CLC revision (the CLC is now continuously revised, with version updates every 6-12

months). The remaining land uses, including exotic vegetation removal, earth mining, roadways, power transmission lines, and oil and gas facilities, comprise approximately 1 percent of the total ECMSHCP area.

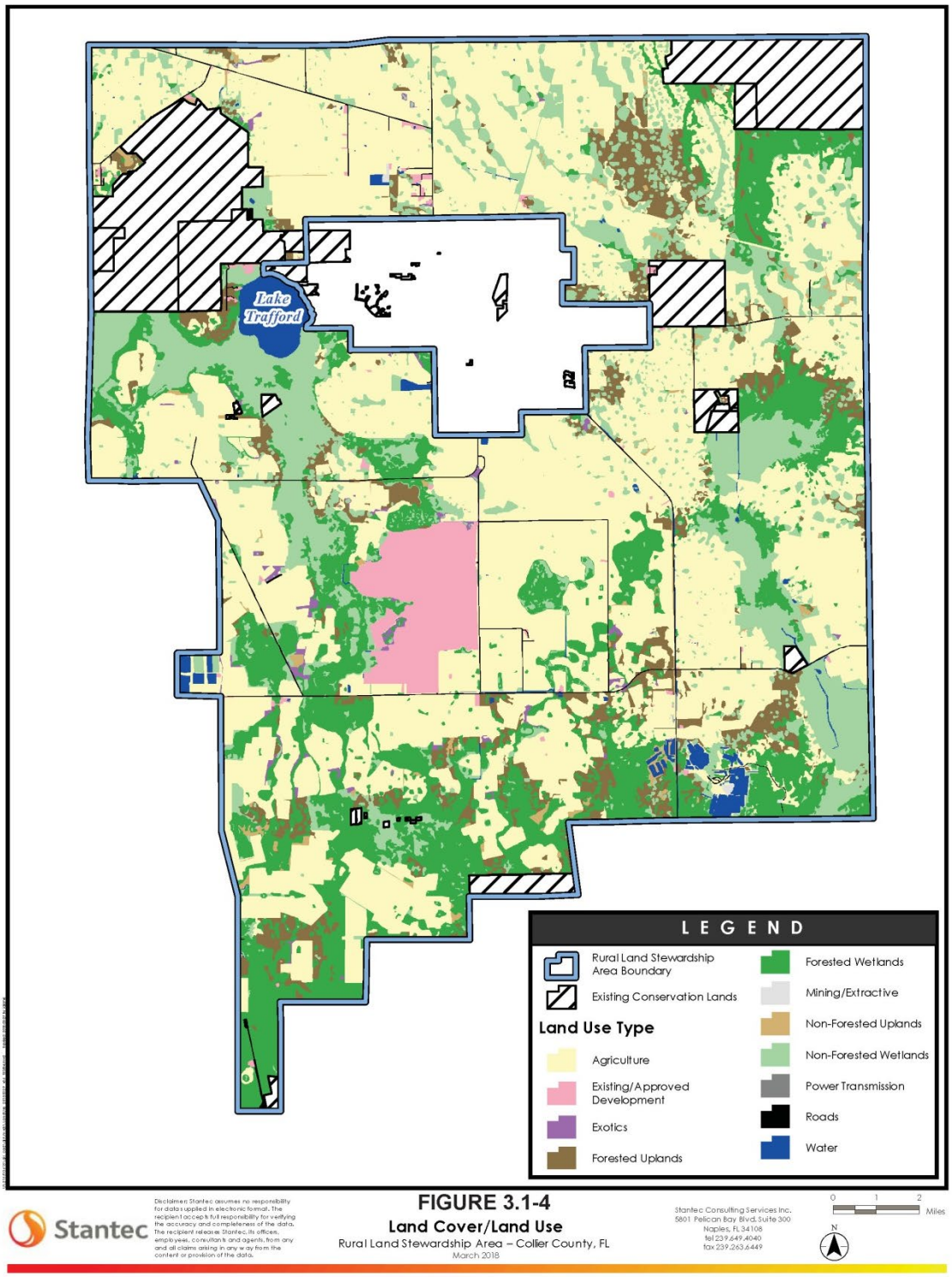



**Figure 3.1-4. Land Use/Land Cover**

**Table 3.1-1. Land use / land cover within the East Collier Multiple Species Habitat Conservation Plan Area, by Cooperative Land Cover (CLC) classes**

| CLC Code | CLC Class | Covered Activities (acres)* | Plan-Wide/ Preservation (acres) | Very Low Density Use (acres) | Base Zoning (acres)** | Total acres |
|---|---|---|---|---|---|---|
| 1120 | Mesic Hammock | 440 | 1,194 | 71 | 16 | 1,722 |
| 1210 | Scrub | 0 | 9 | 0 | 0 | 9 |
| 1311 | Mesic Flatwoods | 1,082 | 6,217 | 125 | 0 | 7,424 |
| 1312 | Scrubby Flatwoods | 0 | 29 | 0 | 0 | 29 |
| 1340 | Palmetto Prairie | 1 | 127 | 0 | 0 | 128 |
| 1400 | Mixed Hardwood-Coniferous | 253 | 2,342 | 111 | 0 | 2,707 |
| 1500 | Shrub and Brushland | 427 | 882 | 138 | 0 | 1,448 |
| 1800 | Cultural - Terrestrial | 0 | 7 | 0 | 0 | 7 |
| 1821 | Low Intensity Urban | 1,175 | 52 | 0 | 0 | 1,228 |
| 1822 | High Intensity Urban | 336 | 10 | 0 | 0 | 346 |
| 1830 | Rural (Rural Open Lands) | 1,729 | 4,410 | 117 | 0 | 6,257 |
| 18331 | Cropland/Pasture | 15,795 | 9,481 | 0 | 568 | 25,844 |
| 183313 | Improved Pasture | 5,126 | 9,467 | 446 | 1,211 | 16,250 |
| 18332 | Orchards/Groves | 19,842 | 8,287 | 0 | 1 | 28,131 |
| 18334 | Fallow Orchards | 1 | 39 | 0 | 0 | 40 |
| 18335 | Other Agriculture | 0 | 1 | 0 | 0 | 1 |
| 1840 | Transportation | 304 | 93 | 10 | 4 | 411 |
| 1850 | Communication | 3 | 0 | 0 | 0 | 3 |
| 1860 | Utilities | 22 | 2 | 0 | 0 | 24 |
| 1870 | Extractive | 0 | 36 | 33 | 0 | 69 |
| 1880 | Bare Soil/Clear Cut | 0 | 7 | 0 | 0 | 7 |
| 2100 | Freshwater non-Forested Wetlands | 10 | 103 | 0 | 0 | 114 |
| 2110 | Prairies and Bogs | 908 | 8,391 | 102 | 0 | 9,400 |
| 2120 | Marshes | 1,174 | 15,829 | 67 | 0 | 17,060 |
| 2121 | Isolated Freshwater Marsh | 9 | 1,349 | 0 | 536 | 1,895 |
| 2200 | Freshwater Forested Wetlands | 139 | 4,467 | 290 | 0 | 4,897 |
| 2210 | Cypress/Tupelo | 143 | 1,801 | 67 | 0 | 2,011 |
| 2211 | Cypress | 140 | 12,400 | 72 | 0 | 12,613 |
| 2213 | Isolated Freshwater Swamp | 190 | 4,020 | 3 | 0 | 4,213 |
| 22131 | Dome Swamp | 0 | 280 | 0 | 37 | 317 |
| 2214 | Strand Swamp | 0 | 1,754 | 0 | 1 | 1,755 |
| 2220 | Other Coniferous Wetlands | 11 | 13 | 0 | 0 | 24 |
| 2221 | Wet Flatwoods | 169 | 2,414 | 1 | 53 | 2,637 |
| 2230 | Other Hardwood Wetlands | 4 | 450 | 9 | 0 | 463 |
| 2232 | Hydric Hammock | 0 | 118 | 0 | 2 | 120 |
| 3000 | Lacustrine | 0 | 48 | 9 | 0 | 58 |
| 3100 | Natural Lakes and Ponds | 0 | 21 | 1 | 0 | 22 |
| 3200 | Cultural - Lacustrine | 330 | 298 | 412 | 0 | 1,050 |
| 4200 | Cultural - Riverine | 33 | 92 | 0 | 0 | 125 |
| 7000 | Exotic Plants | 377 | 541 | 2 | 0 | 920 |
| **TOTALS*** ** | | **50,175** | **97,086** | **2,087** | **2,431** | **151,779** |

Source: Fish and Wildlife Conservation Commission and Florida Natural Areas Inventory 2016

* The actual acreage of Covered Activities at Plan completion will be 45,000 acres. The balance (5,175 acres) will be placed in Preservation/Plan-Wide Activities.

** The Base Zoning acres will be placed in Preservation/Plan-Wide Activities or Covered Activities by Plan completion. If these acres are placed in Covered Activities, an equivalent number of acres that otherwise would have been included in Covered Activities will be placed into Preservation/Plan-Wide Activities to maintain the 45,000-acre cap on Covered Activities.

*** Acreage data entries in this table were rounded to the nearest acre. The subtotals reflect the total acreage of each Plan land designation as calculated by geographic information system.

The amount of land actually used for agriculture within the ECMSHCP area is much greater than the simple acreage quantified by agricultural land cover types. For example, grazing leases exist throughout the ECMSHCP area, across virtually all vegetated cover types. Cattle graze in improved and unimproved pastures, rangeland in varying stages of succession, undeveloped uplands, and native wetland communities. Overall, the distribution of land cover types within the ECMSHCP area creates a landscape-scale matrix of habitats that allow for support of the Covered Species. Large blocks of interconnected native habitats exist, providing an opportunity for the preservation and potential enhancement of regional wildlife corridors. The Camp Keais Strand and Okaloacoochee Slough flowways form the core of the two major wildlife corridors that extend through the ECMSHCP area (Oetting et al. 2014), and are of particular benefit to wide-ranging species, such as the FP.

## 3.2 GEOLOGY AND SOILS

### 3.2.1 Scope of Analysis

This section describes the environmental setting with regard to the soils and geologic conditions on and in the vicinity of the ECMSHCP area.

### 3.2.2 Geology

Peninsular Florida is comprised of a thick sedimentary sequence of predominantly carbonate rocks, which rests on an igneous-metamorphic basement complex known as the Florida Platform (Scott 1992). In Collier County, the sedimentary sequence is approximately 17,000 feet (5.2 miles) thick, and the deepest and oldest sedimentary rocks date to the Jurassic Period (Applegate and Lloyd 1985, Campbell 1988). These basal clastic sedimentary rocks, known as the Wood River Formation, are overlain by more than 10,000 feet of Cretaceous limestone, dolomite, and evaporite deposits (Scott 1992, Pollastro et al. 2000).

At 11,000-12,000 feet below mean sea level, a lower Cretaceous geologic (stratigraphic) unit known as the Sunniland Formation contains scattered fields of petroleum deposits (the Sunniland Trend). The petroleum in the Sunniland Trend was first discovered in the early 1940s near Sunniland, in the southeastern portion of the ECMSHCP area. Since the discovery of petroleum in the area, a total of 11 oil and gas fields have been identified and placed into production in Collier County. Most of those oil and gas fields are still in production (Applegate and Lloyd 1985). Oil and gas exploration and production activities continue within the Sunniland Trend, extending across the ECMSHCP area, BCNP, Hendry County, and Lee County.

The Cretaceous rocks in eastern Collier County are overlain by more than 5,000 feet of Cenozoic strata, predominantly carbonate rocks. Siliciclastic materials (transported sediments like quartz sand, silt, and/or clay) appear more frequently in strata of the Miocene epoch and younger (23 million years ago and younger) than in older Cenozoic strata. Detailed stratigraphic descriptions for various units and geologic interpretations are well documented in several publications (Knapp et al. 1986, Campbell 1988, Camp, Dresser & McKee Inc. [CDM] 2002). Aside from oil and gas deposits at depth, the significance of Collier County's geologic framework for the ECMSHCP is limited to the upper portions of the geologic column. These near-surface strata and deposits are significant because they determine the characteristics of the regional aquifer systems and water supply, serve as substrate (parent materials) for soil formation, and provide construction materials, such as limestone and sand, for human activities. The Tamiami Formation, which has poorly consolidated sands and limestone, is near or at the surface in Collier County (U.S. Geological Survey [USGS] 2018a).

The mined mineral resources in eastern Collier County currently consist of crushed limestone and fill sand, which are excavated by open pit methods from near-surface deposits (Campbell 1988). There are three mines in the area. One active mine (Sunniland Mine) exists in the southeastern portion of the ECMSHCP area (US Mining 2018).

Karst features include Lake Tafford (1,500-acre karstic lake) along with two mapped sinkholes, located in Naples and Immokalee (Florida Center for Instructional Technology [FCIT] 2018).

According to USGS, earthquakes are not probable in the area. There is less than a 1 percent chance of a potentially minor damaging quake (USGS 2018b). No mapped faults are known or anticipated (USGS 2000).

### 3.2.3 Soils

In general, eastern Collier County consists mainly of poorly to very poorly drained soils, where small changes in ground elevation can influence the range of water table depths and consequently the native vegetation patterns. As discussed in this chapter, extensive ditching and canal excavations for agriculture, roadways, urban stormwater drainage, and other land uses have historically altered the drainage class of many soils.

These soils generally formed in the sandy unconsolidated deposits associated with Pleistocene sea-level fluctuations, nearshore depositional environments, and marine terrace sequences (Liudahl et al. 1998, Scott 1992). Sandy deposits tend to be thicker (20-40 feet) in the northern part of the county (near Immokalee) and become thin or absent in the southern portions of the ECMSHCP area, often exposing the underlying limestone or "caprock" (Campbell 1988).

A complex variety of soil types have been mapped within the ECMSHCP area (NRCS 1998) (Table 3.2-1). Despite the diversity of soils in the ECMSHCP area, nearly all are characterized as poorly to very poorly drained. An exception is the Pomello fine sand, which is a moderately well-drained soil found on low ridges and typically supporting a flatwoods community. As a whole, soils containing less than 41 percent hydric inclusions, and thereby considered "upland" soils for the purpose of this dEIS, make up approximately 39 percent of the ECMSHCP area. Of these, Immokalee fine sand and Oldsmar fine sand are the most common. Most of the citrus and row crops in the ECMSHCP area are located in areas of Immokalee fine sand and Oldsmar fine sand.

**Table 3.2-1. Soils in the East Collier Multiple Species Habitat Conservation Plan Area**

| Hydric Class | Soil Type | Percent Hydric | Hectares | Acres | Percent of Total |
|---|---|---|---|---|---|
| Non-Hydric (Upland) Soils | Pomello fine sand, 0 to 2 percent slopes | 0 | 221.4 | 547.1 | 0.4 |
| | Urban land-Matlacha-Boca complex | 0 | 225.0 | 555.9 | 0.4 |
| | Satellite fine sand, 0 to 2 percent slopes | 4 | 3.4 | 8.4 | 0.0 |
| | Myakka fine sand, 0 to 2 percent slopes | 6 | 529.7 | 1,309.0 | 0.9 |
| | Chobee, limestone substratum, and Dania mucks, depressional | 8 | 1.7 | 4.3 | 0.0 |
| | Urban land-Holopaw-Basinger complex | 8 | 0.6 | 1.4 | 0.0 |
| | Ft. Drum and Malabar, high, fine sands | 10 | 1,014.9 | 2,507.8 | 1.6 |
| | Immokalee fine sand, 0 to 2 percent slopes | 10 | 9,602.2 | 23,727.6 | 15.5 |
| | Oldsmar fine sand, 0 to 2 percent slopes | 10 | 6,063.0 | 14,982.1 | 9.8 |
| | Oldsmar fine sand, limestone substratum | 10 | 2,099.2 | 5,187.2 | 3.4 |
| | Pineda and Riviera fine sands | 10 | 0.1 | 0.3 | 0.0 |
| | Riviera, limestone substratum-Copeland fine sands | 11 | 1.7 | 4.1 | 0.0 |
| | Boca sand | 12 | 1.7 | 4.1 | 0.0 |
| | Hallandale fine sand, 0 to 2 percent slopes | 13 | 579.6 | 1,432.3 | 0.9 |
| | Jupiter-Ochopee-Rock outcrop complex | 15 | 1.2 | 2.9 | 0.0 |
| | Wabasso fine sand, 0 to 2 percent slopes | 15 | 2,776.0 | 6,859.6 | 4.5 |
| | Hilolo, Jupiter, and Margate fine sands | 40 | 616.1 | 1,522.3 | 1.0 |
| | ***Subtotal Non-Hydric (Upland) Soils*** | | ***23,737.4*** | ***58,656.4*** | ***38.4*** |

**Table 3.2-1. Soils in the East Collier Multiple Species Habitat Conservation Plan Area**

| Hydric Class | Soil Type | Percent Hydric | Hectares | Acres | Percent of Total |
|---|---|---|---|---|---|
| Hydric Soils | Riviera fine sand, 0 to 2 percent slopes | 82 | 0.0 | 0.0 | 0.0 |
| | Tuscawilla fine sand | 90 | 1,644.0 | 4,062.5 | 2.7 |
| | Tuscawilla fine sand | 91 | 1.2 | 3.0 | 0.0 |
| | Boca fine sand, 0 to 2 percent slopes | 92 | 1,966.7 | 4,859.9 | 3.2 |
| | Pineda fine sand, limestone substratum | 93 | 1.7 | 4.3 | 0.0 |
| | Urban land | 93 | 5.4 | 13.4 | 0.0 |
| | Holopaw fine sand, 0 to 2 percent slopes | 95 | 2,325.6 | 5,746.8 | 3.8 |
| | Basinger fine sand, 0 to 2 percent slopes | 96 | 4,106.5 | 10,147.5 | 6.6 |
| | Boca fine sand, 0 to 2 percent slopes | 96 | 0.0 | 0.0 | 0.0 |
| | Estero and Peckish soils, frequently flooded | 96 | 0.6 | 1.5 | 0.0 |
| | Myakka sand, depressional | 97 | 0.9 | 2.2 | 0.0 |
| | Basinger fine sand, 0 to 2 percent slopes | 100 | 0.2 | 0.4 | 0.0 |
| | Boca, Riviera, limestone substratum, and Copeland fine sands, depressional | 100 | 8,415.4 | 20,794.9 | 13.6 |
| | Chobee fine sandy loam, depressional, 0 to 1 percent slopes | 100 | 0.6 | 1.6 | 0.0 |
| | Chobee, limestone substratum, and Dania mucks, depressional | 100 | 151.0 | 373.2 | 0.2 |
| | Chobee, Winder, and Gator soils, depressional | 100 | 3,856.5 | 9,529.6 | 6.2 |
| | Gator muck, frequently ponded, 0 to 1 percent slopes | 100 | 2.0 | 4.9 | 0.0 |
| | Gentry fine sand, depressional | 100 | 1.1 | 2.7 | 0.0 |
| | Hallandale and Boca fine sands | 100 | 356.6 | 881.1 | 0.6 |
| | Holopaw and Okeelanta soils, depressional | 100 | 557.7 | 1,378.0 | 0.9 |
| | Holopaw fine sand, limestone substratum | 100 | 1,505.8 | 3,720.9 | 2.4 |
| | Malabar fine sand, 0 to 2 percent slopes | 100 | 2,621.0 | 6,476.7 | 4.2 |
| | Ochopee fine sandy loam, low | 100 | 2.8 | 7.0 | 0.0 |
| | Oldsmar sand, depressional | 100 | 0.1 | 0.2 | 0.0 |
| | Pineda and Riviera fine sands | 100 | 2,001.3 | 4,945.2 | 3.2 |
| | Pineda fine sand, limestone substratum | 100 | 1,148.0 | 2,836.8 | 1.9 |
| | Riviera fine sand, limestone substratum | 100 | 768.5 | 1,899.0 | 1.2 |
| | Riviera, limestone substratum-Copeland fine sands | 100 | 243.7 | 602.1 | 0.4 |
| | Urban land-Holopaw-Basinger complex | 100 | 0.4 | 1.0 | 0.0 |
| | Urban land-Satellite complex | 100 | 0.2 | 0.5 | 0.0 |
| | Winder fine sand, depressional, 0 to 1 percent slopes | 100 | 1.3 | 3.2 | 0.0 |
| | Winder, Riviera, limestone substratum, and Chobee soils, depressional | 100 | 6,039.5 | 14,924.0 | 9.8 |
| | ***Subtotal Hydric Soils*** | | ***37,726.5*** | ***93,224.2*** | ***61.1*** |
| | Water | | 313.5 | 774.7 | 0.5 |
| | **Total** | | ***61,777.5*** | ***152,655.3*** | ***100.0*** |

Hydric soils make up approximately 61 percent of the ECMSHCP area. These soils include not only the swamp and herbaceous marsh areas, but many of the improved and unimproved pastures in the ECMSHCP area. Extensive ditching in many areas has lowered the groundwater elevation and drained these soils, making them more conducive to cattle grazing.

In terms of soil classification, the eastern Collier County soils classify into the Alfisol, Spodosol, Entisol, Mollisol, and Histosol soil orders. With few exceptions, these soils classify into the "aquic" suborders, reflecting their generally poor natural drainage and seasonally high water tables. Alfisols contain a clay-enriched subsurface horizon, while Spodosols are generally associated with flatwoods and dry prairie landscapes, and possess an organic-enriched subsurface horizon that contains higher amounts of aluminum and/or iron. The Entisols are soils with minimal horizon development that formed in sandy parent materials. Mollisols are mineral soils with a thick dark surface and high base saturation (high percentage of available calcium, magnesium, and potassium), occurring in lower, consistently moist or wet landscapes. Histosols are organic soils, which signify the year-round presence of water at or above the soil surface in normal rainfall years; they are typically found in the deepest marshes and/or adjacent to open water.

Figure 3.2-1 depicts the Natural Soils Landscape Position (NSLP) classification for the ECMSHCP area. The most extensive NSLP units within the ECMSHCP area are the "Flatwoods Soils," which Zahina et al. (2001) characterized as "poorly drained, nonhydric, upland soils with sandy marine sediments throughout the profile…Most of the soils in this category are Spodosols." In the ECMSHCP area, the next most extensive NSLP units are "Sand Depression" soils, which are hydric soils and very poorly drained. The Sand Depression soils depicted on Figure 3.2-1 generally coincide with the locations of the major flowways, cypress strands, and the depressional wetlands that are scattered across the landscape.

The NSLP "Flats Soils" occupy a landscape position between Flatwoods and Sand Depression soils, and are considered transitional between upland and wetland characteristics, tending toward wetland natural communities. Although categorized as hydric soils within the NSLP classification, they include some upland areas because the depth and/or duration of the seasonal high water table may not be sufficient to meet hydric soil and/or wetland hydrology criteria in slightly higher landscape positions.

Three NSLP classifications occupy relatively limited areas within the ECMSHCP area (Figure 3.2-1). "Knolls" are found on small ridges, or knolls, that rise a few feet higher than the surrounding uplands, but possess deeper water tables and support more xeric (drier) vegetation communities, such as upland hammocks, scrubby flatwoods, or scrub vegetation. At the opposite end of the soil hydrology continuum, "Muck Depressions" are found only where year-round soil saturation allows the development and persistence of thick layers of decomposed organic materials (muck). Finally, "Urban or Made Lands" NSLP units correspond to areas where the soils have been altered extensively by human activities, generally for urban development purposes, and such areas no longer function as they did in the natural landscape.

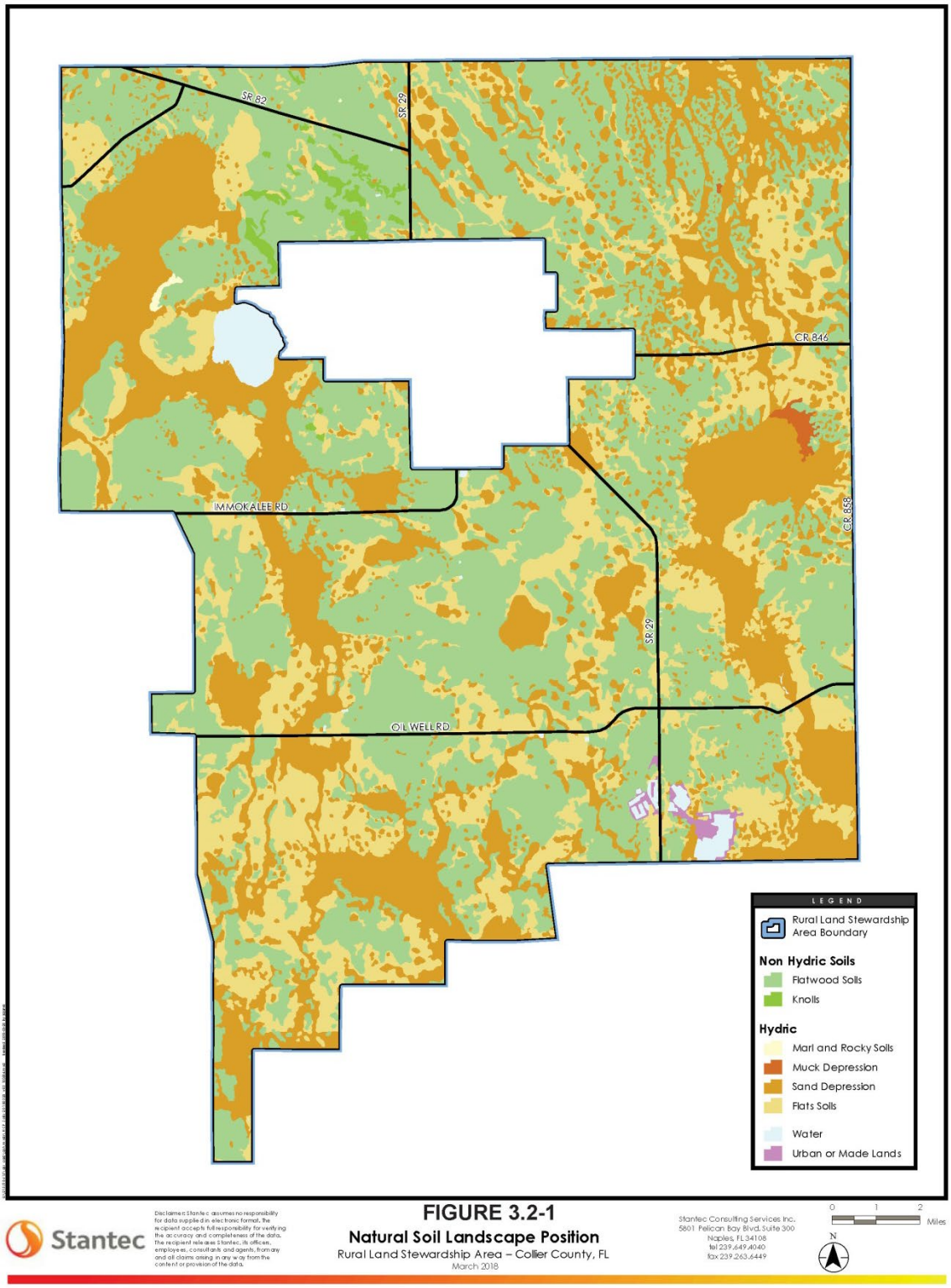



**Figure 3.2-1. Natural Soil Landscape Position**

## 3.3 WATER RESOURCES

This section discusses water resources, which for the purposes of this discussion include surface waters, water quality/quantity, and hydrology. Wetlands are discussed throughout this chapter, specifically in Section 3.1 Environmental Setting and Section 3.8.2 Ecological Communities.

The CorpsUSACE, the South Florida Water Management District (SFWMD), the Florida Department of Environmental Protection (FDEP), and other state and local governments issue a variety of permits to manage and protect Florida's water resources. These resources include wetlands, rivers, streams, lakes, ponds, estuaries, coastal systems, springs, navigable waters, and groundwater, and surface water supplies. Where Corps authorization is needed for site-specific discharges of dredged or fill material, the broad analysis in this dEIS will inform the review process for future Clean Water Act section 404 applications, including by better identifying areas where wetlands and waters are likely to be preserved or impacted by future development. The precise location of future impacts to waters subject to Corps jurisdiction will not be known until the nature and configuration of each project has been determined by the project proponent and the jurisdictional impacts have been permitted by Corps. If the ECMSHCP and ITPs are approved, the 50,175 acre area identified for up to 45,000 acres of Covered Activities will more precisely delineate those portions of the ECMSHCP area where future development-related impacts are likely to occur to wetlands and waters subject to Corps jurisdiction. Correspondingly, the areas identified for preservation will more precisely delineate where wetlands and waters are likely to be preserved, including where connected features can serve as important flowways or linked wetland communities.

Authorizations may be needed for activities including construction or abandonment of wells and systems, large volume water usage, development or new construction, stormwater management and wastewater discharges, and activities in, on, or near wetlands and other water resources. Potential impact to water resources will be addressed during the environmental permitting process.

### 3.3.1 Surface Water

As indicated in Section 3.1.5, the majority of the ECMSHCP area is located within the southern limit of the "Southwestern Florida Flatwoods" Level IV ecoregion, specifically within the Immokalee Rise physiographic division, a local topographic high between the Caloosahatchee River valley and Big Cypress, with extensive uplands, large slough (flowway) wetland systems, and depressional wetlands. South of Oil Well Road, the southern portion of the ECMSHCP area comprises a lower elevation landscape, falling within the "Big Cypress" Level IV ecoregion, part of the greater "Southern Florida Coastal Plain" ecoregion. The low-relief landscape of the ECMSHCP area provides a disjointed drainage pattern without continuous stream or river channel networks. Instead, surface water moves as a broad shallow sheet (sheetflow) across relatively flat terrain or flows across the landscape in shallow depressional flowways (sloughs), marshes, and swamps. Watershed boundaries can be ill defined, with general areas draining to one or more different directions and outfalls at different flood stages (CDM 2002, Atkins 2011).

Major natural surface-water features of the ECMSHCP area are Lake Trafford, Corkscrew Marsh, the Camp Keais Strand flowway system, and the Okaloacoochee Slough flowway system (Atkins 2011). Although ECPO property ownership includes portions of the Lake Trafford shoreline, the lake itself is not included within the ECMSHCP area. Surface water from the Corkscrew Marsh system flows primarily from the northwestern portion of the ECMSHCP area toward the southwest through the Cocohatchee Basin drainage network. The Camp Keais Strand flowway extends southward from Lake Trafford toward the FPNWR, connecting with other large wetland systems (Stumpy Strand, Fakahatchee Strand) at the southern end of the ECMSHCP area, and discharges to the south via the Merritt Canal (HydroGeoLogic et al. 2006, Atkins 2011). The Okaloacoochee Slough flowway extends southward from the Okaloacoochee Slough State Forest in the northeastern corner of the ECMSHCP area, flowing southward beyond the southern boundary of the ECMSHCP area toward the FPNWR.

Approximately 50 percent of the ECMSHCP area is involved in active agricultural operations. Extensive ditching networks in these upland areas provide drainage for agricultural operations, controlling field water levels and discharges into water retention areas, prior to discharge into the flowways. Agricultural

stormwater is extensively regulated and managed by the SFWMD through permits and best management practices (Atkins 2011).

The Collier County Watershed Management Plan provides a comprehensive evaluation of surface water quality conditions in and around the ECMSHCP area. The study area includes portions of four watersheds occurring within the ECMSHCP area (Okaloacoochee/State Road (SR) 29, Cocohatchee-Corkscrew, Fakahatchee, and Faka Union watersheds), which are divided into localized water body identification (WBID) basins for evaluating water quality against state limits. In-stream water quality conditions were evaluated in the context of the FDEP Total Maximum Daily Load impairment criteria, and were based upon FDEP data and previous published reports. Overall, the data analyses indicated that in-stream surface water quality was within FDEP limits for total nitrogen, total phosphorus, chlorophyll-*a*, and total suspended solids concentrations across the ECMSHCP area. The ECMSHCP area contains portions of nine WBID basins. A total of six water quality impairments were designated by FDEP within WBIDs at least partially located within the ECMSHCP area (Atkins 2011).

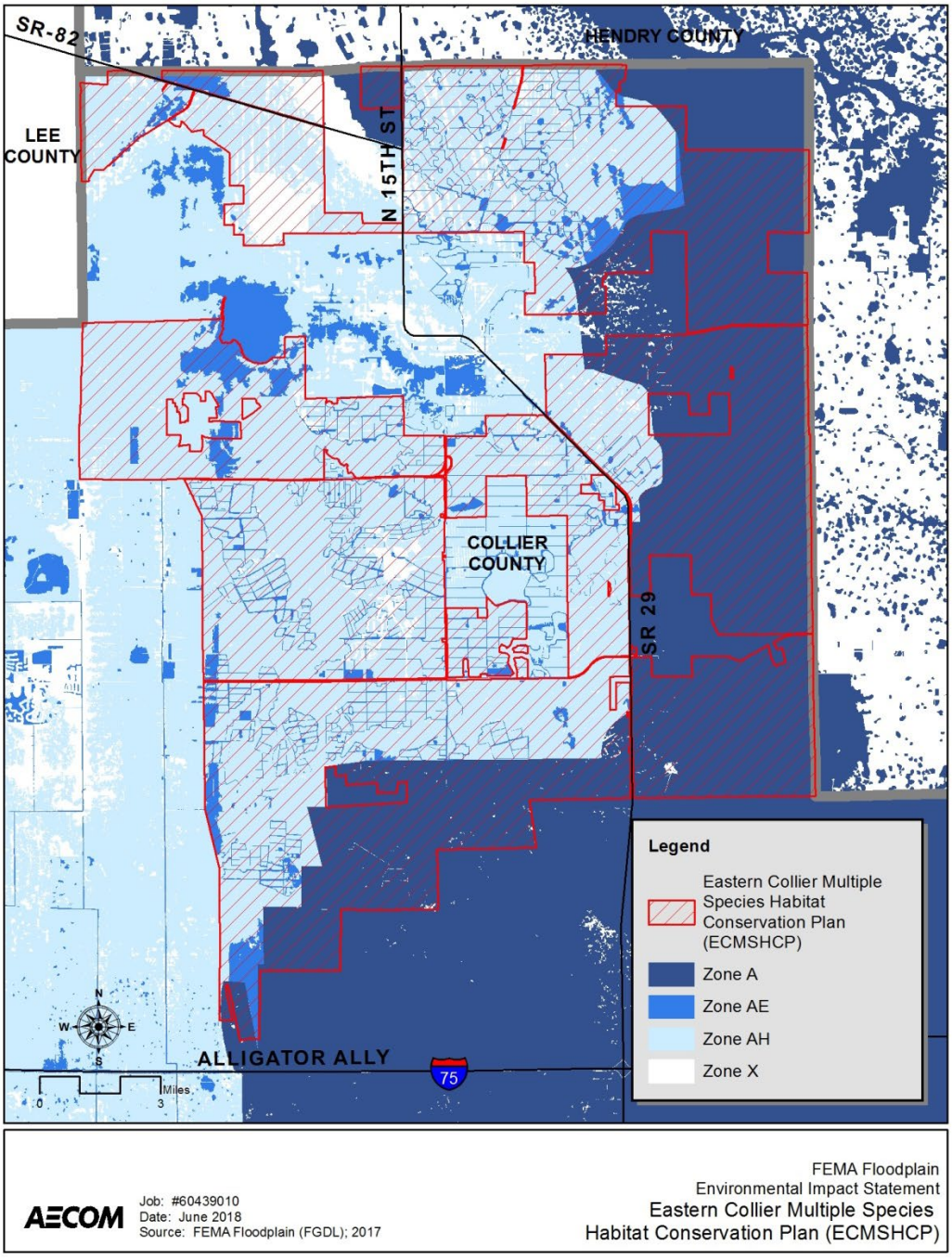
### 3.3.2 Floodplains

The Federal Emergency Management Agency (FEMA) conducts Flood Insurance Studies (FIS) in communities across the United States participating in the National Flood Insurance Program. The existing FIS for Collier County (FIS No. 12021CV000B) had an initial countywide effective date of November 17, 2005, and was updated May 16, 2012. The FIS and associated Digital Flood Insurance Rate Map (DFIRM) maps provide information to determine areas of inundation and flood elevations resulting from the following magnitude flood events: 10 percent annual chance (10-year); 2 percent annual chance (50-year); 1 percent annual chance (100-year); and 0.2 percent annual chance (500-year). The FIS and DFIRM maps categorize the risk at a particular location in terms of flood zones (FEMA 2012). The definitions of the FEMA flood zones defined within the ECMSHCP area are as follows:

- Zone A: This refers to areas affected by the 1 percent annual chance (100-year) flood, also termed the base flood. No base flood elevations (BFEs) have been determined for areas within Zone A.
- Zone AE: These are areas affected by the 1 percent annual chance flood that were determined by detailed analyses, and have BFEs established. Zone AE will generally extend inland to the limit of the 1 percent annual chance Stillwater Flood Level. Where BFEs are not provided, the depth of flooding in Zone AE exceeds 3 feet above land surface elevation.
- Zone AH: These are areas affected by the 1 percent annual chance flood that experience shallow flooding from rainfall with a constant surface water elevation (in areas of ponding) and flood depths of less than 3 feet.
- Zone X: These are areas that are outside of the 0.2 percent annual chance (500-year) floodplain.

Approximately 30 percent of the ECMSHCP area is located in Flood Zone A (Figure 3.3-1). In the ECMSHCP area, Flood Zone A is generally located east of SR 29 and south of the agricultural fields south of Oil Well Road (CR 858). Portions of the ECMSHCP area located within Flood Zone AE, often depressional areas, are generally concentrated along the western boundary of the ECMSHCP area and on the south shore of Lake Trafford north of Immokalee Road (CR 846). Flood Zone X areas are confined to a very small portion of the ECMSHCP area, located east of Corkscrew Swamp, north of Lake Trafford, and within the town center of Ave Maria. The remainder of the ECMSHCP area is located within Flood Zone AH; base flood depths will be less than 3 feet above land surface.

Collier County officials comprising the Floodplain Management Planning Committee authorized the development and adoption of a Floodplain Management Plan in March 2015 to reduce and eliminate risk to people and property from flood hazards (AMEC Foster Wheeler 2015).




Source: Flood Emergency Management Agency (FEMA) 2012.

**Figure 3.3-1. Existing Federal Emergency Management Agency Flood Zones within East Collier Multiple Species Habitat Conservation Plan Area**

## 3.4 AIR QUALITY

### 3.4.1 Scope of Analysis

This section briefly describes existing air quality in the vicinity of the ECMSHCP area in Collier County and its five neighboring counties (Hendry, Monroe, Lee, Broward, and Miami-Dade) where the Proposed Action would take place.

### 3.4.2 Existing Air Quality

Ambient air quality is determined by the type and amount (concentration) of pollutants emitted into the atmosphere, the size and topography of the air basin in question, and the prevailing meteorological conditions in that air basin. Through its passage of the Clean Air Act of 1970 (CAA) and its amendments, Congress has mandated the protection and enhancement of our nation's air quality. The USEPA has established the National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants to protect the public health and welfare: sulfur dioxide ($SO_2$), ozone ($O_3$), nitrogen dioxide ($NO_2$), particulate matter whose particles are less than or equal to 10 micrometers ($PM_{10}$), particulate matter whose particles are less than or equal to 2.5 micrometers ($PM_{2.5}$), carbon monoxide (CO), and lead (Pb).

Collier County monitors for two criteria pollutants: Ozone ($O_3$) and Particle Pollution ($PM_{2.5}$). Adjacent counties monitor for other criteria pollutants as shown in Table 3.4-1, per Florida's Air Monitoring Network Plan (FDEP 2018). Current standards and 2017 pollutant concentrations for counties in the vicinity of the ECMSHCP area that have air monitors are listed in Table 3.4-1 (USEPA 2017a). Areas in compliance with the NAAQS are designated "attainment" areas. Areas in violation of the NAAQS are designated as "nonattainment" areas, and new sources being located in or near these areas may be subject to more stringent air permitting requirements. Nonattainment areas are usually defined by county. National standards, other than annual standards, are not to be exceeded more than once per year (except where noted). Areas that cannot be classified on the basis of available information for a particular pollutant are designated as "unclassifiable" and are treated as attainment areas unless proven otherwise.

Current NAAQS standards and the pollutant concentration values for the proposed ECMSHCP area and neighboring counties are listed in Table 3.4-1. The ECMSHCP area and the neighboring counties are in compliance with applicable NAAQS (USEPA 2017b). Aside from Ozone (the 8-hour $O_3$ Standard concentration level is 0.06 parts per minute [ppm] as compared to the 0.07 ppm standard), the monitored pollutant concentrations are well below the standards.

**Table 3.4-1. National Ambient Air Quality Standards and Design Values**

| Pollutant | Averaging Time | Level | Form | 2017 Pollutant Concentration | | | |
|---|---|---|---|---|---|---|---|
| | | | | Collier | Lee | Broward | Miami-Dade |
| Carbon Monoxide (CO) | 8-hour | 9 ppm | Not to be exceeded more than once per year | -- | -- | 1.6 | 1.1 |
| | 1-hour | 35 ppm | | -- | -- | 2.5 | 1.6 |
| Lead (Pb) [1] | Rolling 3 month average | 0.15 µg/m$^3$ | Not to be exceeded | -- | -- | -- | -- |
| Nitrogen Dioxide ($NO_2$) | 1-hour | 100 ppb | 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years | -- | -- | 44.0 | -- |
| | Annual | 53 ppb[2] | Annual mean | -- | -- | 15.0 | 12.0 |
| Ozone ($O_3$) | 8-hour | 0.070 ppm[3] | Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years | 0.062 | 0.065 | 0.067 | 0.067 |
| Particulate Matter (PM) | $PM_{2.5}$ Annual (primary) | 12 µg/m$^3$ | Annual mean, averaged over 3 years | -- | | 9.8 | |
| | $PM_{2.5}$ Annual (secondary) | 15 µg/m$^3$ | Annual mean, averaged over 3 years | | | | |
| | $PM_{2.5}$ 24-hour | 35 µg/m$^3$ | 98th percentile, averaged over 3 years | -- | | 24.0 | 23.0 |
| | $PM_{10}$ 24-hour | 150 µg/m$^3$ | Not to be exceeded more than once per year on average over 3 years | No exceedances | | | |

**Table 3.4-1. National Ambient Air Quality Standards and Design Values**

| Pollutant | Averaging Time | Level | Form | 2017 Pollutant Concentration | | | |
|---|---|---|---|---|---|---|---|
| | | | | Collier | Lee | Broward | Miami-Dade |
| Sulfur Dioxide ($SO_2$) | 1-hour | 75 ppb[4] | 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years | -- | -- | 1.0 | -- |
| | 3-hour | 0.5 ppm | Not to be exceeded more than once per year | No exceedances | | | |

ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per square meter
Sources: U.S. Environmental Protection Agency (USEPA) 2017c, USEPA 2017d, USEPA 2017e, USEPA 2017f.
Notes:
[1] In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.
[2] The level of the annual $NO_2$ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
[3] Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) $O_3$ standards additionally remain in effect in some areas. Revocation of the previous (2008) $O_3$ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
[4] The previous $SO_2$ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous $SO_2$ standards or is not meeting the requirements of a State Implementation Plan call under the previous $SO_2$ standards (40 Code of Federal Regulations 50.4(3)).

Collier County is part of the Naples-Immokalee-Marco Island, FL Metropolitan Statistical Area (USCB 2013). The CSA meets applicable federal and state air quality standards. Therefore, the Proposed Action would be located in a region with good air quality (USEPA 2017g).

The General Conformity regulations required under Section 176(c) of the CAA (42 USC Section 7506) and codified at 40 CFR Part 93 mandate that a federal agency undertaking, approving, funding, or otherwise supporting any action in areas violating the NAAQS must first prove that undertaking the action does not exacerbate existing violations of the NAAQS, cause new violations, or interfere with an established plan to improve or maintain air quality. The ECMSHCP area and surrounding areas are in compliance with all NAAQS; therefore, the General Conformity regulations of the CAA do not apply to the proposed project.

Fire is a natural occurrence within and around the ECMSHCP area, and many native vegetation communities are adapted to fire. In addition, prescribed fire is included in the covered activities for the ECMSHCP because it will be used for land management. Smoke and ash from wildfires, agricultural burns and prescribed fires temporarily affect air quality in the ECMSHCP area.

## 3.5 CULTURAL RESOURCES

For the purposes of cultural resources consultation, the Area of Potential Effect (APE) (defined per Section 106 of the NHPA) is defined as the ECMSHCP area. As ECPO members prepare individual project proposals consistent with the ECMSHCP, they will consult with the Florida State Historic Preservation Officer (SHPO) in accordance with state requirements. Conservation of any identified cultural resources that might be affected by an individual project would be implemented in accordance with state requirements.

### 3.5.1 Cultural Resource Setting

According to Floridahistory.org, Paleo-Indians inhabited Florida from about 12,000 years before Christ (BC) to about 7,500 years BC They were nomadic hunters that followed game animals. From 7,500 BC to 1,500 years anno Domini (AD) Native Americans became better at gathering food and tended to remain in an area for a longer period of time. The relied on bays and streams for fishing in the winter. They also developed pottery and farming, and participated in commerce with other Indian tribes outside

Florida. The Calusa, who dominated southwest Florida, were known to be good hunters and fishermen, and were also known for their sailing ability. As Europeans began to settle Florida in the 16th century, they relied on the same resources. Therefore, the most likely locations for cultural and historic resources are near waterways that provide fish and other aquatic animals for food, are frequented by terrestrial wildlife that can be hunted, and that can be used to travel to other locations. Because some Native Americans created large piles of discarded shells, these "hills" in a mostly low-elevation landscape can also indicate important areas.

### 3.5.2 Previous Surveys

A cultural resources analysis was conducted to identify the presence of previously recorded archaeological sites and historic resources within the ECMSHCP area that are listed in or eligible for listing in the National Register of Historic Places (NRHP) according to the criteria set forth in 36 CFR Section 60.4, and resources with confirmed or potential human remains. The methods used included a review of the Florida Master Site File (FMSF) GIS database, electronic copies of unpublished manuscripts, previous surveys that included portions of the ECMSHCP area, and FMSF resource forms. The results of this analysis are summarized in this section.

There have been 21 cultural resource studies conducted that have intersected with some portion of the APE (Figure 3.5-1). The majority of these (n=17) have been Cultural Resource Assessment Surveys (CRAS). The remainder of the surveys included one historical/architectural survey of Collier County as a whole, one reconnaissance review for a proposed cellular tower, one radar survey near Lake Trafford for a critical restoration project, and one survey that focused on a littoral area at the same lake. Table 3.5-1 provides a listing of these surveys, which were conducted between 1986 and 2017. The county-wide survey, as well as the earlier survey, may not meet the current state or federal standards for a cultural resource assessment survey.

**Table 3.5-1. Previously Conducted Surveys that Intersect the Project Area of Potential Effect**

| Survey # | Title | Author(s) | Date |
|---|---|---|---|
| 1108 | Historical/architectural survey of Collier County, Florida | Florida Preservation Services | 1986 |
| 8141 | An Archaeological and Historical Survey of the Proposed DT Immokalee Tower Location in Collier County, Florida | Batategas, Juliet T. | 2001 |
| 9082 | Cultural Resource Reconnaissance Survey/ Section 106 Review Proposed Thorpe Road Cellular Tower (#10030116D) Thorpe Road, La Belle, Hendry County, Florida | Archaeological Consultants, Inc. | 2003 |
| 9879 | Cultural Resource Assessment Survey, Ave Maria Preliminary Development Agreement (PDA) Property, Collier County, Florida | Archaeological Consultants, Inc. | 2004 |
| 10354 | A Cultural Resource Assessment Survey, Ave Maria Development of Regional Impact (DRI) Property; Addendum to Cultural Resources Assessment Survey (CRAS) Ave Maria PDA Property, Collier County, Florida | Archaeological Consultants, Inc. | 2004 |
| 11014 | Cultural Resource Assessment Survey of the FPL Collier-Orange River # 3 230 KV Transmission Line: Segments A, C, and F Collier and Lee Counties | Janus Research | 2005 |
| 11715 | Cultural Resource Assessment Survey of the FPL Collier-Orange River # 3, 230 KV Transmission Line: Segment D, Collier County | Janus Research | 2005 |
| 12898 | Cultural Resource Assessment Survey of the Serenoa DRI Project Area, Collier County | Janus Research | 2006 |
| 13684 | Cultural Resource Assessment Survey Hogan Island Quarry, Collier County, Florida | Archaeological Consultants, Inc. | 2006 |
| 14027 | An Addendum to the Cultural Resource Predictive Model Collier Enterprises, LTD. The Tradeport DRI, Collier County, Florida | Archaeological Consultants, Inc. | 2007 |

**Table 3.5-1. Previously Conducted Surveys that Intersect the Project Area of Potential Effect**

| Survey # | Title | Author(s) | Date |
|---|---|---|---|
| 14434 | An Addendum to the Cultural Resource Predictive Model Collier Enterprises, LTD. Big Cypress Stewardship District, Collier County, Florida | Archaeological Consultants, Inc. | 2007 |
| 14587 | Lake Trafford Critical Restoration Project - Aquascan Radar Survey Report | Art Engineering, LLC | 2004 |
| 14907 | Cultural Resource Assessment Survey of S R 82 from Lee Boulevard to SR 29 Lee, Hendry and Collier Counties | Janus Research | 2007 |
| 15050 | Littoral Survey of Lake Trafford, Collier County | Hoffman, Kathleen S. | 2008 |
| 16431 | A Phase I Cultural Resource Assessment of the Alico Parcel, Collier County, Florida | Beriault, John G., Matthew Betz, and Robert S. Carr | 2008 |
| 16907 | Cultural Resource Assessment Survey Project Development and Environment (PD&E) Study SR 29 from North of SR 82 to south of CR 80A Collier and Hendry Counties, Florida | Archaeological Consultants, Inc. | 2009 |
| 20872 | Cultural Resource Assessment Survey Lee County Electric Cooperative (LCEC) SR 82 and SR 29 Distribution Line Replacement, Collier County, Florida | Archaeological Consultants, Inc. | 2014 |
| 21923 | Cultural Resource Assessment Survey Technical Memorandum Addendum Preferred Stormwater Treatment Areas, SR 82 from Gator Slough Lane to SR 29, Collier County, Florida. Financial Project ID No.: 430849-1-52-01 | Archaeological Consultants, Inc. | 2015 |
| 22651 | Treatment of Cultural Resources Related to 3D Seismic Survey for Hendry Energy Services, Inc. in Hendry and Collier Counties, Florida | Miller, James J. and L. Ross Morrell | 2014 |
| 23218 | Cultural Resource Assessment Survey Tocala-Sunniland 3D Seismic Survey Project Collier and Hendry Counties, Florida | Archaeological Consultants, Inc. | 2016 |
| 24480 | Cultural Resource Assessment Survey Technical Memorandum, Preferred Ponds, Drainage Easements, and Right-of-Way, SR 82 from the Hendry County Line to Gator Slough Lane, Collier County, Florida, Financial Project ID No.: 430848-1-52-01 | Archaeological Consultants, Inc. | 2017 |

### 3.5.3 Previously Recorded Archaeological Sites

A search of the FMSF data identified 32 previously recorded archaeological sites within the ECMSHCP area, as shown in Table 3.5-2 and on Figure 3.5-2. These include 10 sites associated with the Seminole Wars that took place between 1817 and 1858, 18 precontact middens, three precontact mounds, and one collection of precontact canoes associated with Lake Trafford.

The 10 sites from the Seminole Wars period include 8 forts: Fort Simon Drum (8CR78), Fort Doane (8CR660), Fort Keais (8CR669), Fort Loomis (8CR1075), Fort Keais 2nd and 3rd Seminole War (8CR1079), Fort Kneas (8CR1080), Fort Doane 3rd Seminole War (8CR1078), and Fort Doane 2nd Seminole War (8CR1081), in addition to one campsite (Camp Near Depot No. 1 [8CR1076], and one supply depot (Depot No. 1 [8CR1077]). With the exception of 8CR78 (Fort Simon Drum), the locations of the sites associated with the Seminole Wars are uncertain and are based primarily on historical records. The exact locations of these sites have not been identified through archaeological investigations and their NRHP eligibility has not been evaluated.

In the 1940s, a survey marker was placed at the location of 8CR78 (Fort Simon Drum) and the original FMSF form notes the presence of a precontact component consisting of a black dirt midden. Limited archaeological investigations conducted at the site in 2016 identified subsurface evidence suggestive of walls, as well as 19th century artifacts. This site was determined to be NRHP eligible by the SHPO in 2016.

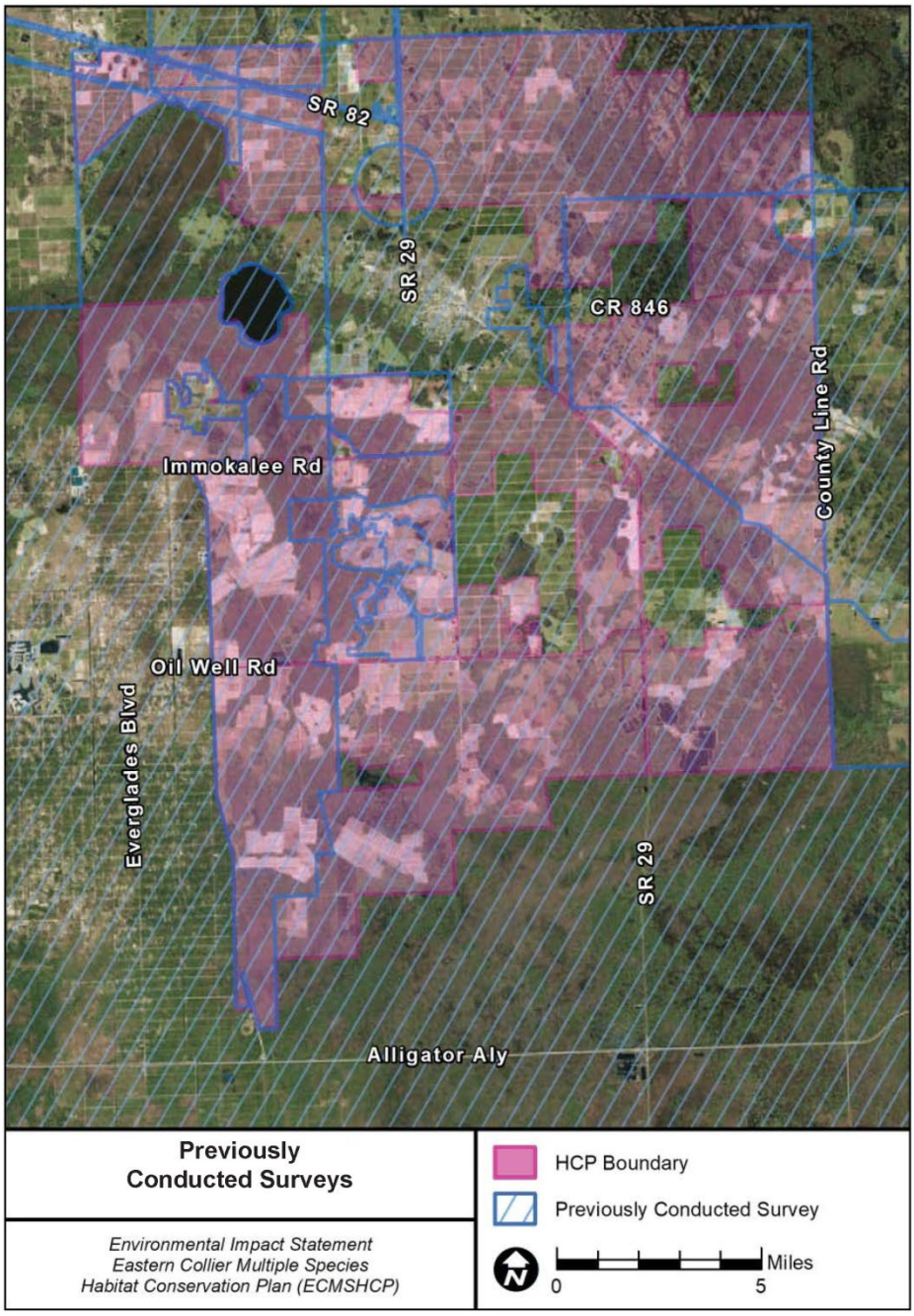



**Figure 3.5-1. Previously Conducted Surveys**

The majority of the 18 precontact midden sites (n=15) documented in the vicinity are small campsites recorded during a recent survey (ACI 2016). This group of sites (8CR1438-8CR1442 and 8CR1444-8CR1453) represents three general periods of occupation: Prehistoric-aceramic, Glades, and Late Archaic; it should be noted, however, that at least some of the aceramic sites may represent Late Archaic occupation (Janus 2008). Many of these campsites, primarily the ones containing only faunal bone, are very small (i.e., 25 meters in diameter or less). Of this group of 15 campsite middens, 6 have been determined NRHP ineligible, while the remaining 9 require additional testing to evaluate their eligibility status (Table 3.5-2).

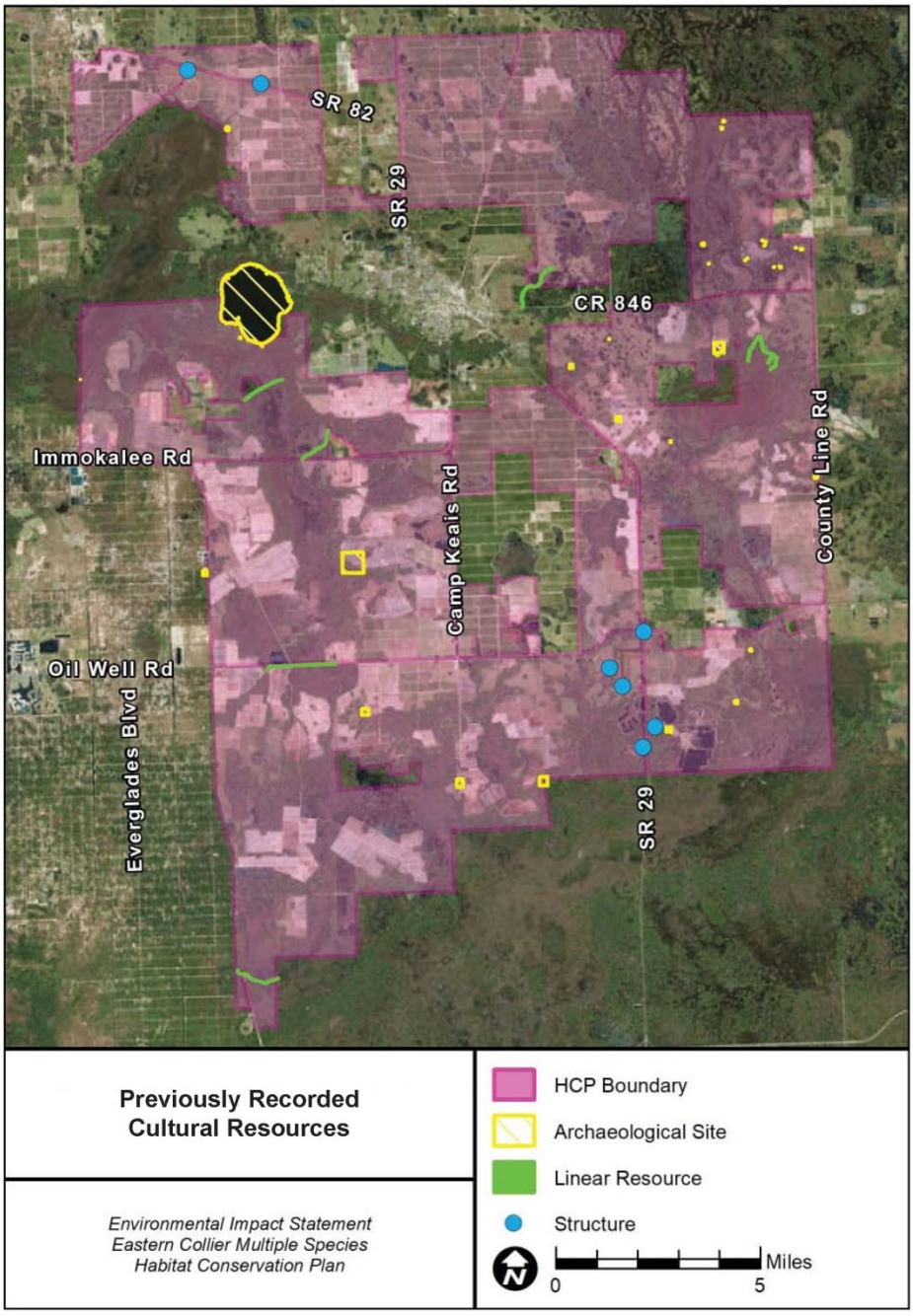



**Figure 3.5-2. Previously Recorded Cultural Resources**

**Table 3.5-2. Previously Recorded Archaeological Sites within the East Collier Multiple Species Habitat Conservation Plan Area**

| Florida Master Site File (FMSF) # | Site Name | Site Type | National Register of Historic Places Evaluation* |
|---|---|---|---|
| 8CR78 | Fort Simon Drum | Seminole Wars period fort and pre-Columbian midden | Eligible |
| 8CR86 | Mound Crossing | Precontact sand mound | Not Evaluated |
| 8CR563 | Carlson's Caprock | Precontact midden and 20th century campsite | Not Evaluated |
| 8CR660 | Fort Doane | Seminole Wars period fort | Not Evaluated |
| 8CR669 | Fort Keais | Seminole Wars period fort | Not Evaluated |
| 8CR859 | Scofield Mound 1 | Precontact campsite and mound | Not Evaluated |
| 8CR860 | Scofield Mound 2 | Precontact mound | Not Evaluated |
| 8CR1065 | Lake Trafford Canoes | Precontact canoes | Not Evaluated |
| 8CR1066 | Lake Trafford | Precontact campsite and midden | Not Evaluated |
| 8CR1073 | Handfern Hammock | Precontact campsite and procurement site | Ineligible |
| 8CR1075 | Fort Loomis | Seminole Wars period fort | Not Evaluated |
| 8CR1076 | Camp Near Depot No. 1 | Seminole Wars period campsite | Not Evaluated |
| 8CR1077 | Depot No. 1 | Seminole Wars period depot | Not Evaluated |
| 8CR1078 | Fort Doane 3rd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1079 | Fort Keais 2nd and 3rd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1080 | Fort Kneas | Seminole Wars period fort | Not Evaluated |
| 8CR1081 | Fort Doane 2nd Seminole War | Seminole Wars period fort | Not Evaluated |
| 8CR1438 | Corridor Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1439 | Walsh Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1440 | Fenno Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1441 | Okaloacoochee Slough Hammock 1 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1442 | Walker Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1444 | Nash Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1445 | Gumbo Limbo Island Hammock 1 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1446 | Gumbo Limbo Island Hammock 2 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1447 | Gumbo Limbo Island Hammock 3 | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1448 | Okaloacoochie Point | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1449 | Oak Point Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1450 | Ho Ho Hammock | Precontact campsite, extractive site, and midden | Insufficient Information |
| 8CR1451 | Gladys Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1452 | Godmother Hammock | Precontact campsite, extractive site, and midden | Ineligible |
| 8CR1453 | Contested Convention Hammock | Precontact campsite, extractive site, and midden | Ineligible |

* As recorded in the FMSF; may require re-evaluation

The remaining precontact midden sites include Handfern Hammock (CR1073), the Lake Trafford site (8CR1066), and Carlson's Caprock (8CR563). Site 8CR1073 consists of a single freshwater snail shell and one sand-tempered plain sherd located on a slightly elevated oak hammock on the edge of Corkscrew Swamp. Although recorded as locally significant, the site was determined to be NRHP ineligible in 2009 by the SHPO. The Lake Trafford site (8CR1066) is a precontact campsite midden that has not been evaluated. Site 8CR563 was recorded as a multi-component site consisting of a precontact midden with faunal bones, shell, and a historic campsite dating between 1920 and 1950. The site was identified on the ground surface during a pedestrian survey, and its NRHP eligibility has not been evaluated.

The three precontact mounds include Scofield Mound 1 (8CR859), Scofield Mound 2 (8CR860), and Mound Crossing (8CR86). Both 8CR859 and 8CR860 were identified based on an informant report and brief site visits. No investigations have been conducted at these mounds, which may date from approximately 1000 BC to AD 750. Site 8CR86 is recorded as a sand mound with an unspecified precontact period origin; it was recorded based on a verbal description by an informant and its exact location is unknown. The NRHP eligibility of these three mound sites has not been evaluated.

The site associated with Lake Trafford includes a collection of canoes and canoe fragments recorded as 8CR1065 (Lake Trafford Canoes). They are located within and along the edges of the lake. Several pieces of canoe, including segments of the hull, as well as bow and stern sections of a vessel, are recorded within the ECMSHCP area, and their approximate locations are shown on Figure 3.5-2. Radiocarbon dates indicate that the canoes and canoe remnants date from A.D. 600 to AD 1200. The NRHP eligibility of this collection of canoes has not been evaluated.

### 3.5.4 Previously Recorded Historic Resources

The FMSF review identified 13 previously recorded historic resources, including 6 linear resources (8CR965–8CR969 and 8CR1406) and 7 historic structures (8CR668, 8CR670–8CR673, and 8CR1494-8CR1495). These resources are listed in Table 3.5-3 and shown on Figure 3.5-2. There are no resources currently listed in the NRHP.

The six linear resources consist of segments of three historic trams (Collier Enterprise Tram [8CR965], Big Corkscrew Island Tram [8CR968], and Tram Lines [8CR1406]), in addition to portions of three historic trails (Stumpy Strand Island [8CR966], Old Immokalee Naples Road [8CR967], and Tradeport Trail [8CR969]). All that remains of the trams are the grades and one remnant of a wooden bridge associated with the Collier Enterprise Tram (8CR965). All of the trams and trails were constructed in the 1950s. The SHPO noted that there is insufficient information to determine the NRHP eligibility for most of these linear resource segments, although 8CR1406 has been determined NRHP ineligible.

The seven previously recorded historic structures include cattle pens (8CR668) constructed circa 1945, one capped oil well (8CR670), and five 20th century Frame Vernacular buildings (8CR671-8CR673 and 8CR1494-8CR1495) with nonspecific dates of construction (Table 3.5-3). Two of the Frame Vernacular structures are associated with the Humble Oil Company, who established the first oil field (Sunniland) in Florida in the 1940s. These Humble Oil Company resources include one Frame Vernacular commissary (8CR672) and one Frame Vernacular office building (8CR673). A second commissary (8CR671) was associated with the Collier Corporation. The SHPO has not evaluated the NRHP eligibility of any of these resources. The remaining Frame Vernacular structures (8CR1494 and 8CR1495) date to the mid-1960s or later and have been judged NRHP ineligible.

**Table 3.5-3. Previously Recorded Historic Resources within the East Collier Multiple Species Habitat Conservation Plan Area**

| Florida Master Site File (FMSF) # | Name / Address | Resource Type/Style | Year Built | SHPO National Register of Historic Places Evaluation* |
|---|---|---|---|---|
| 8CR668 | Cowpens | Cattle pens | Unknown | Not Evaluated |
| 8CR670 | Sunniland Field #12 | Capped oil well | c1942 | Not Evaluated |

**Table 3.5-3. Previously Recorded Historic Resources within the East Collier Multiple Species Habitat Conservation Plan Area**

| Florida Master Site File (FMSF) # | Name / Address | Resource Type/Style | Year Built | SHPO National Register of Historic Places Evaluation* |
|---|---|---|---|---|
| 8CR671 | Collier Corporation Commissary | Frame Vernacular building | Unknown | Not Evaluated |
| 8CR672 | Sunniland Commissary | Frame Vernacular building | c1943 or earlier | Not Evaluated |
| 8CR673 | Sunniland Office | Frame Vernacular building | c1943 | Not Evaluated |
| 8CR965 | Collier Enterprise Tram | Linear resource segment; Historic tram trade segment and wooden bridge | Post-1950 | Insufficient Information |
| 8CR966 | Stumpy Strand Island | Linear resource segment | Post-1950 | Insufficient Information |
| 8CR967 | Old Immokalee Naples Road | Linear resource segment | Post-1950 | Insufficient Information |
| 8CR968 | Big Corkscrew Island Tram | Linear resource segment | Post-1950s | Insufficient Information |
| 8CR969 | Tradeport Trail | Linear resource segment | 1940s–1950s | Not evaluated in APE; adjacent segment is ineligible |
| 8CR1406 | Tram Lines | Linear resource segment | Post-1950 | Ineligible |
| 8CR1494 | 5086 Corkscrew Road | Frame Vernacular building | 1964 or later | Ineligible |
| 8CR1495 | 6081 SR 82 | Frame Vernacular building | 1965 or later | Ineligible |

* As recorded in the FMSF; may require re-evaluation

## 3.6 VISUAL RESOURCES

Active agriculture (including cultivated crops, citrus, sod, pastures, and specialty crops) comprises approximately 50 percent of the HCP Area. Native wetlands account for approximately 38 percent of the total HCP Area, and are split roughly evenly between forested and non-forested (mainly herbaceous) wetland systems. Native uplands comprise 9 percent of the HCP Area, with forested uplands comprising over 88 percent of native uplands. Over 92 percent of the total native vegetation acreage within the HCP Area occurs within land designations slated for protection. Open water, consisting of major canals, and small lakes/ponds total 1,245 acres, or 1 percent of the HCP Area (Lake Trafford is not included within the HCP Area). Approximately 1 percent of the HCP Area consists of existing development, primarily the Town of Ave Maria.

## 3.7 SOCIOECONOMIC RESOURCES AND ENVIRONMENTAL JUSTICE

Socioeconomic resources are those that combine economic resources and social resources. Some think of these resources in terms of quality of life. A number of factors are incorporated into quality of life, including: (1) availability of good-paying jobs; (2) access to critical services, such as education and health care; (3) strong communities; and (4) a healthy natural environment (USFWS and Montana Department of Natural Resources 2010).

Environmental justice is the unbiased treatment and meaningful participation of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, programs, and policies (USFWS and Montana Department of Natural Resources 2010).

The HCP area only includes private lands whose landowners want to develop their land in a way that meets their economic goals while streamlining their regulatory requirements and assisting with the conservation of numerous species. Since this HCP does not include public lands or change regulations

for outside entities, this dEIS will not evaluate the alternatives in relation to socioeconomics or environmental justice.

## 3.8 TRANSPORTATION

This section describes existing and planned roadway networks and summarizes existing transportation conditions present within the Transportation Analysis Area (TAA).

### 3.8.1 Scope of Analysis

The existing roadway network within the ECMSHCP area is composed of state highways, county roads, and local roads. Interstate 75 passes just to the south of the ECMSHCP area, which is linked to other areas of Collier County and the region principally by SR 29, SR 82, CR 846 (Immokalee Road), CR 858 (Oil Well Road), and CR 850 (Corkscrew Road). The TAA discussed in this section focuses on the state and county regulated roadways within the ECMSHCP area described in the ECMSHCP. Figure 1, Study Area Roadways, and Table 1, Roadway Facility Inventory, presented in Appendix F, highlight the roadway network that is the focus of analysis.

To evaluate existing conditions and to provide a basis for a future traffic analysis, traffic data were collected for major roadway networks in the TAA. This data collection effort included a facilities inventory, review of FDOT traffic counts, roadway Level of Service (LOS) assessment, and the identification of current planned and programmed improvements. Appendix F presents several tables and figures that describe the existing and planned roadway network present within the TAA.

### 3.8.2 Existing Transportation Conditions

Existing (2017) Annual Average Daily Traffic (AADT) volumes and daily truck percentages for the roadways monitored by FDOT within the TAA are shown in tables included in Appendix F. Daily traffic volumes on roadways within the TAA range from 500 to 17,800 vehicles per day (vpd) and truck percentages from 4.1 to 52.7 percent. Table 2 in Appendix F presents measures of roadway performance including Standard K Factor, Directional Distribution, and Truck Factor. Standard K Factor represents the ratio of peak hour to annual average daily traffic, and provides an assessment of roadway usage during the peak period; the Directional Distribution (D) metric represents the percentage of the total two-way design hour traffic traveling in the peak direction, and provides an assessment of trip flow; and Truck Factor (Tf) which represents the percentage of truck traffic occurring during the peak hours.

### 3.8.3 Existing Streets and Highways Capacity Analysis

Quality of Service is a traveler-based perception of how well a transportation service or facility operates. LOS is a quantitative stratification of quality of service. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Within the exception of segments of SR 29 and SR 82, all major roadways within the TAA meet LOS targets and operate at LOS A, B, C, or D. Congestion was measured using the ratio of the traffic volume to the capacity of the roadway segment, referred to as the Volume/Capacity (V/C) ratio. A V/C ratio greater than 1.0 is considered "over capacity". Table 3 in Appendix F provides a summary of the existing characteristics compiled for streets and highways in the TAA where it shows that again all roadways with the exception of short segments on SR 29 and SR 82 within the TAA currently operate under capacity.

### 3.8.4 Traffic Demand and Levels of Service

The information of the assessments of highways based on the travel demand forecast generated by the land uses defined for the year 2040 were considered from the Collier County's 2040 Long Range Transportation Plan (LRTP). The travel demand model is based on the Existing plus Committed (E+C) transportation network. The E+C network is comprised of all existing facilities, plus those that have funding *committed* in the current Transportation Improvement Program (TIP) or other local capital improvement program. The E+C characterizes the transportation network expected to be in place, or nearly so, by the year 2020.

Intersection improvement at SR 82 and CR 580 (Corkscrew Road) has been identified as the committed improvement within the TAA. The travel demand model has assigned future year traffic volumes to the

E+C network. The facilities predicted to experience congestions in 2040 are listed below (Collier County's 2040 LRTP) within the TAA:

- Oil Well Road between Everglades Boulevard and Oil Well Grade Road
- SR 29 north of Immokalee Road
- Immokalee Road south of Carver Street

### 3.8.5 Regional Roadway Improvement Projects

Local and state planning efforts have identified several roadway improvements within the TAA. The County's 2040 LRTP needs plan identifies 22 roadway improvement projects in the 20-year planning horizon. Appendix F includes Table 4 that summarizes proposed roadway improvements and excerpts from the County's LRTP that identify needs based and cost affordable roadway plans. See Tables 5, 6 and Figures 2, 3 in Appendix F for documentation from the Collier County LRTP.

In addition the County's planning documents, the FDOT's tentative work program for FY 2016/17 – FY 2020/21 identifies roadway improvements on SR 29 and SR 82 within the TAA.

FDOT District One is conducting a Project Development and Environment (PD&E) Study for improvements to SR 29 in Collier County. The project limits extend a distance of approximately 17 miles along SR 29 from Oil Well Road northward to SR 82. The proposed roadway improvement consists of increasing capacity on SR 29 by evaluating the widening of the existing two-lane undivided segment of SR 29 to four lanes, as well as the study of an alternative corridor(s) that bypasses downtown Immokalee. The expansion of SR 29 from Oil Well Road to SR 82 is identified as a needs project within the Collier County Metropolitan Planning Organization 2040 LRTP and is consistent with Collier County's adopted Growth Management Plan. FDOT is also conducting a PD&E study to evaluate the proposed widening of 18 miles of SR 29 from SR 82 in Collier County, north to CR 80A in Hendry County (http://www.sr29.com).

FDOT District One has completed SR 82 PD&E study for the widening of approximately 23 miles of SR 82 from Lee Boulevard (CR 884) to SR 29 in Lee, Hendry, and Collier counties. The 3.2 mile section of SR 82 from Gator Slough Lane to SR 29 in Collier County proposed to be widened from a two-lane undivided roadway to an interim four-lane divided roadway while allowing for a six-lane roadway and intersection improvements at SR 82/SR 29 intersection are in design phase (http://www.sr82design.com).

## 3.9 BIOLOGICAL RESOURCES

### 3.9.1 Scope of Analysis

This section describes the existing biological resources of the ECMSHCP area, including ecological communities and the types of land cover, land use, and habitats present within the ECMSHCP area; a general description of common wildlife species likely to occur in ECMSHCP area habitats; and a discussion of wildlife habitat linkages and corridors in the ECMSHCP area.

### 3.9.2 Ecological Communities

All vegetative cover and land use classes within the ECMSHCP area were classified using the FNAI CLC, a partnership between the FWC and FNAI to develop ecologically based statewide land cover from existing sources and expert review of aerial photography. The land cover classes in the ECMSHCP area can be grouped into the following categories: agriculture, other developed, uplands-undeveloped, wetlands-forested, wetlands-marsh, and water (Table 3.9-1). Based on the CLC, upland developed and undeveloped land uses and habitats cover approximately 61 percent of the ECMSHCP area, while wetlands and other surface waters cover approximately 39 percent of the ECMSHCP area. Table 3.1-1 lists the acreage of each habitat type in the Covered Activities Area, the Plan-wide/Preservation Area, the Very Low Density Use Area, and the Base Zoning Area.

**Table 3.9-1: Land Cover/Land Use/Habitat Types within the East Collier Multiple Species Habitat Conservation Plan (ECMSHCP) Area**

| Florida Natural Areas Inventory (FNAI) Cooperative Land Cover (CLC)[1] | Acres | Percentage of Total ECMSHCP area |
|---|---|---|
| **Agriculture** | | |
| Cropland/Pasture | 25,844 | 17.0 |
| Orchards/Groves | 28,131 | 18.5 |
| Vineyard and Nurseries | 40 | 0.03 |
| Other Agriculture | 1 | 0.001 |
| Improved Pasture | 16,250 | 10.7 |
| Exotic Plants | 920 | 0.6 |
| **Subtotal** | **71,185** | **46.9** |
| **Other Developed** | | |
| Transportation | 411 | 0.3 |
| Communication | 3 | 0.002 |
| Utilities | 24 | 0.02 |
| Extractive | 69 | 0.05 |
| Bare Soil/Clear Cut | 7 | 0.005 |
| Low Intensity Urban | 1,228 | 0.8 |
| High Intensity Urban | 346 | 0.2 |
| Rural | 6,257 | 4.1 |
| Cultural - Terrestrial | 7 | 0.005 |
| **Subtotal** | **8,353** | **5.5** |
| **Uplands - Undeveloped** | | |
| Mesic Hammock | 1,722 | 1.1 |
| Scrub | 9 | 0.01 |
| Mesic Flatwoods | 7,424 | 4.9 |
| Scrubby Flatwoods | 29 | 0.02 |
| Palmetto Prairie | 128 | 0.1 |
| Mixed Hardwood-Coniferous | 2,707 | 1.8 |
| Shrub and Brushland | 1,448 | 1.0 |
| **Subtotal** | **13,468** | **8.9** |
| **Wetlands - Forested** | | |
| Freshwater Forested Wetlands | 4,897 | 3.2 |
| Cypress/Tupelo(including Cy/Tu mixed) | 2,011 | 1.3 |
| Cypress | 12,613 | 8.3 |
| Isolated Freshwater Swamp | 4,213 | 2.8 |
| Dome Swamp | 317 | 0.2 |
| Strand Swamp | 1,755 | 1.2 |
| Other Coniferous Wetlands | 24 | 0.02 |
| Wet Flatwoods | 2,637 | 1.7 |
| Other Hardwood Wetlands | 463 | 0.3 |
| Hydric Hammock | 120 | 0.1 |
| **Sub-total** | **29,049** | **19.1** |
| **Wetlands - Marsh** | | |
| Freshwater Non-Forested Wetlands | 114 | 0.1 |
| Prairies and Bogs | 9,400 | 6.2 |
| Marshes | 17,060 | 11.2 |
| Isolated Freshwater Marsh | 1,895 | 1.2 |

**Table 3.9-1: Land Cover/Land Use/Habitat Types within the East Collier Multiple Species Habitat Conservation Plan (ECMSHCP) Area**

| Florida Natural Areas Inventory (FNAI) Cooperative Land Cover (CLC)[1] | Acres | Percentage of Total ECMSHCP area |
|---|---|---|
| **Sub-total** | **28,469** | **18.8** |
| **Water** | | |
| Lacustrine | 58 | 0.04 |
| Natural Lakes and Ponds | 22 | 0.01 |
| Cultural - Lacustrine | 1,050 | 0.7 |
| Cultural - Riverine | 125 | 0.1 |
| **Sub-total** | **1,255** | **0.8** |
| **TOTAL** | **151,779** | **100** |

Notes:
[1] FNAI CLC (CLC is a partnership between the Florida Fish and Wildlife Conservation Commission and FNAI to develop ecologically based statewide land cover from existing sources and expert review of aerial photography). Source: Version 3.2.5 published October 2017.

### 3.9.3 General Wildlife

Wildlife species, other than Covered Species, that occur within the ECMSHCP area include species characteristic of the types of undeveloped habitats present within the ECMSHCP area and elsewhere in southwest Florida, including wetland forests, marshes, and upland forests and prairies, as well as species that have adapted to the use of habitats associated with crop cultivation, orchards, pasture, and other developed land uses. These species are typical of those found in similar habitats of southwest Florida.

Larger mammal species expected to occur commonly within the ECMSHCP area include American black bear (*Ursus americanus*), white-tailed deer (*Odocoileus virginianus*) and feral hog (*Sus scrofa*). Smaller mammals with the potential to occur in the area include the nine-banded armadillo (*Dasypus novemcinctus*), fox squirrel (*Sciurus niger*), river otter (*Lontra canadensis*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), marsh rabbit (*Sylvilagus palustris*), and various mice and rats.

The ECMSHCP area provides suitable habitat for a diversity of bird species, including perching birds such as the northern mockingbird (*Mimus polyglottos*), Carolina wren (*Thryothorus ludovicianus*), cardinal (*Cardinalis cardinalis*), American robin (*Turdus migratorius*), American crow (*Corvus brachyrhynchos*), yellow-rumped warbler (*Dendroica coronata*), and brown thrasher (*Toxostoma rufum*); wading birds such as the green heron (*Butorides virescens*), great egret (*Ardea alba*), and cattle egret (*Bulbulcus ibis*); waterfowl such as the wood duck (*Aix sponsa*); water birds such as the anhinga (*Anhinga anhinga*) and double-crested cormorant (*Phalacrocorax auritus*); raptors such as the turkey vulture (*Cathartes aura*), black vulture (*Coragyps atratus*), red-tailed hawk (*Buteo jamaicensis*), and barred owl (*Strix varia*); and game birds such as the wild turkey (*Meleagris gallopavo*) and bobwhite quail (*Colinus virginianus*).

Reptiles expected to occur in the habitats within the ECMSHCP area include the American alligator (*Alligator mississippiensis*), black racer (*Coluber constrictor*), corn snake (*Pantherophis guttatus*), cottonmouth (*Agkistrodon piscivorus*), Florida box turtle (*Terrepene carolina bauri*), Florida chicken turtle (*Deirochelys reticularia chrysea*), peninsula cooter (*Pseudemys floridana peninsularis*), Florida softshell turtle (*Apalone ferox*), and brown anole (*Anolis sagrei*). Amphibians likely to occur in the area include the common toad (*Bufo terrestris*), pine woods treefrog (*Hyla femoralis*), green treefrog (*Hyla cinerea*), Florida cricket frog (*Acris gryllus dorsalis*), greater siren (*Siren lacertina*), and two-toed amphiuma (*Amphiuma means*).

Fish species that occur in water bodies within the ECMSHCP area are expected to include common native and introduced species such as the black crappie (*Pomoxis nigromaculatus*), bluegill (*Lepomis macrochirus*), redear sunfish (*Lepomis microlophus*), tilapia (*Tilapia* spp.), mosquito fish (*Gambusia holbrooki*), flagfish (*Jordanella floridae*), and various species of catfish.

### 3.9.4 Wildlife Habitat Linkages and Corridors

Habitat fragmentation occurs when areas of habitat used by particular species are separated by development, clearing, or other activities, which prevent or inhibit the movement of individuals between habitats. The maintenance of a network of habitat linkages, or corridors, facilitates the movement of individuals between larger areas of suitable habitat, supports the ability of species to migrate to areas of better habitat, promotes gene flow and genetic diversity in populations, and allows for a more natural process of migration and colonization than is possible when habitat areas are isolated.

The FPNWR and BCNP that border the ECMSHCP area to the south are public conservation lands that support the core population area for the FP. The Okaloacoochee Slough State Forest (OSSF) that borders the ECMSHCP area to the north and east, is heavily utilized by panthers, and serves as a landscape linkage in a panther dispersal corridor leading to the Caloosahatchee River and then northward into central Florida. Adjacent to the ECMSHCP area to the west are the privately owned, 13,000-acre Audubon Corkscrew Swamp Sanctuary, containing the largest breeding colony of threatened wood storks in South Florida, and the publicly owned conservation lands of the CREW. Thus, the ECMSHCP area occupies a strategic location that currently provides important, landscape-scale habitat linkages of high value to the FP and other species. Specifically, these regional linkages connect the BCNP, FPNWR, Fakahatchee Strand Preserve State Park (FSPSP), and Picayune Strand State Forest (PSSF) south of the ECMSHCP area to the CREW, OSSF, Dinner Island Ranch Wildlife Management Area, and Spirit of the Wild Wildlife Management Area to the west, north, and northeast. These linkages also allow the dispersal of panthers from the core population south of the ECMSHCP area to a dispersal zone north of the ECMSHCP area and south of the Caloosahatchee River, facilitating potential panther expansion into areas north of the river.

### 3.9.5 Migratory Birds

Several bird species that occur within the ECMSHCP area are not listed under ESA, but are subject to the MBTA. The Service's *Information for Planning and Consultation* website identifies up to 26 non-listed bird species that may occur within the ECMSHCP area and are subject to MBTA regulations. Many of these species primarily use coastal habitats (e.g., beaches, mangroves) and occur infrequently in the ECMSHCP area. Others, such as the swallow-tailed kite, limpkin, and red-headed woodpecker, occur consistently in the area and could potentially be impacted by ECMSHCP-related activities. While a permit is required under the MBTA only when take is purposeful, the Service encourages landowners to incorporate conservation measures for MBTA species into their projects.

### 3.9.6 Bald Eagles

Although the bald eagle (*Haliaeetus leucocephalus*) was removed from the endangered species list in 2007, it remains protected under federal law by the MBTA and the BGEPA, and under Florida State law (68A-16.002, Florida Administrative Code [F.A.C.]). At least two bald eagle nests are currently documented within the ECMSHCP boundary, and another five eagle nests are documented within a mile of the ECMSHCP area boundary. The two bald eagle nests documented within the ECMSHCP boundary are located in areas designated for preservation.

## 3.10 FEDERALLY LISTED AND CANDIDATE SPECIES

This section describes the federally listed species, other federal species of concern, and state-listed species potentially occurring in the ECMSHCP area. These species include eight federally listed species, nine state-listed species including one candidate for federal listing, and two other federal species of concern that have been petitioned for federal listing and currently are under status review (Table 3.10-1). Species profiles for each of these species are provided in the ECMSHCP and on the Service's websites (https://www.fws.gov/verobeach/; https://ecos.fws.gov/ecp/), and relevant aspects of each species profile are briefly summarized below. The detailed profiles include tables of major land cover and habitat types within the ECMSHCP area related to species requirements for activities such as breeding, foraging, and nesting.

**Table 3.10-1: Federal and State Listed and Candidate Species and Other Species of Concern**

| Scientific Name | Common Name | Federal Status[1] | State Status[2] |
|---|---|---|---|
| **Federally Listed** | | | |
| *Aphelocoma coerulescens* | Florida scrub jay | T | FT |
| *Drymarchon corais couperi* | Eastern indigo snake | T | FT |
| *Eumops floridanus* | Florida bonneted bat | E | FE |
| *Mycteria americana* | Wood stork | T | FT |
| *Picoides borealis* | Red-cockaded woodpecker | E | FE |
| *Polyborus plancus (= Caracara cheriway)* | Audubon's (= Northern) crested caracara | T | FT |
| *Puma concolor coryi* | Florida panther | E | FE |
| *Rostrhamus sociabilis plumbeus* | Everglade snail kite | E | FE |
| **State Listed** | | | |
| *Athene cunicularia* | Burrowing owl | NL | ST |
| *Egretta caerulea* | Little blue heron | NL | ST |
| *Egretta tricolor* | Tricolored heron | NL | ST |
| *Falco sparverius paulus* | Southeastern American kestrel | NL | ST |
| *Gopherus polyphemus* | Gopher tortoise | C[3] | ST |
| *Grus canadensis pratensis* | Florida sandhill crane | NL | ST |
| *Neovison vison evergladensis* | Everglades mink | NL | ST |
| *Platalea ajaja* | Roseate spoonbill | NL | ST |
| *Sciurus niger avicennia* | Big Cypress fox squirrel | NL | ST |
| **Other Species of Concern** | | | |
| *Crotalus adamanteus* | Eastern diamondback rattlesnake | NL[4] | NL |
| *Lithobates capito* | Gopher frog | NL[4] | NL[5] |

[1] As listed by the U.S. Fish and Wildlife Service in 50 Code of Federal Regulations 17. Federal status: E = endangered, T = threatened, C = candidate for listing, NL = not listed
[2] As listed by the Florida Fish and Wildlife Conservation Commission (FWC) pursuant to Rule 68A-27, Florida Administrative Code. State status as designated by the FWC (May 2017): FE = federally designated as endangered, FT = federally designated as threatened, ST = state designated as threatened, NL = not listed
[3] Candidate in the eastern part of the range and listed in the western part
[4] Not listed but petitioned for federal listing and currently under status review
[5] No longer listed as of January 11, 2017, but part of the Imperiled Species Management Plan

### 3.10.1 Florida Bonneted Bat

The Florida bonneted bat (FBB) (*Eumops floridanus*) is federally listed as endangered under the ESA of 1973. Its state status is "federally designated as endangered" under Florida's Endangered and Threatened Species rule. The FBB is a member of the Molossidae (free-tailed bats) family, and is the largest bat in Florida. Critical habitat has not been designated for this species. Endemic to Florida, the FBB has one of the most restricted distributions of any bat species in the New World (Belwood 1992; Timm and Genoways 2004). Acoustical data, known roosts, and other information indicate that the species uses forests and a variety of other natural and developed areas in south, southwest, and south-central Florida (see Life History, Habitat, and Table 1 of listing rule, USFWS 2014a). Population size is not known, but is thought to be less than that needed for optimum viability (USFWS 2014a).

Roosting habitat includes forest and other areas with tall, mature trees or other areas with suitable roost structures (e.g., utility poles, artificial structures) The FBB roosts singly or in colonies consisting of a male and several females (Belwood 1992; Ober et al. 2016). FBBs feed on flying insects (Belwood 1981, 1992). Various morphological characteristics (e.g., narrow wings, high wing-aspect ratios) make Eumops species well-adapted for efficient, rapid, and prolonged flight in open areas (Findley et al. 1972; Freeman 1981; Norberg and Rayner 1987 Data on other Eumops showed foraging bouts ranged up to 15 miles from roost sites, and that bats traveled 12.4 to 18.6 miles or more (Tibbitts et al. 2002). Based upon new data recovered from GPS satellite tags on FBB, the maximum distance an individual bat has been detected from its capture site is 24.2 miles (Ober 2016). Habitat loss and alteration in forested and urban areas are substantial threats to the FBB (USFWS 2014a; Bailey et al. 2017). FBB has been documented

in Collier County and it uses a diverse array of habitat types (USFWS 2014a); therefore, it is likely to occur within the ECMSHCP area and all of Collier County areas located within the (USFWS 2014a). The ECMSHCP area is located within the FBB Consultation Area.

### 3.10.2 Audubon's Crested Caracara / Northern Crested Caracara

The Florida population of the Audubon's (=northern) crested caracara (*Polyborus plancus* [= *Caracara cheriway]*) is federally listed as threatened, and its state status is "federally designated threatened." Federal protection also is provided by its listing under the MBTA. The Audubon's crested caracara (ACC) is a large raptor with a crest, naked face, heavy bill, elongated neck, and long legs (USFWS 2014a). Critical habitat has not been designated for this species. The ACC is a resident, non-migratory species. Florida's population of caracara is found in the prairie area of the south-central region of the state, from about Polk and Osceola Counties southward to Collier and Broward Counties. The size of Florida's ACC population remains in question; statewide population is estimated to be between 400 and 500 birds (USFWS 2014a). The Florida population of ACC is isolated and habitat specific. Critical habitat has not been designated for the ACC.

ACCs are highly opportunistic in their feeding habits, eating carrion and capturing live prey (Morrison 2001). The ACC in Florida historically inhabited native dry or wet prairie areas containing scattered cabbage palms, their preferred nesting tree. Within agricultural lands, regular mowing, burning, and high-density grazing may maintain low vegetative structure, an important habitat characteristic of the caracara's nest stand area (USFWS 2014a). The ACC appears to be exploiting pastures, ditches, and impounded wetlands that have replaced the historic land (Morrison 2001; USFWS 2014a). The vegetation structure of open grasslands (short-stature vegetation, scattered shrub cover, and nest trees) may be preferred by the caracara, due to its tendency to walk on the ground during foraging activities. Adult ACCs are generally territorial. The great majority of caracara breeding territories occur primarily within the ranchlands of central and southwest Florida. Nesting occurs during the winter months. ACCs generally flush from nests during incubation or early nestling stages when the disturbance source is within 1,000 feet of the nest (Morrison 2001). The ECMSHCP area falls within the USFWS Consultation Area for the ACC. In addition, a "gathering" area has been identified in the north-central portion of the ECMSHCP area.

### 3.10.3 Wood Stork

The wood stork (*Mycteria americana*) is federally listed as threatened, and its state status is "federally designated as threatened." The wood stork (WS) also is afforded protection under the MBTA. No critical habitat has been designated for the WS. The WS is a large, long-legged wading bird. Only the population segment that breeds in the southeastern United States is listed as threatened. In the United States, wood storks were historically known to nest in all coastal states from Texas to South Carolina (USFWS 2016a). In southwest Florida, both adult and juvenile storks consistently disperse northward following fledging. Adults and juveniles return southward in the late fall and early winter months. Wetlands are heavily used by a large portion of the southeastern United States WS population and sub-adult storks from throughout the species' range. Recent population estimates indicate the WS population has reached its highest level since it was listed as endangered in 1984.

WS nesting habitat consists of mangroves as low as 3 feet, cypress trees as tall as 100 feet, and various other live and dead shrubs or trees located in standing water, in permanently inundated wetlands, or on islands surrounded by relatively broad expanses of open water. Frequently used roosting locations include cypress domes or swamps, mangrove islands, expansive willow thickets or small isolated willow islands in broad marshes, and on the ground either on levees or in open marshes (Ogden 1990). The USFWS recognizes the area within 18.6 miles of the nesting WS colony as the Core Foraging Area (CFA) (USFWS 2014a). The ECMSHCP area is located within the CFA of at least six active WS colonies, three of which are directly located in the ECMSHCP area. WS forage in a wide variety of wetland types where fish are available and the water is shallow and open enough to hunt successfully (USFWS 2016a). The primary cause of the WS population decline in the United States was the loss of wetland habitats or loss of wetland function that resulted in reduced prey availability.

### 3.10.4 Red-Cockaded Woodpecker

The red-cockaded woodpecker (*Picoides borealis*) is federally listed as endangered, and its state status is "federally designated as endangered." The red-cockaded woodpecker (RCW) also is afforded protection under the MBTA. No critical habitat has been designated for the RCW. The current distribution of this territorial species (endemic to open, mature and old growth pine ecosystems) is restricted to the remaining fragmented parcels of suitable pine forest in 11 southeastern states, including Florida (USFWS 2014b). In southwest Florida, there are an estimated 85 active RCW clusters; 51 percent are on federal lands, 35 percent are on state lands, and 14 percent are on private lands. This non-migratory species is a local, year-round resident of Florida (USFWS 2014b). Home range size in central Florida is 319 acres and 269 acres in northwestern Florida (USFWS 2003).

RCWs require open pine woodlands and savannahs with large old pines for nesting and roosting habitat (clusters). The RCW is the only North American woodpecker that exclusively excavates its roost and nest cavities in living pines. Minimum age of cavity trees for nesting (pines) is 60 to 80 years depending on the tree and site factors. Cavity trees must be in open stands with little or no hardwood midstory and few or no overstory hardwoods. Suitable foraging habitat consists of mature pines with an open canopy, low densities of small pines, little or no hardwood or pine midstory, few or no overstory hardwoods, and abundant native bunchgrass and forb groundcovers. RCW populations are unusually resistant to environmental and demographic variation, but highly sensitive to the spatial arrangement of habitat. If groups are isolated in space, dispersal of helpers to neighboring territories is disrupted and populations become much less likely to persist through time (USFWS 2003). The southwestern portion of the ECMSHCP area falls within the USFWS Consultation Area for the RCW. Based on the USFWS's available GIS data, no active RCW clusters have been documented within the ECMSHCP area. However, several active clusters have been documented within 6 to 7 miles of the ECMSHCP area.

### 3.10.5 Florida Panther

The Florida panther (*Puma concolor coryi*) currently exists as a single breeding population located in southern Florida and represents the only breeding population of puma east of the Mississippi River. The Florida panther (FP) is federally listed as endangered, and its state status is "federally designated as endangered." Critical habitat has not been designated for the FP. The core range occupied by breeding adults comprises approximately 1.38 million acres south of the Caloosahatchee River (Frakes et al. 2015). A larger area south of the Caloosahatchee River covering approximately 3.11 million acres includes the core adult breeding area, lower quality landscapes used by transient panthers, and a small wildlife corridor leading into central Florida (Kautz et al. 2006). This area was mapped as three distinct regions by Kautz et al. (2006): The Primary Zone (approximately 2.3 million acres) was defined as lands essential to the long-term viability and survival of the FP; Secondary Zone (approximately 810,000 acres) was defined as "natural and disturbed lands in south Florida that may be important to transient sub-adult male panthers and have the potential to support an expanding panther population"; and the Dispersal Zone (approximately 28,000 acres) was defined as a small wildlife corridor east of LaBelle, Florida, intended for protection to facilitate long-term movements of panthers out of southwest Florida and into central Florida north of the Caloosahatchee River (Figure 3.10-1). Two adult females, one with kittens, were documented in Charlotte and Highlands County in March 2017, the first time since 1973 that females have been confirmed north of the Caloosahatchee River, but it is premature to conclude that this marks an expansion of the breeding range.

Habitat of the FP is an extensive landscape comprised of a mix of natural, semi-natural, and agricultural uses. Highest ranking habitats are pinelands, upland hardwood forests, hardwood swamps, and cypress swamps (Comiskey et al. 2002, Kautz et al. 2006, Land et al. 2008, Onorato et al. 2011, Frakes et al. 2015); Females consistently select den sites in areas with extremely dense understory vegetation, such as palmetto thickets, shrub, or vines (USFWS 1999). Primary prey species are white-tailed deer, wild hogs, marsh rabbits, raccoons, and armadillos (Onorato et al. 2010).

FPs have occurred within the ECMSHCP area for more than three decades. Approximately 117,452 acres of the ECMSHCP area are in the Primary Zone, and the ECMSHCP area comprises 5.2 percent of the total area of this zone. The most abundant Primary Zone cover types in the ECMSHCP area are wetland forests, herbaceous and shrub-dominated wetlands, croplands, and citrus groves. Approximately

35,210 acres of the Secondary Zone are within the ECMSHCP area, which accounts for 4.3 percent of this zone. Agricultural lands (excluding pasture lands) dominate the area of the ECMSHCP within the Secondary Zone. The primary pathways, or corridors, used by panthers in the vicinity of the ECMSHCP area are Okaloacoochee Slough between BCNP and OSSF, and Camp Keais Strand between FPNWR and CREW. Approximately 80,600 acres of adult breeding range habitat are within the ECMSHCP area. Approximately 53 percent of the ECMSHCP area has been mapped as adult breeding range habitat (Primary Zone) as defined by Kautz et al. 2006, and the mapped habitats within the ECMSHCP area comprise approximately 5.85 percent of these adult breeding range habitats.

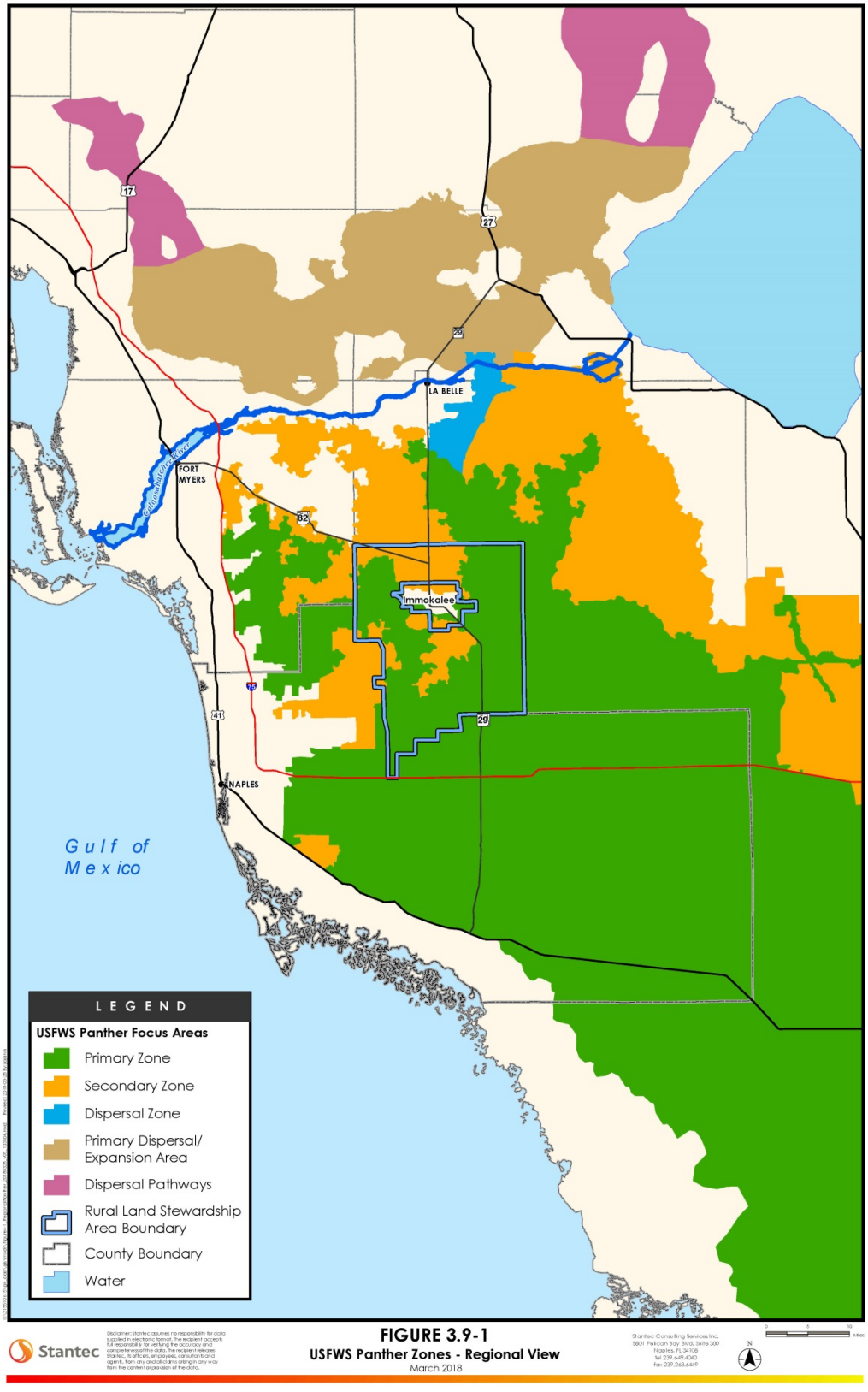



**Figure 3.10-1. U.S. Fish and Wildlife Service Panther Zones – Regional View**

VHF-telemetry data and GPS-telemetry data from FWC show that collared panthers primarily use natural and agricultural lands south of CR 858 to the FPNWR and BCNP, habitats associated with Okaloacoochee Slough east of Immokalee and SR 29, and natural habitats associated with Camp Keais Strand in the western half of the ECMSHCP area. Most records of panther dens in the ECMSHCP area are south of CR 858 within 2 to 3 miles on either side of SR 29 north of FPNWR and BCNP.

The Service recognizes that both panther telemetry locations and panther den locations, derived from telemetry, have telemetry bias. This bias stems from the fact that panthers that have been collared were collared on public land. These panthers used adjacent private lands, but do not provide the entire record of private land use in the ECMSHCP area. The dens that have been recorded in the ECMSHCP area can be seen as confirmation that denning does occur, but not as an indication that these are the only areas where denning occurs. Likewise, telemetry locations indicate the major corridors for panthers through the ECMSHCP area, but should not be used to conclude that the reduced number of telemetry locations in the rest of the ECMSHCP area indicates these areas are used infrequently.

Recent studies have estimated panther densities in the vicinity of the ECMSHCP area. Sollmann et al. (2013) generated panther density estimates using a capture-recapture model based on two different 9-month camera trap surveys conducted in the Picayune Strand Restoration Project. They estimated a density of 1.51 panthers per 100 square kilometers ($km^2$) in the first 9-month period and 1.46 panthers per 100 $km^2$ in the second 9-month period. Dorazio and Onorato (2015) did a similar analysis based on one set of camera traps placed in the FPNWR and adjacent portions of the FSPSP and the PSSF; and another set places in the Addition Lands of the BCNP. The cameras were out for six 30-day periods and one 19-day period, and the model was a modified version of the one used by Sollmann et al. (2013). The density estimate for the BCNP was 1.37 panthers per 100 $km^2$, and the estimate for the FPNWR and adjacent area was 5.91 panthers per 100 $km^2$.

A review of panther mortality information maintained by FWC reveals that vehicle strike mortalities are the number one cause of panther mortality. Panther injuries and mortality due to vehicle strikes are also another source of information about areas that are used by panthers. Panther vehicle strike records along SR 29, CR 846, and CR 858 within the ECMSHCP area transect areas of highest use by panthers. Within the ECMSHCP area, 28 vehicle strike mortalities (6 from beginning of 2013 to now) have occurred along SR 29 south of Immokalee and 2 north of Immokalee (1 from beginning of 2013 to now), 6 vehicle strike mortalities (2 from beginning of 2013 to now and one of these in 2018) have occurred along CR 846 west of Immokalee and 10 east of Immokalee (4 from beginning of 2013 to now and 1 of these in 2018), and 6 vehicle strike mortalities (3 from beginning of 2013 to now) and 1 injury have occurred along CR 858 (all east of Camp Keals Road). There is one wildlife underpass on the west side of CR846 and one on the east side, both in areas where a number of mortalities occurred. There are also two underpasses along the western side of CR 858 west of Camp Keals Road, but not near recorded mortalities.

### 3.10.6 Florida Scrub-jay

The Florida scrub jay (*Aphelocoma coerulescens*) is federally listed as threatened, and its state status is "federally designated as threatened." The Florida scrub jay (FSJ) also is afforded protection under the MBTA. Critical habitat has not been designated for this species. The FSJ is restricted to peninsular Florida. The FSJ is similar in size and shape to the blue jay (*Cyanocitta cristata*), but differs significantly in coloration and lacks the crest (USFWS 2015). Historically, oak scrub habitat used by the FSJ occurred as numerous isolated patches in peninsular Florida. A statewide FSJ census was last conducted in 1992 and 1993, at which time there were an estimated 4,000 pairs of FSJ s left in Florida; within Collier County, the census resulted in 53 FSJ s among 19 total groups (mean group size = 2.79) (Fitzpatrick et al. 1994). The FSJ is non-migratory and permanently territorial. Dispersal distance is approximately 5 miles (USFWS 2015). Brushy pastures, scrubby corridors along railway and road rights-of-way, and open burned flatwoods offer links for colonization. Territory size averages 22 to 25 acres, with a minimum size of about 12 acres.

FSJ nests are typically constructed in shrubby oaks. FSJs forage mostly on or near the ground, often along the edges of natural or man-made openings. Habitat occurs as patches of oak scrub within a matrix of little-used habitat of saw palmetto and herbaceous swale marshes. These native matrix habitats supply prey for FSJ s and habitat for other species of conservation concern (USFWS 2015). Acorns are the

principal plant food. The FSJ prefers xeric oak scrub habitats within the ancient dune systems of peninsular Florida. The ECMSHCP area is located within the USFWS Consultation Area for the FSJ. However, no FSJ s have been documented within the ECMSHCP area since the 1992-1993 census survey. The ECMSHCP area also falls within a portion of the Lee-Collier metapopulation, which was shown to be highly vulnerable to quasi-extinction if no additional habitat was acquired (USFWS 2015).

### 3.10.7 Everglade Snail Kite

The Everglade snail kite (*Rostrhamus sociabilis plumbeus*) is federally listed as endangered, and its state status is "federally designated as threatened." The Everglade snail kite (ESK) also is afforded protection under the MBTA. Critical habitat for the ESK was designated in 1977. The ESK is a medium-sized raptor with a slender, decurved bill (USFWS 2016a). The Florida subspecies also occurs in Cuba and northwestern Honduras, but there is no evidence of movement of birds between Cuba and Florida. The current distribution of the ESK in Florida is limited to six large freshwater systems in central and southern portions of Florida. In 2014, the population estimate was approximately 1,754 birds (USFWS 2016a). Non-breeding snail kites may fly long distances while tracking prey resources across the landscape, while nesting birds often forage within approximately 1 mile of their nests under favorable conditions.

The ESK and apple snails, its food source, depend on wetland habitats for all aspects of their life histories. Primary wetland habitat types consist of freshwater marshes and the shallow, vegetated littoral zones along the edges of lakes where apple snails occur in relatively high abundance and can be found and captured by kites (USFWS 2016a). Nesting almost always occurs over water and in the proximity of favorable foraging areas. Outside of the breeding season, snail kites may roost communally, usually over water, in groups of up to 400 or more individuals, typically in taller vegetation among low-profile marshes. The principal threat to the snail kite is the loss, fragmentation, and degradation of wetlands in central and southern Florida resulting from urban and agricultural development, and alterations to wetland hydrology through ditching, impoundment, and water level management. No critical habitat occurs within the ECMSHCP area. However, the ECMSHCP area lies within the USFWS Consultation Area for the ESK. Currently, there are no documented nests within the ECMSHCP area or within Collier County based on the USFWS's publicly available GIS data.

### 3.10.8 Eastern Indigo Snake

The eastern indigo snake (*Drymarchon corais couperi*) is federally listed as threatened, and its state status is "federally designated as threatened." Critical habitat has not been designated for this species. The eastern indigo snake (IS) can reach lengths of up to 8.5 feet and is one of the largest North American snake species (USFWS 2014a). Georgia and Florida currently support the remaining endemic populations of the IS. Due to difficulties of observing and capturing ISs existing populations are unknown (USFWS 2008). The IS ranges over large areas and into various habitats throughout the year (USFWS 2014a). In peninsular Florida, data on territory size for females vary from 4.75 to 375 acres; male home ranges vary from 4 to 818 acres (USFWS 2008).

Throughout their range, the IS uses burrows for nesting, mating, and sheltering (USFWS 2008). ISs shelter in gopher tortoise burrows, hollowed root channels, hollow logs, or the burrows of rodents, armadillos, or land crabs. The IS frequents diverse habitats. The IS is most commonly observed in hardwood hammocks and pinelands where they can easily find cover. However, ISs also use dry prairie, edges of freshwater marshes, agricultural fields, and human-altered habitats. Because the IS uses a diverse array of habitat types, it is presumed to occur throughout the ECMSHCP area (USFWS 2014a). Based on the USFWS's publicly available GIS data, the IS has been observed within 0.15 mile of the ECMSHCP area.

### 3.10.9 Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*) is a candidate for federal listing in the eastern portion of its range including Florida (USFWS 2014b), and is state listed as threatened. The gopher tortoise (GT) is larger than any of the other terrestrial turtles in the region (USFWS 2016b). The current range for the eastern population of the GT aligns with the historic range. The core of the current distribution of the GT in the eastern portion of its range includes central and north Florida and southern Georgia (USFWS 2016b). It is estimated that there are approximately 785,000 individuals in Florida. Home range size and

movements increase with age and body size, and home range area tends to vary with habitat quality. Mean home ranges of individual GT in Alabama, Florida, and Georgia vary from 1.3 to 5.2 acres for males and 0.2 to 2.5 acres for females (USFWS 2016b). GTs spend most of their time within burrows and emerge during the day to bask in sunlight, to feed, and reproduce.

The GT requires well-drained, sandy soils for burrowing and nest construction, an abundance of herbaceous ground cover for food, and a generally open canopy that allows sunlight to reach the forest floor (USFWS 2016b). GT females excavate a shallow nest to lay and bury eggs, typically between early May and late June, and usually in the apron of soil at the mouth of the burrow. Average clutch size varies from about 4 to 10 eggs per clutch, and incubation lasts 85 to 100 days. The GT prefers grassy, open-canopy microhabitats, and their population density directly relates to the density of herbaceous biomass and a lack of canopy. Grasses and grass-like plants are important in their diets. The GT burrows are the habitat and center of normal feeding, breeding, and sheltering activity. The GT has been observed in the ECMSHCP area. The GT has a commensal relationship with the gopher frog (See Section 3.11.2).

## 3.11 STATE-LISTED SPECIES

### 3.11.1 Burrowing Owl

The Florida burrowing owl (*Athene cunicularia floridana*) is state listed as threatened, and is protected under the MBTA and Rule 68A-27.005, F.A.C.. The Florida burrowing owl (FBO) is a small bird that spends most of its time the on ground. The FBO occurs primarily in peninsular Florida (FWC 2013b). Its distribution is localized and patchy, especially in the northern part of its range. The current population status of the FBO is unknown. The FBO is often associated with high densities of other burrowing animals such as prairie dogs, ground squirrels, and tortoises. The FBO has adapted to human activity and now occupies urban areas, sometimes in high densities.

The FBO typically digs burrows but will use GT or armadillo burrows, as well as structures such as manholes, sewer drains, and concrete pipes (FWC 2013b). The FBO mainly eats insects, especially grasshoppers and beetles. Based on FWC GIS data, the FBO has been documented within and adjacent to the ECMSHCP area. Potential foraging habitat within the ECMSHCP area may include wet prairie and depression marsh. Preferred breeding and sheltering areas are sandy, well-drained areas with low vegetation height and good visibility.

### 3.11.2 Little Blue Heron

The little blue heron (*Egretta caerulea*) is state listed as threatened, and is protected under the MBTA. The little blue heron (LBH) is a medium-sized heron with a slate-blue body. LBH occur throughout the entire state of Florida except for the extreme western panhandle and north-central region of the state (i.e., Columbia, Clay, and Union Counties and adjacent region) (FWC 2011a). LBH typically nest and roost in multi-species colonies, but usually forage singly. There has been at least a 30 percent decline of LBH populations since 1974 and declines in population are expected to slowly continue as a result of sea level rise and reduced freshwater discharge into coastal estuaries that will reduce primary estuarine foraging habitat. The statewide population currently is unknown but it is estimated to be between 5,000 and 15,000 individuals (FWC 2011a).

LBH depend on healthy wetlands, mangrove and other islands, and vegetated areas suitable for resting and breeding and which are near foraging habitat (FWC 2013d). LBH typically nests in multi-species colonies of various sizes in a variety of woody vegetation including cypress, willow, red maple, buttonwood, mangroves, and Brazilian pepper (FWC 2013d). LBH forage in shallow marine, brackish, or freshwater areas, including tidal ponds and sloughs, mudflats, mangrove-dominated pools, freshwater sloughs and marshes, and human-created impoundments, and rely on freshwater forage sites to raise young until they become more salt tolerant (FWC 2013d). The areas of potentially suitable habitat included the major regional flowway systems (Corkscrew Marsh, Camp Keais Strand, and Okaloacoochee Slough) and major wetland areas bordering the FPNWR. Extensive areas of potentially suitable habitat for imperiled wading birds exist within the ECMSHCP area, and this species is routinely observed within the ECMSHCP area.

### 3.11.3 Tricolored Heron

The tricolored heron (*Egretta tricolor*) is state listed as threatened species, and is protected under the MBTA. The tricolored heron (TCH) is a medium-sized heron with a slender neck. TCH occurs throughout most of Florida in both freshwater and estuarine habitats (FWC 2013d). About 1,144 pairs of TCH nested in the three Water Conservation Areas and mainland Everglades National Park in 2009. The population is expected to continue a slow decline (FWC 2011b).

TCH typically nests in multi-species colonies of various sizes and are primarily found nesting in coastal habitat, but also nest in a variety of woody vegetation including cypress, willow, red maple, buttonwood, mangroves, and Brazilian pepper (FWC 2013d). TCH forage in shallow marine, brackish, or freshwater sites and depend on healthy wetlands, mangrove and other islands, and vegetated areas suitable for resting and breeding and which are near foraging habitat. Extensive areas of potentially suitable habitat for imperiled wading birds exist within the ECMSHCP area, but no occurrence data are publically available. FNAI maintains occurrence records for the tricolored heron within Collier County, and this species is routinely observed within the ECMSHCP area.

### 3.11.4 Roseate Spoonbill

The roseate spoonbill is state listed as threatened, and is protected under the MBTA. The roseate spoonbill (RS) is a large, long-legged wading bird with a dorso-ventrally flattened, spatulate bill (NatureServe 2018a). RSs are residents locally in southern Florida (as far north as Tampa Bay on Gulf Coast) and typically nest, roost, and feed in multi-species groups or flocks. Ground surveys by FWC and Audubon Society biologists determined that the RS population was between 550 and 750 pairs in Tampa Bay and Florida Bay during the late 1980s but less than 500 pairs during the 2000s (Lorenz et al. 2009, Cook and Baranski 2018).

RS depend on healthy wetlands, mangrove and other islands, and vegetated areas, and primarily nests on coastal islands in mangroves or Brazilian pepper but also are found nesting on spoil islands (FWC 2013d). RSs forage in shallow waters for crustaceans such as shrimp, prawns, aquatic insects, and fish (Cornell 2018). RSs are social birds that gather in small to large groups (from 2 to about 400 individuals) when feeding and roosting. Extensive areas of suitable habitat for imperiled wading birds exist within the ECMSHCP area, and numerous sightings of RSs have been recorded from roads throughout the ECMSHCP area according to eBird.org. Hotspots for observations occur at the Oil Well Road tomato field and in Ave. Suitable habitat includes the major regional flowway systems (Corkscrew Marsh, Camp Keais Strand, and Okaloacoochee Slough) and major wetland areas bordering the FPNWR.

### 3.11.5 Southeastern American Kestrel

The Southeastern American kestrel (*Falco sparverius paulus*) is state listed as threatened, and is protected under the MBTA. The southeastern American kestrel (SAK) is the only subspecies that is a permanent resident in Florida. American kestrels are the smallest falcon in North America (FWC 2013e). The SAK was once widely distributed throughout seven southeastern states. Today, the subspecies occurs primarily in Florida and is patchily distributed elsewhere in the coastal plain of South Carolina and Georgia (FWC 2013e). Within Florida, the SAK was once distributed as far south as Dade County but now breeds no farther south than Highlands and Lee Counties (FWC 2011c). Estimates of population declines for SAK during the last half century range from 82 percent in north-central Florida to 95 percent for the Floridian physiographic region. SAKs have high territory fidelity (FWC 2013e).

SAK uses a variety of natural communities in Florida, including scrub, scrubby flatwoods, dry prairie, pastures, parks, golf courses, and orange groves (FWC 2013e). Open ground cover such as typical sandhill landscape consisting of a widely spaced canopy of longleaf pine or slash pine with wiregrass and forb-dominated groundcover are used for feeding and foraging, and the species depends on natural or manmade cavities for sheltering (FWC 2013e). The FNAI depicts Lee and Hendry Counties as part of SAK's range in Florida, but not Collier County (Hipes et al. 2001). No occurrence data were available for this species. The FWC Species Action Plan (FWC 2013d, Figure 3) identified no SAK breeding records within the ECMSHCP area.

### 3.11.6 Florida Sandhill Crane

The Florida sandhill crane (*Grus canadensis pratensis*) is state listed as threatened, and is protected under the MBTA. Florida sandhill cranes (FSC) are heavy-bodied gray birds with long necks and legs (FWC 2013c, Hipes et al. 2001). FSC are non-migratory and occur from southern Georgia, primarily in the Okefenokee Swamp, to the Everglades. However, most of the population is in peninsular Florida. In 2008, the population was estimated using habitat data at just under 4,600 individuals (FWC 2013c). Dispersal distances for this species average 7.2 miles, with a maximum observed dispersal of 29.8 miles. Females disperse farther than males from their natal territory.

FSC rely on shallow marshes for roosting and nesting (FWC 2013c). FSC prefer wetlands that are dominated by pickerelweed and maidencane (Hipes et al. 2001). They forage in wet and dry prairies, freshwater marshes, and pasture lands and typically avoid forests and deep marshes, but use transition zones and edges between these and prairies or pasture lands. Sandhill cranes often use agricultural areas like feed lots and crop fields, and also golf courses and other open lawns, especially in winter and early spring (Hipes et al. 2001). FSC nest primarily from February through April. In peninsular Florida, the FSC ranges from Alachua County in the north to the northern edge of the Everglades in the south, where there is an abundance of shallow marshes for roosting and nesting and open upland and wetland habitats for foraging on which FSCs rely (FWC 2013c). FSCs have not been recorded within the ECMSHCP area.

### 3.11.7 Everglades Mink

The Everglades mink (*Neovison vison evergladensis*) is state listed as threatened. Currently, four subspecies of mink reside in Florida (FWC 2011d). The Everglades mink (EM) is uniformly dark brown, but some individuals have a white chin spot and a few have a white chest patch. The EM is a disjunct population of the American mink. Population size, territory, and extent of occurrence are poorly known. Some researchers have speculated that EMs are locally common and several have noted that EM are more common in the Big Cypress Swamp than in the Everglades (FWC 2011d). Males have larger home ranges than do females, and EM are typically solitary except during the breeding season (FWC 2013h).

EM use spikerush marshes and salt marshes between the mangroves and freshwater habitats during the wet season, and swamp forests during the dry season. As water levels recede, the EM may relocate to more permanent ponds and concentrated food sources (FWC 2013h). EM is believed to breed in the fall in conjunction with the late wet season. EM may use fallen logs or debris, standing snags, hollows of trees, or any suitable, isolated natural or manmade structure for shelter within various types of wetland areas (NatureServe 2018b). Although no EM occurrences have been documented in the ECMSHCP area, it is included as a covered species within the ECMSHCP as a contingency due to the proximity of the FSPSP to the ECMSHCP area, the presence of wetland habitats within the ECMSHCP area, and the lack of knowledge regarding the mink's current population status and distribution.

### 3.11.8 Big Cypress Fox Squirrel

The Big Cypress fox squirrel (*Sciurus niger avicennia*) is state listed as threatened. The Big Cypress fox squirrel (BCFS) is a large tree squirrel, highly variable in color and patterning. The extent of occurrence for the BCFS, endemic to Florida, is limited to southwestern peninsular Florida, south of the Caloosahatchee River, in Hendry, Lee, and Collier Counties. Overall, the range occupies "the mangrove, the pinelands, and the Big Cypress west of the Everglades and south of the Caloosahatchee River." Home ranges of individuals typically overlap, although adults, often females, defend exclusive core areas (FWC 2013a). Within the natural habitat of BCNP, the mean home range size for male BCFS was 187 acres and 26 acres for female BCFS. Approximate estimates of BCFS local population densities have been calculated at 0.00036 squirrels/acre in typical cypress swamp habitat in Corkscrew Swamp Sanctuary and 0.0078 squirrels/acre in ranchland woodlots.

Natural habitats for BCFS include South Florida slash pine forests, cypress forests, live oak woods, tropical hardwood forests, coastal broadleaf evergreen hammocks, and mangrove swamps. Developed habitats for the BCFS include urbanized and agricultural lands. BCFS require cypress forest for nest sites, adjacent to good foraging habitat, typically in slash pine flatwoods (FWC 2013c). Their diet is varied and included seeds and nuts, fruit, flowers, and berries. Suitable nesting and foraging habitat exists in the ECMSHCP area.

## 3.12 OTHER SPECIES OF CONCERN

### 3.12.1 Eastern Diamondback Rattlesnake

The eastern diamondback rattlesnake (*Crotalus adamanteus*) is currently not state or federally listed; it has been petitioned for federal listing and is currently under status review. There is no critical habitat designated for the eastern diamondback rattlesnake (EDR). EDR is the largest venomous rattlesnake in the world (USFWS 2012). The remaining intact range, supporting large populations of the EDR, is now located only in northern Florida and southern Georgia (USFWS 2012). The home ranges for females average 114.9 acres, home ranges for males average 208.3 acres, and the EDR does not defend a territory and does not den communally (USFWS 2012). Adult population size is unknown but presumably exceeds 100,000. The EDR is locally common in suitable habitat in Florida.

The EDR inhabits pine and wiregrass and pine-palmetto flatwoods, longleaf pine-turkey oak hills, rosemary scrub, mesophytic and coastal maritime hammocks, xeric hammocks, barrier islands and coastal scrub habitats, vicinity of wet savannas and wet prairies (during dry periods), dry prairie, mixed pine-hardwood successional woodland, and abandoned farms and fields (especially near pine-dominated habitats) (NatureServe 2018c). Most young are born in retreats such as GT burrows or hollow logs. The EDR uses GT and armadillo burrows as well as fire-burned pine stump holes and cavities at the bases of hardwood trees (USFWS 2012). The open-canopy habitats of the EDR favor the development of an herbaceous groundcover on which its primary prey depends.

### 3.12.2 Gopher Frog

The gopher frog (*Lithobates capito*) is not state or federally listed; it has been petitioned for federal listing and is currently under status review. This species is part of the Florida Imperiled Species Management Plan. The gopher frog (GF) is a stubby frog with short limbs, a large head, and dorsolateral ridges (NatureServe 2018d). The historical range of the GF extends eastward from the Mobile River delta in Alabama across the southeastern Coastal Plain into North Carolina. The GF maintains a small home range in the vicinity of its burrow when not breeding. As discussed in the ECMSHCP, the GF have been known to travel more than a mile to a breeding pond, typically during the summer breeding season in South Florida. Recent surveys suggest that healthy populations of GF exist on public lands in peninsular Florida. Based on the lack of activity at many historical breeding sites, Franz and Smith (1999) concluded that GF populations had declined east of the Apalachicola River in the 20 years from 1975 to 1995, particularly in coastal counties and in areas where human population is concentrated.

When not breeding the GF is generally associated with longleaf pine-xeric oak sandhills, but also occurs in upland pine forest, scrub, xeric hammock, mesic and scrubby flatwoods, dry prairie, mixed hardwood-pine communities, and a variety of disturbed habitats (FWC 2011e). Breeding has been observed in depression marshes, basin marshes, wet prairies, dome swamps, upland Sandhill lakes, sinkhole ponds, ditches, and borrow pits. In Florida, GF primarily use GT burrows, although they will use other refugia such as pocket gopher and small mammal burrows, crayfish burrows, stump holes, leaf litter, hollow logs, and clumps of grass (FWC 2013g). No publicly available GIS occurrence data exist currently for the GF, which is included as a covered species within the ECMSHCP as a contingency due to its commensal relationship with the GT.

## 3.13 FARMLANDS

NRCS's FPPA and its implementing regulations (7 CFR § 657.5) define prime, unique, statewide, and locally important farmlands. Only soils classified as unique farmland occur in the ECMSHCP area. Unique farmland is land that is used for producing high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture necessary to produce high quality crops or high yields of crops when using acceptable farming methods.

According to NRCS, there are about 58,050 ac of soils (38.4 percent of soils) within the ECMSHCP Area that are categorized as unique farmland soils. Some of these soils may not currently be in active agriculture. Active agriculture (including cultivated crops, citrus, sod, pastures, and specialty crops) comprises approximately 50 percent of the ECMSHCP Area. The 50,175-acre envelope of land

designated for Covered Activities (including residential/commercial development and mining) contains an estimated 35,638 acres in intensive agricultural production (row crops, citrus groves, and sod farms).

# CHAPTER 4.0 ENVIRONMENTAL CONSEQUENCES

## 4.1 DEFINITION OF TERMS

Determining impact thresholds provides an idea of the intensity of a given impact on a specific topic. Impacts on a resource area may result from a variety of direct or indirect effects. *Direct effects* are caused by an action and are effects that occur at the same time and place as the action. *Indirect effects* are caused by the action and occur later or farther away, but are still reasonably foreseeable. This document discloses and analyzes both direct and indirect effects, but does not differentiate between them in the discussions.

The environmental consequences for each resource were identified and characterized by impact intensity. *Impact Intensity* refers to the severity of the impact. Intensity definitions used in this document are provided below:

- No Impact – The action would result in no effect or environmental consequences to the resource.
- Below Significant Impacts – The action would result in only minor changes in the current condition of the resource and their capacity to support established uses would not be substantially altered.
- Mitigated to Below Significant Impacts – Actions or project design features would reduce the degree or magnitude of the environmental impacts by avoiding, minimizing, or compensating for the impact, reducing the impact over time, or rectify the impact. If mitigation measures were not implemented, the potential for resource impacts and the magnitude of those impacts would increase.
- Adverse Impact – The action would result in a change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.
- Significant Impacts – The action would result in major changes in the current condition of the resources or their capacity to support established uses.

Cumulative effects are discussed in Section 4.11, Summary of Cumulative Impacts, and Appendix G.

## 4.2 ENVIRONMENTAL SETTING

The environmental setting refers to the natural attributes of the region such as soils and climate, as well as the relationship of the ECMSHCP area to places where people live, work, and participate in recreational activities. Section 3.1 describes the environmental setting (geography, topography, climate, regional ecosystem and existing land uses) of the area potentially affected by the proposed action and the preferred alternative.

### 4.2.1 General Geography

See Section 3.1.2 for a general description of the existing conditions of the ECMSHCP area's general geography. The Service does not anticipate impacts to general geography from the No Action Alternative or Alternative 2. Therefore, effects to general geography are excluded from further analysis and are not included in this chapter.

### 4.2.2 Topography

See Section 3.1.3 for a general description of the existing conditions of ECMSHCP area topography. The Service does not anticipate impacts to topography from the No Action Alternative or Alternative 2. Therefore, effects to topography are excluded from further analysis and are not included in this chapter.

### 4.2.3 Climate

#### *4.2.3.1 Alternative 1 – No Action*

Changes in hurricane intensity, seasonal precipitation, and temperature are anticipated in the ECMSHCP area. However, SLR is not expected to inundate the ECMSHCP area or cause increases in salinity in the root zone. The No Action Alternative is expected to develop under a combination of base zoning (low-

density 5-acre single-family ranchettes), but could have higher density development or earth mining, within the RLSP SRAs. The development of individual 5-acre lots (base zoning) within the ECMSHCP boundary would not facilitate community-scale stormwater management infrastructure. This, in turn, would increase the risk of flooding in base zoning areas. During severe weather events such as fire, flooding, and hurricanes, the remoteness of single-family residences in the base zoning area would impede rescue and disaster recovery efforts. Comprehensive wildfire fuel management efforts, centralized emergency management services, and stormwater utilities may be less effective and more costly in remote low-density residential areas. In summary, the ability to mitigate human risk from climate change is greatly reduced within areas that comply with base zoning. This form of low-density development would be more vulnerable to the effects of climate change than the Proposed Action Alternative, but still below significant impacts. Development within the RLSP SRAs would implement modern zoning practices that mitigate human risk, described above, from climate change.

In summary, Alternative 1 is anticipated to have below significant impacts, but is expected to have greater risk to human life, property and natural resources caused by the effects climate change than Alternative 2.

#### *4.2.3.2 Alternative 2 – Issuance of ITPs for the ECMSHCP*

Changes in hurricane intensity, seasonal precipitation, and temperature are anticipated in the ECMSHCP area. However, SLR is not expected to inundate the ECMSHCP area or cause increases in salinity in the root zone. Alternative 2 is expected to result in modern zoning practices within the Covered Activities area. These zoning and development practices would mitigate human risk from climate. The covered activities area would include centralized stormwater and centralized emergency management services. The stormwater utilities would lessen the flood damage from tropical storm events and prevent recurrent flooding associated with seasonal rain events. Additionally, the communities in the covered activities area would have centralized emergency services and infrastructure that would facilitate faster responses to disasters.

Alternative 2 is also expected to mitigate the risk to natural areas from threats posed by climate change. Implementation of best management practices for forested areas is the most effective method to reduce the potential for adverse impacts from unplanned burning. The management of natural areas under the ECMSHCP would include fuel load reduction by prescribed burning and mechanical vegetation control. Fire breaks would also be maintained where needed. Although lightning-induced fires are a natural occurrence and no methods are reasonably available to directly prevent such fires, reduction of fuel loads may limit fire frequency and intensity.

In summary, Alternative 2 is anticipated to have below significant impacts, and is expected to have less risk to human life and property and natural resources caused by the effects climate change than the No Action Alternative.

### 4.2.4 Regional Ecosystem

See Section 3.1.5 for a general description of the existing conditions of the area's regional ecosystem. Impacts to the regional ecosystem include multiple components (e.g. water resources, biological resources, fish and wildlife, etc.) that are addressed individually throughout this chapter. .

### 4.2.5 Land Uses

Present major land use categories are agricultural (50 percent), native wetlands (39 percent), and native uplands (9 percent). The remaining land uses include earth mining, roadways and utilities infrastructure, open water, and residential and commercial uses (related to the Town of Ave Maria).

#### *4.2.5.1 Alternative 1 – No Action*

Under Alternative 1, land conversion from present use to other uses (such as earth mining, oil and gas exploration, residential and commercial development) under the base zoning is likely anywhere within the ECMSHCP, or at greater densities within the RLSP "Open" lands.

Under Alternative1, land development conducted according to base zoning would be dispersed throughout the RLSA open lands. This low-density, disjointed pattern of land use, would likely emerge, resulting in fragmentation of valuable habitat and reduction of connectivity between adjacent public lands. This land use pattern would require a dispersed transportation and municipal infrastructure similar to the adjacent Golden Gate Estates. Land owners could also voluntarily participate in the RLSP; where they would be free to pursue development at greater densities than are permitted under base zoning. This optional participation in the RLSP requires transfer of development rights within the RLSA's Stewardship Sending Areas (SSAs) to the RLSA's Stewardship Receiving Areas (SRAs). Landowners participating in the RLSP can also pursue earth mining activities with a SRA. Under the No Action Alternative, any land use action taken by land owners could be done with, or without the following: coordination among landowners, landscape-level planning, monitoring or mitigation. Projects would be evaluated individually on a project-by-project basis to ensure compliance under federal, state, and local laws.

#### *4.2.5.2 Alternative 2 – Issuance of ITPs for the ECMSHCP*

The ECMSHCP provides a long-term (50-year) conservation and land use planning framework involving the restricted use of approximately 107,000 acres of privately held land while setting aside 45,000 acres for development within the ECMSHCP area. Using conservation design and planning, the ECMSHCP seeks to create a long-term balance among the goals of environmental preservation, species protection, continued agricultural use of lands, and economic development. With the use of economic incentives, regulatory mechanisms, and science-based land management, the ECMSHCP seeks to provide a balanced, sustainable future for the region.

Under Alternative 2, land use would be implemented using a regional landscape strategy. Land use would evolve according to the permitted use of land within the defined areas of the ECMSHCP, thus avoiding piecemeal development scenarios. Large expanses of land would be set aside for open space, providing habitat and interconnection with adjacent lands, thus facilitating the current agricultural and natural character of the area. Therefore, the impacts to land use could still be adverse, but less than the No Action Alternative. Under this Alternative, the Service would request on-site or off-site mitigation for unavoidable impacts to the FP or the eighteen other Covered Species as a condition of our ITP, if issued.

## 4.3 GEOLOGY AND SOILS

This section addresses the potential environmental consequences of the no action and action alternatives on geology and soils.

### 4.3.1 Alternative 1 – No Action

Under the No Action Alternative, ITPs would not be issued and the ECMSHCP would not be implemented. Agricultural, ranching, and other activities that have occurred historically would continue until such time that landowners, including the ECPO, decide to develop the land or conduct soil-disturbing activities such as mining and oil and gas exploration throughout the ECMSHCP area.

The RLSP does not place any restriction on where earth mining or oil and gas exploration can occur. Therefore, under the No Action Alternative, any landowner could pursue earth mining activities anywhere within the ECMSHCP area, regardless of habitat or connectivity. Landowners would also be free to pursue land development under base zoning (one dwelling unit per 5 acres) anywhere within the ECMSHCP area, or development at greater densities within the approximately 71,275 acres of RLSP "Open" lands located within the ECMSHCP area. Therefore, under the No Action Alternative, development would likely occur on a project-by-project or individual basis, with no overarching plan, which could result in a disjointed pattern of development.

The creation of impervious surfaces, in the form of access roads, footings, and foundations, would increase potential for stormwater runoff and soil erosion. Under the No Action Alternative, ground disturbing activities would still remain subject to permitting requirements.

The direct impacts of earth mining and oil and gas exploration and production are soil disturbance, habitat loss, noise, and loss of scenic views. These activities may be conducted day and night, and eventually lead to residential development on the site after operations have ceased.

Potential impacts to geology and soils under the No Action Alternative may result from an individual approach to agricultural, mining, and development activities. Lack of cohesive planning may lead to disjointed development, which may have an adverse impact on area geology and soils.

### 4.3.2 Alternative 2 – Issuance of ITPs for the ECMSHCP

Under this alternative, conservation planning and design provided by the ECMSHCP would direct development to certain areas of lower habitat value, while limiting development in other areas of higher habitat value. The general approach to landscape-level planning is systems thinking, for the purpose of maximizing resources such as open space, habitat, and connectivity while minimizing adverse impacts. Benefits would accrue on many levels to resources, habitat, and species, while still providing for development. Commercial and residential development are anticipated to be more compact, as would earth mining activities, oil and gas exploration and production, and agriculture uses on the approximately 45,000 acres designated by the ECMSHCP as compared to the No Action Alternative.

Concentrating the area available for future mining operations would limit adverse geologic and soil impacts resulting from off-road equipment, along with construction of access roads, structures, and infrastructure. Similarly, under Alternative 2, residential and commercial development would occur in a more targeted fashion, with landscape-level planning, thus concentrating the required excavation and grading work to more centralized areas and minimizing the sprawl of the attendant infrastructure. The 50-year integrated framework of the ECMSHCP provides targeted development, resulting in an overall smaller footprint, as compared to the No Action Alternative.

The creation of impervious surfaces, in the form of access roads, footings, and foundations, would increase potential for stormwater runoff and soil erosion. As discussed in Section 3.2.3, eastern Collier County consists mainly of poorly to very poorly drained soils, with hydric soils comprising approximately 61 percent of the ECMSHCP area. A coordinated planning approach to development contemplated under Alternative 2 is anticipated to result in less displacement and disturbance of soils, and avoidance of hydric soils, as compared to the No Action Alternative.

While both the No Action and Action Alternatives would involve displacement and disturbance of earth and soils, Alternative 2 is anticipated to reduce adverse impacts to geologic and soil resources in the ECMSHCP area as compared to the No Action Alternative.

## 4.4 WATER RESOURCES

This section addresses the potential environmental consequences of the No Action and ECMSHCP Alternative on wetlands, flowways, and water quantity and quality.

### 4.4.1 Alternative 1 – No Action

Under the No Action Alternative, owners of 5-acre ranchettes or larger developments would need to apply for SFWMD ERPs, and possibly Corps dredge and fill permits. Commercial developments would also occur with the no action and may conform to the base zoning development pattern (one residence per 5-acre platted lot). The road and infrastructure system needed to serve the 5 acre lots, and associated commercial developments, would be built in a rectangular grids, and would have few alignment alternatives. Therefore, it would have more unavoidable impacts to wetlands than the roads constructed under Alternative 2. Landowners choosing to participate in the RLSP and develop in SRAs would likely have less impacts to water resources due the current land use in the SRAs. Development in SRAs would also be higher density, and therefore would require less wetland fill and water resources.

According to the Florida Department of Health, about 30 percent of residences in Florida use individual wells for water supply and onsite wastewater treatment systems (septic systems). Well and septic systems are more common in lower-density residential areas throughout Florida. Under the No Action Alternative, some of the homes in the ECMSHCP boundary are anticipated to include individual well and septic systems. These water systems would require SFWMD well permits as well as Collier County septic system permit prior to construction.

Row-crop farming is currently the largest user of surface and ground waters in the ECMSHCP boundary. Under the No Action Alternative, current agricultural water uses and water management practices can be expected to continue in some areas.

Surface mining is also expected to occur with the No Action Alternative. Mining activities that affect water resources include dewatering of materials and use water to refine mined materials. Mining's effects to water resources are highly regulated by the SFWMD and require consumptive use permits specific to mining operations. Surface mining, and its effects to water resources, can occur over a broader area than in the ECMSHCP Alternative.

In summary, surface water resources, such as wetlands and flowways, will be adversely affected under Alternative 1. However, regulatory requirements will be applied to any actions affecting wetlands and surface waters on a case-by-case basis. Water and waste water treatment and distribution will be less centralized and more costly to regulate. Therefore, we anticipated significant effects to water resources under Alternative 1

### 4.4.2 Alternative 2 – Issuance of ITPs for the ECMSHCP

Under the Alternative 2, the Covered Activities (residential and commercial development, and earth mining) development plan leaves the regional flowways, described above, largely intact. This would be accomplished by concentrating the Covered Activities in areas that are currently row crops.

The residential and commercial development would have centralized water distribution, wastewater collection, and treatment services. The ECPO also plan to reuse wastewater for irrigation of landscapes in the Covered Activities areas. Because the Covered Activities would replace most of the row crop areas within the ECMSHCP boundary, and would reuse wastewater for irrigation, the Service anticipates that these aspects of Alternative 2 would use less surface and groundwater than the No Action Alternative and water quality is expected to be better than the No Action Alternative.

Surface mining under Alternative 2 would affect water resources in the same way as in the No Action Alternative. It would also be regulated by SFWMD in the same way. The possible locations for surface mining, and its effects on water resources, are more limited in the ECMSHCP than in the No Action Alternative.

The ECMSHCP includes hydrologic restoration of the Camp Keais Strand. This proposed restoration includes conversion of the row crop lands in the southern part of Camp Keais Strand to wetlands, and removal of a berm in the northern portion of the flow way to allow additional southward flow volumes. Okaloacoochee Slough and Corkscrew Marsh system would also remain largely intact in the Preserve Areas.

In summary, some wetlands will be adversely affected under Alternative 2. As in alternative 1, any affects to wetlands will require mitigation. However, the clustering of the higher-density developments in existing farmlands will reduce the impacts to wetlands by avoidance. Flow ways within the ECMSHCP boundary are expected to be improved by perpetual maintenance and restoration via removal of existing barriers to surface water flow. Water and waste water treatment and distribution will be centralized in the higher density areas. Therefore, we anticipate that effects to water resources will be mitigated to less than significant levels under Alternative 2.

## 4.5 AIR QUALITY

This section addresses the potential environmental consequences of the No Action and ECMSHCP Alternatives on air quality related to emissions resulting from development and habitat management.

### 4.5.1 Alternative 1 – No Action

Under the No Action Alternative, the short-term impacts from residential and commercial construction may temporarily increase particulate dust in the vicinity of construction projects. Mining activities are anticipated to create particulate dust daily that may drift away from the mine site depending on wind

conditions. The effects of construction and mining on air quality would be reviewed on a case-by-case basis, as necessary, by the FDEP.

Air pollutant emissions are expected to increase in Collier County, with or without the ECMSHCP in place, due to increased vehicle use over an expanded road network as the human population grows. All future development in the County is subject to existing air quality regulations. However, without the ECMSHCP, future development in Eastern Collier County could become more fragmented and spread out. More circuitous transportation routes would develop in order to accommodate the dispersed development, leading to emissions being spread out over the area. Increased trip lengths could increase air pollutant emissions relative to current conditions and those that would occur under Alternative 2. Therefore, this alternative could have an adverse effect on air quality.

Wildfire fuel management and other burning activities will continue to be carried out by individual property owners of 5-acre ranchettes (base zoning) under this alternative. Agricultural burns will also continue to be used extensively in row crop areas to remove dead plant matter from fields. Habitat restoration associated with the RLSP includes prescribed burning to maintain the habitat value of the RLSP's SSAs. Smoke and ash from burns will continue to significantly impact air quality in the burn areas and downwind areas. These effects are expected to be temporary. Effects of individual burning activities upon air quality would be reviewed on a case-by-case basis, as necessary by the FDEP.

In summary, air quality under Alternative 1 will continue to be significantly affected by human activities such as prescribed burns, construction, mining and vehicular traffic. These effects to air quality are short-lived.

### 4.5.2 Alternative 2 – Issuance of ITPs for the ECMSHCP

Under Alternative 2, the short-term impacts from residential and commercial construction may temporarily increase particulate dust in the vicinity of construction projects. Mining activities are anticipated to create particulate dust daily that may drift away from the mine site depending on wind conditions. The effects of construction and mining on air quality would be reviewed on a case-by-case basis, as necessary by the FDEP.

Air pollutant emissions are expected to increase in Collier County, with or without the ECMSHCP in place, due to increased vehicle use over an expanded road network as the human population grows. All future development in the County is subject to existing air quality regulations. The issuance of the ECMSHCP permit would decrease the amount of development fragmentation in the ECMSHCP area because the ECPO are planning compact communities which are largely self-contained. This type of community could lead to localized emissions around these communities. More self-contained development could result in reduced trip lengths relative to those which would occur if development was dispersed over a larger area, and would result in reduced air emissions overall. Therefore, although air emissions are anticipated to increase within the County, implementation of Alternative 2 is not expected to accelerate the rate of increase of air pollutant effects relative to Alternative 1.

Under Alternative 2, habitat restoration associated with the ECMSHCP would include prescribed burning to maintain the habitat value of the conservation lands. Smoke and ash from prescribed burns are expected to significantly impact air quality in the burn areas and downwind areas. These effects are expected to be temporary. For many decades the ECPO have reduced forest fuel loads, where needed, through such methods as prescribed burning and mechanical vegetation control, and they have installed fire breaks where needed. These are the most effective methods to reduce the potential for adverse impacts from unplanned burning, and are expected to continue for the duration of the ECMSHCP. Although lightning-induced fires are a natural occurrence, reduction of fuel loads may limit fire frequency and intensity. The ECMSHCP would educate new residents within the ECMSHCP Covered Activities area regarding the use and effects of prescribed fires. The effects of prescribed burning on air quality would be reviewed on a case-by-case basis, as necessary by the FDEP. The effects to air quality from prescribed burning and wildfires under the ECMSHCP Alternative are expected to be no greater than current effects of burning in the ECMSHCP area.

In summary, air quality under Alternative 2 is expected to be affected by human activities such as prescribed burns, construction, mining and vehicular traffic. These effects to air quality are short-lived. We anticipated that vehicle trip distances and durations will be reduced overall; thereby reducing the amount of vehicle emissions relative to Alternative 1. Additionally under Alternative 2, residences and businesses will be educated regarding the use and effects of prescribed fires. Therefore, the overall effects of Alternative 2 to air quality are expected to be significant, but less than Alternative 1.

## 4.6 CULTURAL RESOURCES

Adverse impacts to cultural resources are defined as any changes to a site, its boundaries, or contents that detract from its historical integrity or eligibility for listing on the NRHP. Federal agencies have a duty to consider potential impacts to cultural resources for actions that are determined to be “undertakings.” The USFWS decision to issue an ITP has been determined to be an undertaking. Commercial and/or residential development, timber harvesting, and other management operations can result in impacts to individual cultural resources, as well as resource groups.

Impacts to cultural resources can result from noncompliance with existing regulations intended to protect cultural resources. Cultural resource impacts fall under two categories: direct effects and indirect effects. Direct effects to historic properties include physical destruction of the property and damage, alteration, or removal of a portion of the historic property. Examples of activities resulting in direct effects to cultural resources include commercial and/or residential development, and any activities that disturb the soil, including felling of trees and clearing of land.

Indirect effects to cultural resources include longer-term loss of historic integrity from alterations, modifications, destruction, or removal of cultural resources. Such indirect effects may result from risk of fires caused by heavy equipment access, human destruction caused by increased access, ongoing degradation of subsurface deposits caused over time by unstable or shifting soils, and reforestation efforts. Potential impacts to cultural resources under all alternatives are viewed within this framework.

Secondary and cumulative effects can include loss of resources prior to the development of better research techniques, loss of interpretive value, and incremental loss of the cultural resource inventory due to development activities and natural processes. Alternatives that result in a larger amount of acreage available for activities not subject to federal or state historic preservation laws and regulations are likely to have greater cumulative negative impacts. Those alternatives subject to federal and state laws and regulations would lead to the identification and evaluation of resources, as well as consultation with affected parties, which could reduce potential cumulative and secondary effects.

### 4.6.1 Alternative 1 - No Action Alternative

The No Action Alternative does not include the issuance of ITPs or the implementation of the ECMSHCP program. Under the No Action Alternative, the agricultural, ranching, and other rural activities that have occurred historically throughout the ECMSHCP area could continue indefinitely throughout the ECMSHCP area.

In addition to traditional rural land uses, under the No Action Alternative, the ECPO could conduct residential or commercial development activities under base zoning (one dwelling unit per 5 acres) anywhere within the ECMSHCP area, or development at greater densities within the 71,275 acres of RLSP “Open” lands located within the ECMSHCP area. The ECPO could also conduct earth mining activities anywhere within the ECMSHCP area, since the RLSP does not place any restriction on where earth mining can occur. The No Action Alternative would leave open the option to develop 93,100 acres, Landowners, as they propose individual projects, would be required to comply with Florida cultural resource laws and consult with the SHPO to ensure that cultural resources would be protected from any future development impacts. The preservation and maintenance of these areas and habitats are anticipated to benefit South Florida’s cultural heritage and create opportunities for additional future conservation activities.

Landowners, as they propose individual projects, would be required to comply with Florida cultural resource laws and consult with the SHPO to ensure that cultural resources would be protected from any future development impacts. The preservation and maintenance of these areas and habitats are

anticipated to benefit South Florida's cultural heritage and create opportunities for additional future conservation activities. Overall, impacts to cultural resources would be mitigated to below significant levels under Alternative 1.

### 4.6.2 Alternative 2 – Issuance of ITPs for the ECMSHCP

The ECMSHCP area is located within the approximately 195,000-acre area covered by Collier County's RLSP, a voluntary program that allows participants to develop certain lands at densities higher than base zoning allows, in exchange for placing restrictions on the use of other lands within the RLSA. Under this alternative, only 45,000 acres of these lands could be developed. Moreover, the 45,000 acres of land available for development under the ECMSHCP would be located within areas that have relatively lower habitat values, and areas of higher habitat values would be preserved.

Under the ECMSHCP, approximately 107,000 acres would be designated for Preservation/Plan-Wide Activities and Very Low Density Use. Consistent with the RSLA program, future land use within the 107,000 acres could include conservation/preservation along with the types of agricultural, ranching, and other traditional rural land use activities that have occurred historically throughout the ECMSHCP area. ECPO members, as they propose individual projects, would be required to comply with Florida cultural resource laws and consult with the SHPO to ensure that cultural resources would be protected from any future development impacts. The preservation and maintenance of these areas and habitats are anticipated to benefit South Florida's cultural heritage and create opportunities for additional future conservation activities.

Landowners, as they propose individual projects, would be required to comply with Florida cultural resource laws and consult with the SHPO to ensure that cultural resources would be protected from any future development impacts. The preservation and maintenance of these areas and habitats are anticipated to benefit South Florida's cultural heritage and create opportunities for additional future conservation activities. Overall, impacts to cultural resources would be mitigated to below significant levels under Alternative 2.

## 4.7 VISUAL RESOURCES

### 4.7.1 Alternative 1 – No Action

Under the No Action Alternative, conservation lands included in the RLSP sending areas will remain visually intact; but may be smaller and/or more fragmented. Lands developed under the RLSP, in receiving areas, are likely to include modern development aesthetics practices including wildlife friendly lighting. Land owners not participating in the RLSP may develop their properties in a piecemeal manner visually similar to nearby Golden Gate Estates. Mining will change the visual resources to resemble existing mines in the ECMSHCP area. Agricultural lands are expected to remain visually similar to their current state.

### 4.7.2 Alternative 2 – Issuance of ITPs for the ECMSHCP

Under the ECMSHCP Alternative, residential and commercial development will incorporate water management lakes, berms, structural buffers, fencing, and directional and/or low-level lighting along the periphery of Covered Activities areas to visually separate developments from preservation areas, and minimizing the effects of light. Mining will change the visual resources to resemble existing mines in the ECMSHCP area. Preserved lands and undeveloped agricultural lands are expected to remain visually intact.

## 4.8 TRANSPORTATION

### 4.8.1 Scope of Analysis

The ECMSHCP area includes a network of roadways that support both regional connectivity and local access. Section 3.7 of this document describes existing condition of the roadway network. This section identifies the long-term operational changes likely to be associated with projected development within the ECMSHCP. Though the ECMSHCP area incorporates approximately 152,000 acres (237 square miles) of eastern Collier County, a wider area was selected to comprise the TAA. The TAA includes approximately

1,400 square miles, and fully incorporates the ECMSHCP area. See Appendix F for a depiction of the TAA relative to the ECMSHCP area and subject roadways.

The transportation changes associated with projected development within the ECMSHCPn was assessed by evaluating traffic produced by two alternative future conditions described in the ECMSHCP, the Existing Zoning and Proposed ECMSHCP Alternatives. The future condition for each alternative was evaluated through use of the Florida Department of Transportation District 1, Regional Planning Model (D1RPM) to estimate growth through year 2040 and a linear growth projection to extend the model projections from the base year (2010) to year 2060.

Each development scenario considered and the projected traffic conditions are described in the sections below.

### 4.8.2 Alternative 1 - No Action Alternative

The condition under the No Action Alternative draws from the ECMSHCP's description of a future condition in which available land present within the ECMSHCP is developed at a rate established by the existing zoning allowance (Base Zoning) of one housing unit per 5 acres. Developable land estimates taken from the "Florida 2060" report, depicted in Figure 1-2 of the ECMSHCP, were used to identify the total area within the ECMSHCP available for development. When intersected with the ECMSHCP area, the developable lands accounted for approximately 112,000 acres.

Socioeconomic data supporting D1RPM was modified to reflect the No Action Alternative (base zoning scenario) and a linear growth projection was performed to extend the analysis to 2060. Application of a base zoning scenario resulted in a total of approximately 30,000 residential development units and 4,100 jobs within the ECMSHCP area in year 2060. These figures reflect a 131 percent increase in residential development and 105 percent increase in employment within the TAA from the model's base year. The projected growth in population and employment were then used to project future traffic volumes. Table 4.9-1 presents AADT estimates for the major roadway network present within the TAA. Results show traffic volumes on most roadway segments would more than double over the 50 year time period. Overall, the No Action Alternative, if implemented, would result in a 300 percent (6 percent annual) increase in Vehicle Miles Traveled (VMT) within the TAA from the base year (2010) to 2060. Table 4.9-2 shows the effect that the projected VMT will have on roadway operations.

Appendix F includes the methodology used in development of the D1RPM for the No Action Alternative (base zoning scenario).

As shown in Table 4.9-1, most roadways within the TAA will operate at much higher volumes in the future No Action condition and would result in significant impacts to traffic and transportation. Additional roadway capacity will be required to support projected future travel demand in the area of the ECMSHCP.

### 4.8.3 Alternative 2 – Issuance of ITPs for the ECMSHCP

Alternative 2 draws from the description of a future condition in the ECMSHCP in which the Covered Activities area is developed in accordance with the ECMSHCP. Although a 50,000 acre envelope is identified within which up to 45,000 acres of covered activities may occur over a 50 year period (minus the acreage of the already permitted Ave Maria project for a total maximum of 39,973 acres of potential new development), the precise location and timing of these activities is not yet determined. Accordingly, the Town of Ave Maria was used as areference development to estimate future use. The Town of Ave Maria was selected as a development within Collier County representative of the type of use that would occur within the Covered Activities area. The density of development and employment rate observed in Ave Maria in D1RPM were identified and translated to the Covered Activities area defined in the ECMSHCP.

Socioeconomic data supporting D1RPM was modified to reflect the ECMSHCP Alternative and linear growth projection performed to extend the analysis to 2060. Implementation of Alternative 2 would result in 72,200 development units and 21,300 jobs within the Covered Activities area in year 2060. Figures that reflect a 165 percent increase in residential development and 126 percent increase in employment from conditions observed in the base year. Overall, Alternative 2 would result in a 339 percent (6.8 percent

annual) increase in VMT within the TAA from the base year (2010) to 2060. As discussed, Table 4.8-1 presents AADT estimates by roadway segment and Table 4.9-2 operating characteristics. Appendix F includes the methodology used in development of the D1RPM for Alternative 2.

**Table 4.8-1. Base and Projected Bi-directional volume Estimation**

| Corridor | Roadway Segment | 2010 Model AADT | | 2017 AADT | | 2060 No Action Alt (Base Zoning) | | | 2060 Alt 2 (ITP Issuance) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Segment Volume | Corridor Average | Segment Volume | Corridor Average | Segment Volume | Corridor Average | Percent Increase 2010-2060 | Segment Volume | Corridor Average | Percent Increase 2010-2060 |
| Everglades Blvd | I-75 to Golden Gate Blvd | 2,501 | 3,281 | 5,000 | 5,100 | 15,360 | 15,359 | 201.2% | 15,443 | 16,293 | 219.5% |
| | Golden Gate Blvd to CR 846 (Immokalee Rd) | 4,061 | | 5,200 | | 15,358 | | | 17,144 | | |
| SR 29 | I-75 to CR 858 (Oil Well Road) | 2,475 | 9,778 | 3,000 | 10,123 | 16,439 | 26,567 | 162.4% | 19,715 | 29,179 | 188.2% |
| | CR 858 (Oil Well Road) to1st St | 5,493 | | 7,800 | | 24,619 | | | 30,172 | | |
| | 1st St to Immokalee Dr. | 19,763 | | 17,800 | | 24,896 | | | 26,511 | | |
| | Immokalee Dr. to Lk Trafford Rd | 17,779 | | 17,700 | | 20,965 | | | 22,219 | | |
| | Lk Trafford Rd to CR 29A | 12,223 | | 13,800 | | 20,846 | | | 22,267 | | |
| | CR 29A to SR 82 | 16,808 | | 17,355 | | 41,536 | | | 46,045 | | |
| | SR 82 to Church Rd | 5,553 | | 6,200 | | 26,184 | | | 31,233 | | |
| | Church Rd to CR 832 | 4,459 | | 5,600 | | 33,714 | | | 36,454 | | |
| | CR 832 (Keri Rd) to Sears Rd | 4,261 | | 5,500 | | 31,794 | | | 33,308 | | |
| | Sears Rd to Helms Rd | 6,850 | | 5,600 | | 26,425 | | | 27,729 | | |
| | Helms Rd to Truck Route 29/80A | 11,894 | | 11,000 | | 24,817 | | | 25,313 | | |
| CR 846 (Immokalee Road) | I-75 to SR 29 | 13,917 | 4,897 | 7,400 | 3,467 | 22,028 | 11,585 | 234.2% | 27,504 | 13,510 | 289.7% |
| | SR 29 to Hendry County Line | 645 | | 1,900 | | 8,055 | | | 7,979 | | |
| | Collier County Line to CR 833 | 129 | | 1,100 | | 4,671 | | | 5,045 | | |
| CR 858 (Oil Well Road) | CR 846 to SR 29 | 6,650 | 3,523 | 5,100 | 2,800 | 27,341 | 14,642 | 422.9% | 30,885 | 16,022 | 472.2% |
| | SR 29 to Hendry Co Line | 396 | | 500 | | 1,943 | | | 1,158 | | |
| Camp Keais Road | Camp Keais Road between CR 858 and CR846 | 3,493 | 3,493 | 1,325 | 1,325 | 8,153 | 8,153 | 515.4% | 12,368 | 12,368 | 833.5% |
| Corkscrew Road | Ben Hill Griffin to Alico Rd | 8,778 | 5,121 | 3,600 | 3,525 | 11,956 | 13,726 | 289.4% | 12,508 | 14,324 | 306.4% |
| | Alico Rd to SR82 | 1,464 | | 3,450 | | 15,495 | | | 16,140 | | |
| Alico Road | Ben Hill Griffin to Corkscrew Rd | 1,102 | 1,102 | 7,400 | 7,400 | 31,164 | 31,164 | 321.1% | 31,451 | 31,451 | 325.0% |
| SR 82 | I-75 to Buckingham Rd | 33,680 | 19,168 | 32,000 | 22,054 | 115,749 | 78,568 | 256.2% | 116,728 | 81,388 | 269.0% |
| | Buckingham Rd to CR 884 (Colonial Blvd) | 28,439 | | 32,000 | | 105,200 | | | 106,133 | | |
| | CR 884 to Griffin Dr | 19,951 | | 26,000 | | 94,984 | | | 96,033 | | |
| | Griffin Dr to Daniels Pkwy | 13,754 | | 18,300 | | 79,329 | | | 80,517 | | |
| | Daniels Pkwy to Unsigned (Alabama Rd S) | 23,774 | | 28,500 | | 98,357 | | | 99,987 | | |
| | Unsigned to Mine Ent (Alexander Graham Bell Blvd) | 10,638 | | 12,200 | | 48,285 | | | 51,463 | | |
| | Mine Ent to Corkscrew Blvd | 11,551 | | 13,233 | | 46,354 | | | 54,007 | | |
| | CR 850 (Corkscrew Blvd) to SR 29 | 11,553 | | 14,200 | | 40,284 | | | 46,234 | | |
| Church Rd | Collier Co Ln to SR 29 | 734 | 734 | 450 | 450 | 4,529 | 4,529 | 906.4% | 6,143 | 6,143 | 1265.0% |
| CR 832 (Keri Rd) | SR 29 to CR 833 | 82 | 82 | 600 | 600 | 1,135 | 1,135 | 89.2% | 1,302 | 1,302 | 117.0% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Transportation Analysis Area Condition Summary | 304,850 | 330,813 | 1,087,965 | 229% | 1,157,139 | 250% |

AADT = Annual Average Daily Traffic; Alt = Alternative; ITP = Incidental Take Permit

**Table 4.8-2. Projected Roadway Volume to Capacity Ratio, Year 2060**

| Corridor | Roadway Segment | 2060 | |
|---|---|---|---|
| | | Volume to Capacity No Action Alt (Base Zoning) | Volume to Capacity Alt 2 (ITP Issuance) |
| Everglades Blvd | I-75 to Golden Gate Blvd | 1.24 | 1.25 |
| | Golden Gate Blvd to CR 846 (Immokalee Rd) | 0.93 | 1.05 |
| SR 29 | I-75 to CR 858 (Oil Well Road) | 0.91 | 1.09 |
| | CR 858 (Oil Well Road) to1st St | 1.30 | 1.60 |
| | 1st St to Immokalee Dr | 1.45 | 1.55 |
| | Immokalee Dr to Lk Trafford Rd | 1.79 | 1.89 |
| | Lk Trafford Rd to CR 29A | 1.71 | 1.83 |
| | CR 29A to SR 82 | 2.51 | 2.78 |
| | SR 82 to Church Rd | 0.87 | 1.04 |
| | Church Rd to CR 832 | 1.76 | 1.90 |
| | CR 832 (Keri Rd) to Sears Rd | 1.66 | 1.74 |
| | Sears Rd to Helms Rd | 1.59 | 1.68 |
| | Helms Rd to Truck Route 29/80A | 1.76 | 1.80 |
| CR 846 (Immokalee Road) | I-75 to SR 29 | 0.78 | 1.04 |
| | SR 29 to Hendry County Line | 0.49 | 0.48 |
| | Collier County Line to CR 833 | 0.29 | 0.32 |
| CR 858 (Oil Well Road) | CR 846 to SR 29 | 1.14 | 1.30 |
| | SR 29 to Hendry Co Line | 0.12 | 0.07 |
| Camp Keais Road | Camp Keais Road between CR 858 and CR846 | 0.45 | 0.69 |
| Corkscrew Road | Ben Hill Griffin to Alico Rd | 0.44 | 0.46 |
| | Alico Rd to SR82 | 1.14 | 1.19 |
| Alico Road | Ben Hill Griffin to Corkscrew Rd | 1.55 | 1.57 |
| SR 82 | I-75 to Buckingham Rd | 2.01 | 2.03 |
| | Buckingham Rd to CR 884 (Colonial Blvd) | 1.65 | 1.66 |
| | CR 884 to Griffin Dr | 2.31 | 2.33 |
| | Griffin Dr to Daniels Pkwy | 1.92 | 1.96 |
| | Daniels Pkwy to Unsigned (Alabama Rd S) | 2.38 | 2.43 |
| | Unsigned to Mine Ent (Alexander Graham Bell Blvd) | 1.19 | 1.26 |
| | Mine Ent to Corkscrew Blvd | 1.14 | 1.32 |
| | CR 850 (Corkscrew Blvd) to SR 29 | 2.19 | 2.50 |
| Church Rd | Collier Co Ln to SR 29 | 0.27 | 0.37 |
| CR 832 (Keri Rd) | SR 29 to CR 833 | 0.07 | 0.08 |

Similar to the No Action Alternative, under Alternative 2, most roadways within the TAA will operate at much higher volumes in the future and would result in significant impacts to traffic and transportation. Additional roadway capacity will be required to support projected future travel demand in the ECMSHCP area. The ECMSHCP increases are anticipated to be greater than those of the No Action Alternative

# 4.9 BIOLOGICAL RESOURCES

## 4.9.1 Scope of Analysis

Under the ECMSHCP, approximately 107,000 acres would be designated for Preservation/Plan-Wide Activities and Very Low Density Use. Activities that could occur on the 107,000 acres would be deed restricted and no more intensive than the types of agricultural, ranching, and other traditional rural land use activities that have occurred historically throughout the ECMSHCP area. The 107,000-acre area also includes areas that function as regional wildlife corridors, potentially allowing for wildlife movement between publicly owned conservation lands in Southwest Florida. The deeds associated with the land parcels within the 107,000 acres would be designated for either continuation of current land use, very low density development, or possibly conservation, as development within the 45,000 acre Covered Activities area occurs.

The ECMSHCP proposes clustering and directing development toward areas of less valuable habitat, while avoiding wildlife dispersal corridors that provide linkages between existing public conservation lands. Under the ECMSHCP, the form of "take" anticipated to occur would be incidental to otherwise lawful activities and would generally be limited to unintentional "harassment" (e.g., a development activity that unintentionally annoys a species to the extent that normal behavioral patterns are disrupted) or "harm." It is anticipated that no intentional take would occur. The ECMSHCP is directed toward landscape-scale planning for future development, avoiding piecemeal development that could fragment valuable habitat and would also provide contributions to the Marinelli Fund for species conservation activities to benefit the Florida panther and other covered species (see Section 2.7 and Chapter 9 of the ECMSHCP).

## 4.9.2 Ecological Communities

As shown in Table 3.8-1, the ECMSHCP area comprises a variety of ecological community types and land cover/land use classes that can be categorized as follows: agriculture, other developed land uses, undeveloped uplands; forested wetlands, marsh wetlands; and water. Upland land uses and ecological communities cover approximately 61 percent of the ECMSHCP area, while wetlands and surface waters cover approximately 39 percent of the ECMSHCP area.

### *4.9.2.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, the ECMSHCP would not be implemented as proposed. Some landowners may opt to develop lands according to base zoning. Ecological community types and land cover/land use classes would likely change incrementally as a result of future piecemeal development expected under base zoning. And the lack of additional planned preservation areas within the ECMSHCP area. As developed areas expand, the acreage of undeveloped uplands and agriculture likely would be reduced. Wetland acreage also may be reduced; however, the loss of wetland habitats would be minimized by existing wetland regulations and associated permitting and mitigation requirements. Because the majority of the ECMSHCP area is used for agriculture, and these lands no longer support natural communities, development conducted under the RLSP would likely occur mainly on agricultural lands and would have lesser impacts on natural ecological communities. Accordingly, direct and indirect impacts on ecological communities from development within the ECMSHCP area under the No Action Alternative are expected to significantly impacts to existing ecological communities.

### *4.9.2.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, the ECMSHCP would be implemented and the acreages covered by the ecological community types and land cover/land use classes that currently exist within the ECMSHCP area would likely change minimally as a result of future planned development within the ECMSHCP area. The areas designated for Covered Activities would predominantly be located on agricultural lands, which no longer support natural ecological communities. As these areas are developed, the acreages of agriculture land would be reduced, and relatively small areas of undeveloped uplands also may be reduced. The acreages of wetland communities may be reduced slightly; however, the loss of wetland habitats would be minimized by existing wetland regulations and associated permitting and mitigation requirements. Because the majority of the ECMSHCP area currently is used for agriculture and development associated

with Covered Activities predominantly would occur on agricultural lands, this alternative would have limited impacts on natural communities. Overall, direct and indirect effects on ecological communities from Alternative 2 are expected to have significant impacts, but less than the No Action Alternative.

### 4.9.3 General Wildlife

Wildlife species that occur within the ECMSHCP area include species characteristic of the types of undeveloped habitats present within the ECMSHCP area and elsewhere in southwest Florida, including wetland forests, marshes, and upland forests and prairies, as well as species that have adapted to use other habitats associated with crop cultivation, orchards, pasture, and other developed lands. These species are typical of those found in similar habitats of southwest Florida.

#### *4.9.3.1 Alternative 1 - No Action Alternative*

As described in Chapter 2, under the No Action Alternative, no ITPs for the covered species would be issued, and the ECMSHCP would not be implemented as proposed. As a result, general wildlife would not have the benefit of using habitats preserved for the protection of the covered species. Historical land uses would continue, and residential or commercial development activities, including earth mining, could proceed under the base zoning in the RLSA's open lands that have not been designated as SSAs. This development in the RLSA's open lands may occur with no predefined development pattern, ecological monitoring, or preservation of conservation areas. Potential impacts on general wildlife from disjointed development and lack of planned conservation areas within the ECMSHCP area would have a substantial effect on general wildlife. Landowners may also opt to participate in the RLSP and develop within SRAs. Because the SRAs are located primarily on agricultural land where natural habitats already are absent, development within the SRAs would have lesser effects to wildlife that base zoning development. Under Alternative 1, we expect that land development will include a mixture of base zoning and RLSP actions. This mixture of development planning would have significant impacts to wildlife in the ECMSHCP area.

#### *4.9.3.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

The ECMSHCP proposes 50,175 acres of land for Covered Activities, within which up to 45,000 acres of residential/commercial development and/or earth mining could occur. The ECMSHCP was designed to work in concert with the current RLSP and would also work with the proposed RLSP amendments.

Under the ECMSHCP, approximately 107,000 acres would be designated for Preservation/Plan-Wide Activities and Very Low Density Use. Activities that could occur on the 107,000 acres would be deed restricted and no more intensive than the types of agricultural, ranching, and other traditional rural land use activities that have occurred historically throughout the ECMSHCP area. The 107,000-acre area also includes areas that function as regional wildlife corridors, potentially allowing for wildlife movement between publicly owned conservation lands in Southwest Florida. The deeds associated with the land parcels within the 107,000 acres would be designated for either continuation of current land use, very low density development, or possibly conservation, as development within the 45,000 acres occurs. Therefore, direct impacts on general wildlife under Alternative 2 would likely be significant, but less than Alternative 1.

### 4.9.4 Wildlife Habitat Linkages and Corridors

#### *4.9.4.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, the ECMSHCP program would not be implemented as proposed. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required. Landowners can opt to develop their lands according to base zoning. Alternatively, landowners can voluntarily participate in the RLSP. Potential consequences from developing according to base zoning include disjointed development and the absence of planned conservation areas within the ECMSHCP area; which could adversely impact wildlife. Wildlife corridors would not be preserved and linkages to allow for wildlife movement and dispersal between public conservation lands would not be preserved. Development under the RLSP is expected to facilitate wildlife linkages and habit corridors in the RLSP's designated SSA. Because participation in the RLSP is

voluntary, we expect that some land owners will opt out of the RLSP thereby leaving some key wildlife corridors vulnerable to significant impacts.

#### *4.9.4.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

The ECMSHCP would assure preservation of some wildlife dispersal corridors that provide important linkages between existing public lands that conserve habitat for the Florida panther and other wildlife species. These areas would function as regional wildlife corridors, allowing for wildlife movement between publicly owned conservation lands in southwest Florida, such as the FPNWR, BCNP, CREW, OSSF, Dinner Island Ranch Wildlife Management Area, and Spirit of the Wild Wildlife Management Area. Some existing wildlife corridors on agricultural lands would be narrowed by planned development; particularly the northwest corridor leading from CREW to OSSF, and the corridor from FPNWR to Owl Hammock north of Oil Well Road and west of State Road 29. Despite the narrower cross section of these two corridors proposed in Alternative 2 these corridors will be preserved and maintained to encourage wildlife movements towards planned wildlife under passes. The conservation and management of these habitat linkages would provide important ecological benefits for the Florida panther, other covered species, and other general wildlife. Preservation of permanent wildlife corridors over time would provide linkages to public conservation lands that would benefit the movement and dispersal of many wildlife species. Under Alternative 2, there would be significant impacts to wildlife corridors; but these impacts would be less than Alternative 1.

### 4.9.5 Migratory Birds

#### *4.9.5.1 Alternative 1 - No Action Alternative*

The No Action Alternative would include current (baseline) zoning of individual 5-arcre residential "ranchettes" plus RLSP – based development planning. Projects developed under the RLSP would include conservation easements applied to lands in SSAs; which would benefit migratory birds. It is not anticipated that individual lot owners would implement migratory bird conservation actions under base zoning. Since participation in the RLSP is voluntary, the No Action Alternative is expected to lead to more fragmented habitats for these species. While the No Action Alternative is expected to have effects, they are expected to be below significant.

#### *4.9.5.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

The ECPO propose to implement measures from the *Nationwide Standard Conservation Measures* (Service 2016) regarding migratory bird conservation. Based on the large scale of ECMSHCP's Covered Activities, each project requires flexibility to establish appropriate project-specific avoidance measures (e.g., timing of impacts within a project boundary). The relatively low proportion of migratory bird habitat within the ECMSHCP's Covered Activities area minimizes the potential for impacts to migratory birds. The ECMSHCP's preserve areas include native habitats that are valuable to migratory birds. Land management practices and habitat restoration within preserves is expected to improve this value. In addition, the ECMSHCP preserve areas are less fragmented than the habitat in the No Action Alternative. The ECMSHCP does not anticipate direct and purposeful take of migratory birds, their eggs, or their nests. If unforeseen circumstances require a MBTA permit, the ECPO would coordinate with the Service. Therefore, the effects of Alternative 2 are expected to be below significant, and less than Alternative 1.

### 4.9.6 Bald Eagles

#### *4.9.6.1 Alternative 1 - No Action Alternative*

The No Action Alternative would include current (baseline) zoning of individual 5-arcre residential "ranchettes"; as well as commercial development, mining and associated infrastructure (roads, utilities). Two bald eagle nests occur within the ECMSHCP area. Should bald eagles nest near an individual's property or other development site, the property owner can avoid incidental take by adhering to the Service guidelines, and providing a minimum 200-meter (660-foot) buffer between construction activities and the eagle nest. If it is impractical to observe a 200-meter buffer around a nest tree, the property

owner can coordinate with the Service and apply for an eagle take permit. The Migratory Bird Division of the Service would advise the property owner on how best to proceed in the event an eagle permit is deemed necessary. Due to the small number of bald eagle nests in the ECMSHCP area and because most people choose to follow the guidelines, the impact of the No Action Alternative is expected to be below significant.

#### *4.9.6.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

The two bald eagle nests inside the ECMSHCP boundary are within areas to be permanently preserved; and five eagle nests are documented within a mile of the ECMSHCP boundary. However, the applicants are not seeking incidental take coverage for bald eagle for the following reasons: 1) bald eagle nests typically have not occurred within the Covered Activities areas of the ECMSHCP, presumably due to the general lack of suitable nesting sites in previously cleared agricultural areas and extensive areas of suitable nesting sites nearby; 2) should bald eagles nest within an individual project area when Covered Activities are being implemented, the permittees can almost certainly avoid incidental take by adhering to the Service guidelines, and providing a minimum 200-meter (660-foot) buffer between construction activities and the eagle nest; and 3) if it is impractical to observe a 200-meter buffer around a nest tree, the permittee can coordinate with the Service and apply for an eagle take permit. The Migratory Bird Division of the Service would advise the ECPO on how best to proceed in the event an eagle permit is deemed necessary. The Service's eagle disturbance permit process is further described at the following internet resource: https://www.fws.gov/southeast/our-services/permits/eagles/.

The impact of the ECMSHCP Alternative is expected to be below significant, and less than the No Action Alternative.

## 4.10 FEDERALLY LISTED AND CANDIDATE SPECIES

### 4.10.1 Florida Bonneted Bat

As previously discussed in Chapter 3, the FBB occurs within a restricted range and in low abundance. Roosting habitat includes all types of forest and other areas with large or mature trees or other areas with suitable roost structures, primarily mature or large live or dead trees, tree snags, and trees with cavities, hollows, or crevices. Foraging can occur up to 15 miles or more from roost sites. Habitat loss and alteration in forested and urban areas are substantial threats to the FBB. The ECMSHCP area is located within the FBB Consultation Area and Focal Areas.

#### *4.10.1.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, section 7 consultations for the covered species would be conducted on a case-by-case basis when a federally-authorized action requires an ITS; or for non-federal actions, issued an ITP after applying for an HCP. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required, with no predefined development pattern or preservation of conservation areas if conducted according to base zoning. Potential impacts from future disjointed development and the absence of planned conservation areas within the ECMSHCP area could adversely impact the FBB due to reductions in forest areas that provide roosting habitat. Alternatively, landowners could opt to develop under the RLSP, which would include preservation of lands in the SSAs. Under the No Action Alternative, direct and indirect impacts on the FBB likely would result from development and the associated loss of roosting and foraging habitat. Possible take in the form of harassment or harm due to habitat loss and disturbance during development could occur. The overall impact on the FBB under this alternative would likely be adverse.

#### *4.10.1.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Possible take in the form of harassment or harm due to habitat loss and disturbance during development could occur. Roosting habitat loss within the ECMSHCP area is estimated to be approximately 50 percent. However, this loss would occur in small, fragmented, low-quality habitats within larger agricultural areas. This loss would be offset by the permanent preservation of approximately 43 percent of the ECMSHCP area containing large contiguous forested systems that would provide roosting habitat,

interspersed with open area that would provide foraging habitat (approximately 16 percent of the ECMSHCP area). As noted in the discussion of potential construction impacts on the FP in Section 4.2.1.1.1 of the ECMSHCP, clearing of limited areas of potential roost trees for the FBB in conjunction with Covered Activities would be carried out in the dark to avoid and minimize potential direct harm to the FBB. The FBB utilizes a wide variety of habitats for foraging, and the forest habitats required for roosting would be protected in preservation areas. More extensive forest areas would be preserved and restored under this alternative and would be expected to accommodate the roosting habitat needs of bats displaced from the less expansive development areas. Under Alternative 2, the ECPO would avoid and minimize potential adverse impacts on the FBB, and habitat preservation and restoration are expected to offset potential adverse impacts. Thus, direct and indirect adverse impacts on the FBB under Alternative 2 are expected to be adverse, but less adverse than Alternative.

### 4.10.2 Audubon's Crested Caracara / Northern Crested Caracara

As previously discussed in Chapter 3, the Florida population of the ACC is isolated and habitat specific, preferring improved pasture. The ACC appears to be using pastures, ditches, and impounded wetlands as habitat, which have replaced their historical habitat. The ECMSHCP area falls within the USFWS Consultation Area for the ACC. In addition, a communal roost, or "gathering area" has been identified in the north-central portion of the ECMSHCP area, and three ACC nest locations have been identified in the ECMSHCP area.

#### *4.10.2.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, ITSs for the covered species would be issued on a case-by-case basis when a federally-authorized action requires an ITS; or for non-federal actions, issued an ITP after applying for an HCP. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required, with no predefined development pattern or preservation of conservation areas if conducted according to base zoning. Potential impacts from future disjointed development and the absence of planned conservation areas within the ECMSHCP area could adversely impact the ACC due to reductions in areas that provide habitat. Alternatively, landowners could opt to develop under the RLSP, which would include preservation of lands in the SSAs. The three known ACC nest locations and the communal roost within the ECMSHCP area might not be protected from development. Under the No Action Alternative, direct and indirect impacts on the ACC, which could occur because of the loss of nesting and foraging habitat, potentially would be adverse.

#### *4.10.2.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Indirect take in the form of harassment would occur due to ACC habitat loss during development or land management activities. Approximately 5 percent of the Covered Activities areas within the ECMSHCP area are considered core habitat for the ACC. Potentially suitable habitat in more than 10 percent of the ECMSCHP area would be preserved. Permanent losses of habitat would be mitigated through restoration and perpetual preservation, resulting in no net loss of ACC habitat. Two of the three known ACC nest locations and the communal roost area within the ECMSHCP area are in preservation areas. One of the nest locations is largely surrounded by areas designated for Covered Activities, and therefore is likely to be impacted by development. Under Alternative 2, the potential for adverse impacts on the ACC due to the loss of a nesting habitat would be offset through preservation and restoration, resulting in no net loss of ACC habitat. Thus, direct and indirect adverse impacts on the ACC are expected to be adverse, but less adverse than Alternative 1.

### 4.10.3 Wood Stork

As previously discussed in Chapter 3, USFWS recognizes the area within 18.6 miles of a WS colony as a CFA (USFWS 2014a). The ECMSHCP area is located within the CFA of at least six active WS colonies, three of which are located within the ECMSHCP area. Wetlands are heavily used for nesting and foraging. WS nesting habitat consists of mangroves, cypress, and various other live and dead shrubs or trees located in standing water or on islands surrounded by open water. The primary cause of the WS decline in the United States is the loss of wetland habitats or function, resulting in reduced prey availability.

#### *4.10.3.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, section 7 consultations for the covered species would be conducted on a case-by-case basis when a federally-authorized action requires an ITS; or for non-federal actions, issued an ITP after applying for an HCP. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required, with no predefined development pattern or preservation of conservation areas if conducted according to base zoning. Potential impacts from future disjointed development and the absence of planned conservation areas within the ECMSHCP area could adversely impact the WS due to reductions in areas that provide habitat. Alternatively, landowners could opt to develop under the RLSP, which would include preservation of lands in the SSAs. Under the No Action Alternative, direct and indirect adverse impacts on the WS, resulting from development and the associated loss of suitable wetland nesting and foraging habitat within the ECMSHCP area, potentially would be adverse. However, the Corps and the State typically require some form of mitigation for wetland impacts. In most cases, the mitigation would offset impacts to WSs. Therefore, we anticipate that Alternative 1 would have insignificant effects to the WS.

#### *4.10.3.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Take in the form of harassment has the potential to occur as a result of human activity and noise associated with construction and mining activities. The WS colonies and the majority of potentially suitable habitat found within the ECMSHCP area occur within land designated for Preservation/Plan-wide Activities and Very Low Density Use under the ECMSHCP. Within the areas designated for Covered Activities, wetland acreage is less than approximately 2 percent of the ECMSHCP area as compared to approximately 34 percent of native wetland areas designated for Preservation/Plan-wide Activities and Very Low Density Use. Because the Covered Activity areas have limited potential foraging habitat, and the nesting colonies are located in areas designated for preservation/plan-wide activities and very low density use, the potential for take is unlikely. Under Alternative 2, direct and indirect adverse impacts on the WS are expected to be below significant because the Covered Activity areas offer limited foraging habitat, and nesting colonies are located in areas designated for preservation and low density use. Alternative 2 includes hydrologic enhancement to the Camp Keais Strand flow way; which is used by foraging WS. Therefore, we believe that Alternative 2 will benefit WS in the ECMSHCP boundary.

### 4.10.4 Red-Cockaded Woodpecker

As previously discussed in Chapter 3, RCW populations are resistant to environmental and demographic variation but highly sensitive to the spatial arrangement of habitat. They require open pine woodlands with large old pines for nesting and roosting. The southwestern portion of the ECMSHCP area falls within the FWS Consultation Area for the RCW, and no active RCW clusters have been documented within the ECMSHCP area, although several active clusters have been documented 7 miles or more south of the ECMSHCP area.

#### *4.10.4.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, section 7 consultations for the covered species would be conducted on a case-by-case basis when a federally-authorized action requires an ITS; or for non-federal actions, issued an ITP after applying for an HCP. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required, with no predefined development pattern or preservation of conservation areas if conducted according to base zoning. Potential impacts from future disjointed development and the absence of planned conservation areas within the ECMSHCP area could adversely impact the RCW due to reductions in areas that provide habitat. Alternatively, landowners could opt to develop under the RLSP, which would include preservation of lands in the SSAs. Although the RCW is not known to inhabit the ECMSHCP area currently, future disjointed development and the absence of planned conservation areas within the ECMSHCP area could indirectly impact the RCW by precluding its potential dispersal into the limited habitat within the ECMSHCP area. Under the No Action Alternative, potentially significant direct impacts on the RCW from development within the ECMSHCP area are unlikely because no clusters are known to exist within the area and potential habitat for the RCW is fragmented and limited in extent. Therefore, direct and indirect impacts on the RCW are expected to be insignificant.

#### *4.10.4.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

No RCW clusters are known to occur within 7 miles of the Covered Activities areas, and the available habitat within these areas is fragmented and limited in extent. Thus, take is unlikely, although it may be possible in the future if chance dispersal events from nearby state and federal lands occur into the ECMSHCP area. Pine flatwoods cover less than approximately 6 percent of the ECMSHCP area, and approximately 14 percent of this habitat occurs within the Covered Activities areas. Thus, suitable RCW habitat, if present outside these areas, would be preserved or restored. No RCW colonies are known to exist on or near the ECMSHCP area, and potential habitat within the area is fragmented and limited in extent, and will be preserved, restored, or managed to provide for future dispersal of the RCW. Under Alternative 2, direct and indirect impacts are expected to be insignificant.

### 4.10.5 Florida Panther

As previously discussed in Chapter 3, the FP has occurred within the ECMSHCP area for more than three decades. Habitat of the FP is an extensive landscape composed of a mix of natural, semi-natural, and agricultural uses. Highest ranking habitats are pinelands, upland hardwood forests, hardwood swamps, and cypress swamps. The current range of the FP is south of the Caloosahatchee River, and the area has been divided into three zones. The Primary Zone is defined as lands essential to the long-term viability and survival of the FP; the Secondary Zone is defined as natural and disturbed lands in southwest Florida that may be important to transient sub-adult male panthers and have the potential to support an expanding panther population; and the Dispersal Zone is defined as a small wildlife corridor east of LaBelle, Florida, intended for protection to facilitate long-term movements of panthers out of south Florida and into central Florida north of the Caloosahatchee River. Females consistently select den sites in areas with extremely dense understory vegetation. Primary and Secondary Panther Zones are present in the ECMSHCP area, which represent 5.2 percent and 4.3 percent, respectively, of the total area of these zones. Approximately 53 percent of the ECMSHCP area is adult breeding range habitat as modeled by Frakes et al. (2015), and these habitats comprise approximately 5.85 percent of total FP adult breeding range habitat modeled south of the Caloosahatchee River.

The FPNWR and BCNP, which border the ECMSHCP area to the south, are public conservation lands that support the core population area for the FP. The OSSF that borders the ECMSHCP area to the north and east is heavily utilized by panthers, and serves as a landscape linkage in a panther dispersal corridor leading to the Caloosahatchee River and then northward into central Florida. The primary pathways, or corridors, likely to be used by FP in the vicinity of the ECMSHCP area are Okaloacoochee Slough between BCNP and OSSF, and Camp Keais Strand between FPNWR and the CREW. Threats to the FP include habitat loss, panther-vehicle collisions, decreases in genetic diversity due to isolation, reduced population size and associated inbreeding, and panther-human interactions.

#### *4.10.5.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, section 7 consultations for the covered species would be conducted on a case-by-case basis when a federally-authorized action requires an ITS; or for non-federal actions, issued an ITP after applying for an HCP. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required. Development conducted according to base zoning in the RLSA open areas will comply with the 1 residence per 5-acre platted grid. The base zoning scenario does not include predefined development phasing or landscape-scale habitat preservation. Potential impacts from future disjointed development and the absence of planned conservation areas could adversely impact the FP by fragmenting movement corridors and eliminating FP habitat. Alternatively, landowners could opt to develop under the RLSP, which would include landscape-scale preservation of lands in the SSAs, and clustering of development into the SRAs. Development actions consistent with the RLSP are expected to be less harmful than those conducted according to base zoning.

Under the No Action Alternative, take of the FP in the form of harassment could occur during development, construction, mining, land management, and post-development activities. Direct harm to the FP is not anticipated. However, indirect harm (harm occurring later in time) could include loss of habitat associated with land clearing and increased development, and planned roadway improvements in

the area would increase the potential for panther-vehicle collisions and panther-human interactions. Direct and indirect effects on the FP from development include permanent loss and fragmentation of habitat that supports panthers and their prey, as well as harassment from construction and post-construction human activities. Due to the lack of comprehensive planning in areas developed under base zoning, habitat loss that would result from development under base zoning would not be minimized.

**Construction Disturbance**
Under the No Action Alternative, construction activities and associated disturbance of the FP from noise, light, and general construction activity may be more widespread than allowed under the ECMSHCP due to option for base zoning. The duration and scale of potential adverse effects may be limited as construction progresses from one area to another. FPs may be partially habituated to noise and human disturbance from agricultural operations in areas where much of the residential/commercial development would occur, so direct impacts from construction in these areas would be similar to impacts from ongoing land activities and likely would be temporary. FP may temporarily avoid these locations, but are expected to return and resume normal behavior in agricultural and natural areas following construction. Indirect impacts from reduced habitat availability could occur if FP or their prey reduces their use of adjacent habitats because of post-construction human activities associated with development. Construction activities may not be limited to daylight hours to minimize light and noise effects on the FP, especially at night when the FP is most active.

**Earth Mining**
Under the No Action Alternative, earth mining could result in the permanent loss of potentially suitable feeding and dispersal habitat, direct disturbance from mining activities, and indirect effects from road mortality due to vehicle collisions and post-mining human activities. The post-mining landscape may become lower-value FP habitat, resulting in additional habitat loss for the species. Mining operation could occur during both day and night periods, and vehicle operations may occur during nighttime as well as daytime, increasing the potential for panther-vehicle collisions. In consultation with federal agencies and applicants, the Service typically requests, and applicants usually agree, that haul trucks not operate outside of the mining site at night.

**Panther-Vehicle Collisions**
Existing roadways in the vicinity of the ECMSHCP area include state highways, county roads, and local roads, and I-75 passes just to the south of the ECMSHCP area. The ECMSHCP area does not include the existing state and county roadway network. Avoidance and minimization of environmental impacts resulting from improvements to the transportation network are the responsibility of FDOT and the Collier County Metropolitan Planning Organization, together with state and federal environmental regulatory agencies.

All roadways within the TAA currently operate under capacity (see Section 3.7). Roadways predicted to experience congestion in 2040 are CR 858, CR 846, and SR 29 north of CR 846. FP mortality has been documented along the segments of SR 29, CR 846, and CR 858 that transect areas of highest use by the FP and along other roadways within and outside the ECMSHCP area (Figure 4.10-1). Most records of FP dens in the ECMSHCP area are south of CR 858 within 2 to 3 miles on either side of SR 29 north of the FPNWR and BCNP. Historically, FP road mortality has been relatively high in Collier County; however, wildlife underpasses have greatly reduced the risk of panther-vehicle collisions, as have administrative actions such as reduction of nighttime speed limits. County and state roadway improvements are currently planned for SR 29 and SR 82; the improvements include increasing capacity by widening from two to four lanes. Increased capacity and widening would increase the potential for panther-vehicle collisions in the area. See Section 4.8 for a discussion of potential traffic impacts from these improvements. Under the No Action Alternative, an increase in the number of trips per day is expected to increase FP mortality from vehicle strikes.

**Panther-Human Interactions**
Under the No Action Alternative, associated increases in population and human activity would increase the potential for adverse panther-human interactions. Under the base zoning scenario, lower development density would be less of a deterrent to panther movement than more concentrated development. This, in turn, would increase the likelihood of panther-human interactions to a level similar to what has occurred in the adjoining Golden Gate Estates. Landowners opting to participate in the RLSP

would incorporate higher development density by clustering development in SRAs. FPs are known to avoid densely-developed areas. Therefore, we believe the risk of human-panther interactions will be less in the SRAs than in base zoning developments.

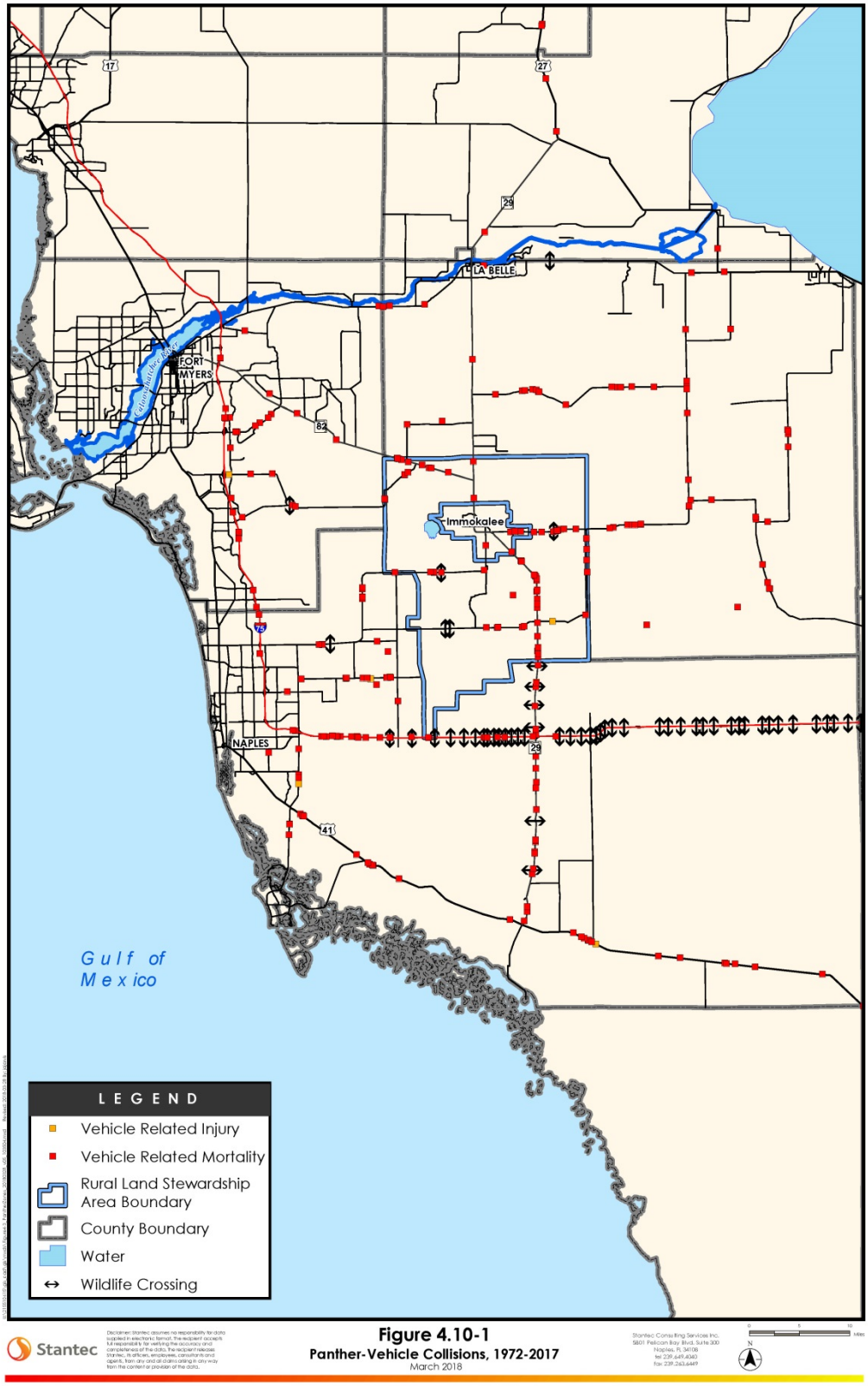



**Figure 4.10-1. Panther-Vehicle Collisions, 1972-2017**

**Summary**
Under the No Action Alternative, there could be potentially significant direct and indirect impacts on the FP because future development, if compliant with base zoning, would be disjointed. Base zoning would not contribute to the preservation of wildlife corridors or enhance permanent linkages between existing public conservation lands. Potential impacts from future disjointed development and the absence of planned conservation could adversely impact the FP due to the loss of a variety of habitats on which it depends, habitat fragmentation, lack of planned preservation of wildlife corridors to provide permanent linkages between existing public conservation lands, disturbance due to construction and earth mining, and direct harm from panther-vehicle collisions. Landowners voluntarily opting to participate in the RLSP would be allowed to build at a higher density than base zoning in the SRAs, in exchange for preserving higher-valued panther habitats in SSAs. Under the No Action Alternative, we anticipate that direct and indirect impacts to the FP would adversely affect the FP.

#### *4.10.5.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Take of the FP in the form of harassment could potentially occur during ECMSHCP site development, construction, mining, land management, and post-development activities. Direct harm to the FP is not anticipated from implementation of the ECMSHCP; however, there could be loss of habitat in Covered Activities areas associated with land clearing and increased development, and planned roadway improvements in the area would increase the potential for panther-vehicle collisions and panther-human interactions. Land management activities could impact panthers in a manner similar to residential/commercial construction activities such as by causing temporary and permanent avoidance of development and land management activity areas. However, extensive forested areas would be preserved and restored under this alternative, and landscape-scale FP habitat corridors would be maintained, providing linkages to allow for FP movement and dispersal between public conservation lands and other habitat areas.

**Habitat Loss**
As discussed in the ECMSHCP, Section 4.2.1.1.1, direct and indirect effects on the FP from development include permanent loss and fragmentation of habitat that supports FP and prey species, and harassment from construction and post-construction human activities. These adverse effects can be partially offset by habitat compensation. Some habitat loss would result from the Covered Activities, but this loss would be concentrated, clustered, and directed away from most high- value habitats by focusing development within already disturbed habitats. Under the ECMSHCP, most lands consistently used by the FP would be designated for preservation/plan-wide activities and very low density use. Landscape-scale project planning also is expected to further avoid, minimize, and mitigate impacts to FP habitat. Only 10 percent of the area designated for Covered Activities consists of native habitat, and most of this native habitat occurs as small, isolated patches within large agricultural areas. Agricultural land and other land uses neither selected nor avoided by FP comprise approximately 80 percent of the area designated for Covered Activities and almost 90 percent if the 45,000-acre limit for Covered Activities at ECMSHCP completion is considered. Following ECMSHCP completion, it is expected that the surplus acreage within the Covered Activities areas would not be developed as a condition of ITP permit issuance in order to preserve panther habitat. Interconnecting private lands that comprise most of the Okaloacoochee Slough would be preserved to provide linkage between core FP population areas south and east of the ECMSHCP area and the FP Dispersal Zone, including preservation of corridors within the ECMSHCP area to facilitate safe FP passage (Figure 4.10-2).

**Construction Disturbance**
As discussed in the ECMSHCP, Section 4.2.1.1.1, noise and human activity as construction approaches field edges adjacent to forested FP habitat could temporarily affect FP utilization of the area. The duration and scale of potential adverse effects would be limited as construction progresses from one area to another. As discussed in the ECMSHCP, implementation of the ECMSHCP would limit most construction to daylight in order to minimize potential disturbance of the FP from light and noise effects. FP may be partially habituated to noise and human disturbance from agricultural operations in areas where most of the residential/commercial development would occur. Disturbance impacts from this construction would be temporary, similar in some locations to ongoing land activities. FP may temporarily avoid these locations, but are expected to return and resume normal behavior following

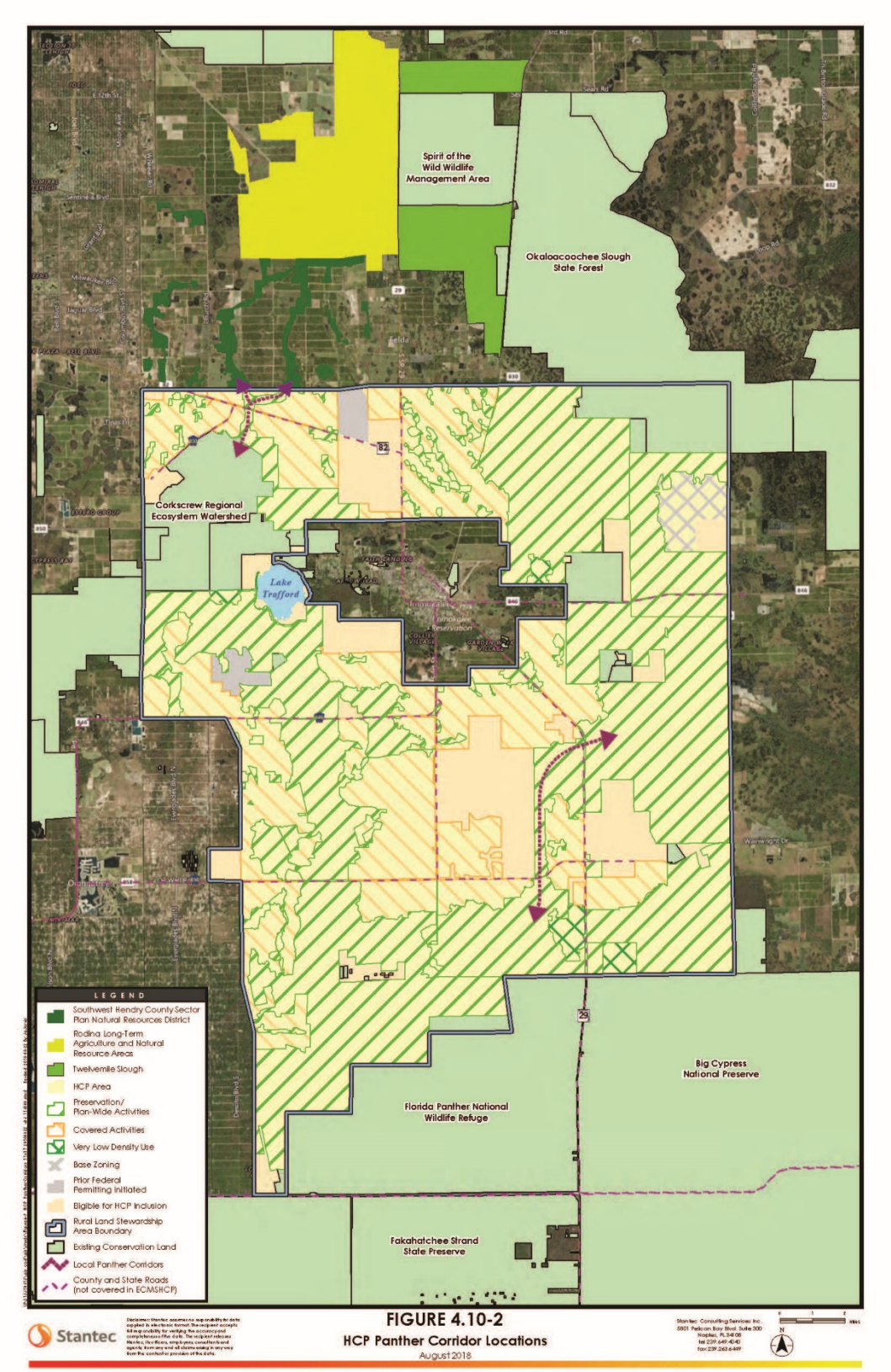



**Figure 4.10-2. East Collier Multiple Species Habitat Conservation Plan Panther Corridor Locations**

construction. Indirect impacts from reduced habitat availability in Covered Activity areas are expected to occur for both FPs and their prey. By largely directing development away from the Okaloacoochee Slough and areas adjacent to the FPNWR, and by preserving interconnected FP habitats, the adverse effects of lost habitat are expected to be less severe. In addition, developments incorporated light and noise barriers between preserved and developed areas, thereby reducing the intensity of noise and light disturbance in the preserved lands; especially at night when panthers are most active.

**Earth Mining**
Earth mining within the ECMSHCP area could result in the permanent loss of potentially suitable feeding and dispersal habitat, direct disturbance from mining activities, and indirect effects from road mortality due to vehicle collisions and post-mining human activities. The post-mining landscape may become lower-value FP habitat, resulting in additional habitat loss for the species. Mining operations could occur during both day and night periods, but vehicle operations would occur only during the daytime to minimize the potential for panther-vehicle collisions.

**Panther-Vehicle Collisions**
The existing roadways within the ECMSHCP area include state highways, county roads, and local roads, and I-75 passes just to the south of the ECMSHCP area. All roadways within the TAA currently operate under capacity (see Section 2.8). Roadways predicted to experience congestion in 2040 are CR 858, CR 846, and SR 29 north of CR 846. FP mortality has been documented along the segments of SR 29, CR 846, and CR 858 that transect areas of highest use by the FP and along other roadways within and outside the ECMSHCP area (Figure 4.10-1). Most records of FP dens in the ECMSHCP area are south of CR 858 within 2 to 3 miles on either side of SR 29 north of the FPNWR and BCNP. Historically, FP road mortality has been relatively higher in Collier County; however, wildlife underpasses have greatly reduced the risk of panther-vehicle collisions, as have administrative actions such as reduction of nighttime speed limits. County and state roadway improvements are currently planned for SR 29 and SR 82; the improvements include increasing capacity by widening from two to four lanes. Increased capacity and widening could increase the potential for panther-vehicle collisions in the area, especially in the absence of wildlife fencing and underpasses. See Section 4.8 for a discussion of potential traffic impacts from these improvements.

Although the applicants and the Service do not control external roadway conditions (such as speed limits, driver behavior, or the installation of wildlife fending or wildlife underpasses), this EIS identifies the long-term operational changes likely to be associated with projected development within the ECMSHCP. The USFWS considered an increase in the number of trips per day, and determined such an increase may lead to adverse effects on the FP. Avoidance, minimization, and compensation measures associated with roadway improvements would be expected to partially offset the potential for substantial adverse effects on the FP from future increases in traffic. Land preservation through the ECMSHCP is expected to further help avoid and minimize transportation-related impacts to the FP by preserving habitat away from highways, preserving habitat corridors that help to minimize the roadway crossing areas used by the FP, and preventing development in areas that might otherwise result in increased traffic. According to the ECMSHCP, the plan would provide land preservation, through perpetual easements on both sides of key roadway segments, that would make the construction of more fenced wildlife crossings possible through the FDOT Work Program, the Marinelli Fund, or otherwise.

**Panther-Human Interactions**
Implementation of the ECMSHCP would allow Covered Activities, including residential/commercial development and earth mining activities, in specific areas. Increases in human population and activity associated with these would increase the potential for adverse panther-human interactions. And these interactions could result in the permanent removal of panthers from the wild. Under Alternative 2, the Covered Activities would be located outside of most higher value FP habitats by focusing development primarily within already disturbed habitats. Under the ECMSHCP, most lands consistently used by the FP would be designated for preservation/plan-wide activities and very low density use. These aspects of the ECMSHCP would be expected reduce the likelihood of panther-human interactions.

**Mitigation**
The ECMSHCP provides for up to 45,000 acres for Covered Activities. These activities would require mitigation to account for potential impacts to FP habitat through the use of Panther Habitat Units (PHUs).

The ECMSHCP conducted analyses using the USFWS Panther Habitat Assessment Methodology (USFWS 2012) to evaluate the overall effects of the ECMSHCP in terms of potential FP habitat impacts and needed mitigation, based on land cover acreage and the functional value of land cover types as panther habitat.

The preservation acreage used for the analysis was conservative, based only on the interconnected habitat areas to be preserved. According to the analysis described in the ECMSHCP, Section 4.2.2, the plan provides more than sufficient mitigation to offset potential FP habitat impacts. The total number of PHUs provided through preservation of conservation lands would exceed required PHU compensation levels, as calculated by the USFWS Panther Habitat Assessment Methodology. Although there is uncertainty associated with the specific development locations and types, the calculations were performed using conservative assumptions to provide reasonable assurance that sufficient PHUs would be provided under the ECMSHCP to offset potential impacts from Covered Activities (see ECMSHCP, Sections 4.2.2.3 through 4.2.2.5).

**Summary**
Under Alternative 2, including proposed mitigation, direct and indirect adverse impacts on the FP would be limited. Potential impacts from future development associated with Covered Activities within the ECMSHCP area could adversely impact the FP due to the loss of habitat, disturbance due to construction and earth mining, and direct harm from panther-vehicle collisions. The ECMSHCP would preserve FP habitat, limit habitat fragmentation, preserve wildlife corridors to provide permanent linkages between existing public conservation lands, and reduce the likelihood of panther-vehicle collisions. Under Alternative 2, direct and indirect adverse impacts on the FP within the ECMSHCP area would likely be less adverse than the No Action Alternative.

### 4.10.6 Florida Scrub-jay

As previously discussed in Chapter 3, the FSJ is restricted to peninsular Florida, non-migratory, and permanently territorial. Preferred habitat is patches of oak scrub within a matrix of little-used saw palmetto and herbaceous swale marshes. Brushy pastures, scrubby corridors along railway and road rights-of-way, and open burned flatwoods offer linkages for colonization. No FSJs have been documented within the ECMSHCP area since the 1992-1993 statewide FSJ census, and according to the ECMSHCP, it is not known if the species currently inhabits the locations in the northwest corner of the ECMSHCP area where there were six observations in the census.

#### *4.10.6.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, section 7 consultations for the covered species would be conducted on a case-by-case basis when a federally-authorized action requires an ITS; or for non-federal actions, issued an ITP after applying for an HCP. If developed according to base zoning, historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required, with no predefined development pattern or preservation of conservation areas. Alternatively, landowners could opt to develop under the RLSP, which would include preservation of lands in the SSAs. Although the FSJ is not known to inhabit the ECMSHCP area currently, future disjointed development and the absence of planned conservation areas within the ECMSHCP area could indirectly impact the FSJ by precluding its potential dispersal into the limited habitat within ECMSHCP area. Under base zoning, historic FSJ locations may be developed or impacted by development under this alternative. While suitable FSJ habitat, if present outside these areas, could be preserved or restored. Because it is unknown whether the FSJ still inhabits these areas where it was observed historically, it is unknown whether it would be directly impacted. Therefore, direct and indirect adverse impacts on the FSJ may occur if FSJs still occupy previously observed areas within development impacts.

#### *4.10.6.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Suitable FSJ habitat does not appear to exist within the Covered Activities area, although FSJ are known to exist in the Immokalee Urban Boundary. Take in the form of harassment could potentially occur if FSJ use marginal habitats near the Immokalee Urban Boundary as refugia. Biological surveys for FSJ, including marginal habitat, would be performed as needed during the planning and environmental

permitting phases of ECMSHCP implementation. Of the six locations within the ECMSHCP area where the FSJ was observed in the 1992-1993 census, three are in an area designated for Covered Activities and three are in areas designated for non-development. Thus, at least half of these historical observation areas are likely to be impacted by development under this alternative, while suitable FSJ habitat, if present outside these areas, could be preserved or restored. Because it is unknown whether the FSJ still inhabits these areas where it was observed historically, it is unknown whether it would be directly impacted. Under Alternative 2, direct and indirect impacts are expected to be below significant but less than the No Action Alternative because no FSJ populations are known to exist on or near the ECMSHCP area currently, and although potential habitat within the area is fragmented and limited in extent, it could be preserved, restored, or managed to provide for future dispersal of the FSJ from other areas.

### 4.10.7 Everglade Snail Kite

As previously discussed in Chapter 3, the ESK is wetland-dependent and feeds primarily on apple snails. Critical habitat for the ESK was designated in 1977; however, no critical habitat occurs within the ECMSHCP area. The ECMSHCP area lies within the FWS Consultation Area for the ESK. Currently, there are no documented ESK nests within the ECMSHCP area or within Collier County based on USFWS's available GIS data. The nearest nest to the ECMSHCP area is approximately 9 miles to the north. According to the ECMSHCP, Okaloacoochee Slough, which extends into the northeast corner of the ECMSHCP area, and Hinson Marsh in the northwestern portion of BCNP, are areas utilized by the ESK, and individuals also have been recorded in other locations on or adjacent to the ECMSHCP area. The principal threat to the ESK is the loss, fragmentation, and degradation of wetlands in central and southwest Florida resulting from urbanized and agricultural development and alterations to wetland hydrology through ditching, impoundment, and water-level management.

#### *4.10.7.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, section 7 consultations for the covered species would be conducted on a case-by-case basis when a federally-authorized action requires an ITS; or for non-federal actions, issued an ITP after applying for an HCP. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required, with no predefined development pattern or preservation of conservation areas. Potential impacts from future disjointed development and the absence of planned conservation areas within the ECMSHCP area could adversely impact the ESK. Alternatively, land owners could opt to participate in the RLSP and pursue higher density developments in SRAs, in exchange for conservation within the SSAs. Under the No Action Alternative, potentially significant direct and indirect adverse impacts on the ESK could occur because of the loss of nesting and foraging habitat within the ECMSHCP area. Although the ESK is not known to nest within the ECMSHCP area currently, future disjointed development and the absence of planned conservation areas within the ECMSHCP area could indirectly impact the ESK by precluding its potential dispersal into and use of suitable wetland habitats within ECMSHCP area. However, the loss of the wetland habitats would be minimized by existing wetland regulations. Under the No Action Alternative, potentially significant direct impacts on the ESK from development within the ECMSHCP area are unlikely because no nests are known to exist within the area and potential habitat for the ESK is fragmented and limited in extent. Therefore, direct and indirect impacts on the ESK are expected to be below significant levels.

#### *4.10.7.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Take in the form of harassment due to human activity and noise associated with Covered Activities development could occur. Within the areas designated for Covered Activities, freshwater marsh acreage is less than 1 percent of the ECMSHCP area as compared to approximately 11 percent of freshwater marsh designated for preservation and very low density use. The ECMSHCP generally avoids impacts to freshwater marsh and other wetland habitats that potentially provide nesting and foraging habitat for the ESK. Under Alternative 2, impacts on the ESK are anticipated to be below significant levels because of the small acreage of suitable habitat that would be affected by Covered Activities, the general avoidance of potential nesting and foraging habitat by planned development, and environmental permitting protections.

### 4.10.8 Eastern Indigo Snake

As previously discussed in Chapter 3, the IS is presumed to occur throughout the action area because this species uses diverse habitats such as dry prairie, edges of freshwater marshes, agricultural fields, and human-altered habitats, and is most commonly observed in hardwood hammocks and pinelands. The IS prefers upland habitats and is commonly associated with gopher tortoises where they occur. The primary threat to IS is habitat fragmentation and loss. The IS has been observed on existing conservation land in the northwest corner of the ECMSHCP area.

#### *4.10.8.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, section 7 consultations for the covered species would be conducted on a case-by-case basis when a federally-authorized action requires an ITS; or for non-federal actions, issued an ITP after applying for an HCP. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required, with no predefined development pattern or preservation of conservation areas. Potential impacts from future disjointed development and the absence of planned conservation areas within the ECMSHCP area could adversely impact the IS due to the loss of a variety of upland habitats on which it depends, habitat fragmentation, as well as direct harm during site clearing and construction. Under the No Action Alternative, direct and indirect adverse impacts on the IS within the ECMSHCP area could be potentially significant.

#### *4.10.8.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, take in the form of harm or harassment due to human activity associated with Covered Activities development could occur. Covered Activities would affect an estimated 1 percent of native upland habitats and occur primarily in agriculture areas. Some of the agricultural land uses provide suitable habitat (citrus, and unimproved pasture) but are fragmented by roads. Approximately 7 percent of the native upland habitat would be preserved under the ECMSHCP, including linkages between habitat mosaics important for IS conservation. Native upland habitat in the Covered Activities areas is a small percentage of the overall ECMSHCP area. Primarily agricultural land would be disturbed, and upland native habitats and important interconnecting habitat mosaics would be preserved under the ECMSHCP. The IS could be directly harmed by construction, mining, or land management activities or harassed by human activity and vibration associated with development implemented in accordance with the plan. Overall, direct and indirect impacts on the IS under Alternative 2 are anticipated to be adverse, but less adverse than Alternative 1.

### 4.10.9 Gopher Tortoise

As previously discussed in Chapter 3, the GT is a candidate for listing under the ESA and is state-listed as threatened. The GT prefers grassy, open-canopy microhabitats, and burrows are the habitat and center of normal feeding, breeding, and sheltering activity. GTs have been observed only in the northwest corner of the ECMSHCP area. In Florida, GTs must be relocated before any land clearing or development takes place, and property owners must obtain permits from the FWC before they can move them.

#### *4.10.9.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, section 7 consultations for the covered species would be conducted on a case-by-case basis when a federally-authorized action requires an ITS ; or for non-federal actions, issued an ITP after applying for an HCP. Historical land uses and development would continue on a project-by-project basis, subject to traditional environmental reviews, if required, with no predefined development pattern or preservation of conservation areas. Potential impacts from future disjointed development and the absence of planned conservation areas within the ECMSHCP area could adversely impact the GT. The GT must legally be relocated before any land clearing or development takes place, and property owners must obtain permits from the FWC before they can move them. Therefore, under the No Action Alternative, adverse direct and indirect impacts on the GT are expected to be below significant.

#### *4.10.9.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, take of the GT in the form of harm from injury or death is possible, but unlikely. Take in the form of harassment due to human activity and noise associated with Covered Activities and land management potentially could occur. Native upland habitats that the GT uses in central Florida are limited within the ECMSHCP area, with the exception of pine and oak uplands. Covered Activities comprise an estimated 1 percent of native upland habitats and occur primarily in agricultural areas fragmented by roads, while approximately 7 percent of the native upland habitat would be preserved under the ECMSHCP. If the GT is present, it must legally be avoided or relocated. (This also would provide some protection for the IS and GF that use GT burrows.) Under Alternative 2, surveys would be performed during planning and environmental permitting, any GT present in Covered Activities areas would be moved before land disturbance, and most of the native upland habitat in this area would be preserved. Therefore, Alternative 2 is expected to result in below significant impact on GT.

## 4.11 STATE LISTED SPECIES

In addition to the federally listed covered species, the ECMSHCP covers eight species that are not federally listed but are currently listed by the state of Florida as “threatened” (Table 3.9-1), based on recent Biological Status Reviews by the Florida FWC. All of the state-listed species in Table 3.9-1 would benefit directly from the ECMSHCP, because each of these species utilizes habitats that are the same as or similar to those utilized by the federally listed covered species.

### 4.11.1 Florida Burrowing Owl

As previously discussed in Chapter 3, the FBO is state-listed as threatened. This small raptor that eats mainly insects, spends most of its time on the ground, and uses burrows. The FBO prefers open habitats with short vegetation and has adapted to human activity. In addition to native dry prairies, it inhabits pastures, agricultural fields, golf courses, and vacant lots, even in urban areas. The FBO has been documented within and adjacent to the ECMSHCP area. Two FBO locations have been identified within the ECMSHCP area, and three other locations have been identified within 5 miles outside of the ECMSHCP area boundary.

#### *4.11.1.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, no ITPs for covered species would be issued, and the ECMSHCP would not be implemented as proposed. Historical land uses and development would continue on a project-by-project basis, subject to existing zoning and traditional environmental reviews, if required, with no predefined development pattern or additional preservation areas. Future disjointed development and the absence of additional planned preservation areas under the ECMSHCP could adversely affect the FBO, although the FBO is adaptable in utilizing areas that have been cleared by humans for purposes other than buildings and paving. Under the No Action Alternative, potential direct and indirect adverse impacts on the FBO could occur because of the loss of nesting and foraging habitat from uncoordinated and more expansive development, and the lack of planned conservation areas within the ECMSHCP area. Overall, adverse effects on the FBO under the No Action Alternative would likely be below significant levels.

#### *4.11.1.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, direct and indirect take of the FBO potentially could occur in conjunction with habitat loss due to development or land management activities in areas designated for Covered Activities. However, approximately 37 percent of the acreage within the ECMSHCP area provides potentially suitable habitat for the FBO, and the preservation of extensive areas from development would allow the FBO to continue to occupy these habitats. In addition, the FBO is adaptable in utilizing areas that have been cleared by humans for purposes other than buildings and paving. Therefore, adverse impacts on the FBO under Alternative 2 would likely be below significant. Under Alternative 2, potential adverse impacts from the loss of habitat would be minimized through habitat preservation and a much smaller development footprint, and adverse impacts on the FBO would likely be less than the No Action Alternative.

### 4.11.2 Little Blue Heron, Tricolored Heron, and Roseate Spoonbill

As previously discussed in Chapter 3, the LBH, TCH, and RS are state-listed as threatened. The LBH and TCH depend on healthy wetlands, mangrove and other islands, and vegetated areas suitable for nesting and breeding and near foraging habitat. The RS also depends on these habitats and primarily nests on coastal islands. The LBH typically nests and roosts in multi-species colonies, but usually forages singly. The TCH typically nests in multi-species colonies of various sizes, primarily in coastal habitats. The RS is social and gathers in small to large groups when feeding and roosting. Populations of these species in Florida are expected to continue to slowly decline, mainly due to habitat loss. However, extensive areas of potentially suitable freshwater habitat for wading birds exist within the ECMSHCP area, and the LBH and TCH are routinely observed within this area. Numerous recent observations of the RS have occurred in the ECMSHCP area.

#### *4.11.2.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, the ECMSHCP would not be implemented as proposed. Historical land uses and development would continue within the area on a project-by-project basis, subject to existing zoning and traditional environmental reviews, if required, with no predefined development pattern or additional preservation areas. Future disjointed development and the absence of additional planned preservation areas under the ECMSHCP could adversely affect the LBH, TCH, and RS. However, loss of the wetland habitats they utilize would be minimized by existing wetland regulations. Overall, adverse effects on the LBH, TCH, and RS under this alternative would likely be limited. Under the No Action Alternative, potential direct and indirect adverse impacts on the LBH, TCH, and RS could occur because of the loss of foraging and/or nesting habitat from disjointed and more expansive development, and the lack of planned conservation areas within the ECMSHCP area, but would likely be below significant levels.

#### *4.11.2.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, direct and indirect take of the LBH, TCH, and RS potentially could occur in conjunction with habitat loss due to development or land management activities in areas designated for Covered Activities. However, existing wetland regulations would minimize habitat loss in these areas, and the preservation of extensive areas from development would allow these species to continue to utilize the wetland habitats in these areas. Given the protection of wetland habitats used by these species throughout the ECMSHCP area and the preservation of extensive areas from development, the potential for adverse effects on the LBH, TCH, and RS under this alternative would be below significant. Under Alternative 2, potential adverse impacts from the loss of habitat would be minimized through habitat preservation and a much smaller development footprint, as well as enforcement of wetland protection regulations in development areas. Accordingly, adverse impacts on the LBH, TCH, and RS would likely be less than the No Action Alternative.

### 4.11.3 Southeastern American Kestrel

As previously discussed in Chapter 3, the SAK is state-listed as threatened, and now breeds no farther south than Highlands and Lee Counties. The SAK uses a variety of habitats in Florida, including scrub, scrubby flatwoods, dry prairie, pastures, parks, golf courses, and orange groves, and it nests in cavities. The FNAI does not include Collier County in the SAK's range, and the FWC Species Action Plan identified no SAK breeding records within the ECMSHCP area.

#### *4.11.3.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, the ECMSHCP would not be implemented as proposed. Historical land uses and development would continue within the area on a project-by-project basis, subject to existing zoning and traditional environmental reviews, if required, with no predefined development pattern or additional preservation areas. Although the presence of the SAK within the ECMSHCP area has not been documented, future disjointed development and the absence of additional planned preservation areas within the ECMSHCP area could reduce suitable habitat available to the SAK. Overall, adverse effects on the SAK under this alternative would likely be limited. Under the No Action Alternative, potential direct and indirect adverse impacts on the SAK could occur because of the loss of nesting and foraging habitat from

disjointed and more expansive development, and the lack of planned conservation areas within the ECMSHCP area. Under the No Action Alternative, impacts on the SAK would likely be below significant levels.

#### *4.11.3.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, direct and indirect take of the SAK potentially could occur in conjunction with habitat loss due to development or land management activities in areas designated for Covered Activities. However, the presence of the SAK within the ECMSHCP area has not been documented, and the preservation of extensive areas from development would be beneficial, allowing this species to utilize suitable habitats in these areas. Given the protection of habitats that could be used by the SAK within the extensive areas that would be preserved from development, the potential for adverse effects on the SAK under this alternative would be below significant. Under Alternative 2, potential adverse impacts from the loss of habitat would be minimized through preservation and a much smaller development footprint, and adverse impacts on the SAK would likely be less than the No Action Alternative.

### 4.11.4 Florida Sandhill Crane

As previously discussed in Chapter 3, the FSC is state-listed as threatened. This species utilizes shallow marshes for roosting and nesting and forages in wet and dry prairies; freshwater marshes; agricultural areas such as pastures, feed lots, and crop fields; and golf courses and other open lawns. The FSC is non-migratory and occurs mainly in peninsular Florida south to the northern edge of the Everglades.

#### *4.11.4.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, the ECMSHCP would not be implemented as proposed. Historical land uses and development would continue on a project-by-project basis, subject to existing zoning and traditional environmental reviews, if required, with no predefined development pattern or additional preservation areas. Future disjointed development and the absence of additional planned preservation areas within the ECMSHCP area could adversely affect the FSC as a result of habitat loss, although the FSC is adaptable in utilizing agricultural and developed areas such as pastures, crop fields, golf courses, and lawns as foraging habitat. Overall, adverse effects on the FSC under this alternative would likely be limited. Under the No Action Alternative, potential direct and indirect adverse impacts on the FSC could occur because of the loss of foraging and/or nesting habitat from disjointed and more expansive development, and the lack of planned conservation areas within the ECMSHCP area. These impacts would likely be below significant levels.

#### *4.11.4.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, direct and indirect take of the FSC potentially could occur in conjunction with habitat loss due to development or land management activities in areas designated for Covered Activities. However, the ECMSHCP includes an abundance of shallow marshes for roosting and nesting and open upland and wetland habitats for foraging, and the preservation of extensive areas from development would allow the FSC to continue to occupy these habitats. In addition, the FSC is adaptable in utilizing agricultural and lawn areas for foraging. Therefore, adverse impacts on the FSC under this alternative ***would likely be below significant. Under Alternative 2, potential adverse impacts from the loss of habitat*** would be minimized through preservation and a much smaller development footprint, as well as enforcement of wetland protection regulations in development areas. Accordingly, adverse impacts on the FSC would likely be less than the No Action Alternative.

### 4.11.5 Everglades Mink

As previously discussed in Chapter 3, the EM is state-listed as threatened. The EM is a disjunct population of the American mink that utilizes mainly wetland habitats, including marshes and swamps. Population size, territory, and extent of occurrence in the ECMSHCP area are poorly known. Although no EM occurrences have been documented in the ECMSHCP area, the EM is included as a covered species in the ECMSHCP due to the proximity of the ECMSHCP area to the FSPSP, where the EM has been observed; the presence of wetland habitats within the ECMSHCP area; and the general lack of knowledge regarding the EM's current population status and distribution in the ECMSHCP area.

#### *4.11.5.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, the ECMSHCP would not be implemented as proposed. Historical land uses and development would continue on a project-by-project basis, subject to existing zoning and traditional environmental reviews, if required, with no predefined development pattern or additional preservation areas. Future disjointed development and the absence of additional planned preservation areas within the ECMSHCP area could adversely affect the EM as a result of habitat reduction and fragmentation. However, loss of the wetland habitats it utilizes would be minimized by existing wetland regulations. Overall, adverse effects on the EM would likely be limited. Under this alternative, potential direct and indirect adverse impacts on the EM could occur because of the loss of habitat from disjointed and more expansive development, and the lack of planned conservation areas within the ECMSHCP area. Under the No Action Alternative, impacts on the EM would likely be below significant levels.

#### *4.11.5.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, direct and indirect take of the EM potentially could occur in conjunction with habitat loss due to development or land management activities in areas designated for Covered Activities. However, existing wetland regulations would minimize habitat loss in these areas, and the preservation of extensive areas from development would allow the EM to continue to utilize the wetland habitats. Given the protection of wetland habitats used by this species throughout the ECMSHCP area and the preservation of extensive areas from development, the potential for adverse effects on the EM under this alternative would be negligible. Under Alternative 2, potential adverse impacts from the loss of habitat would be minimized through preservation and a much smaller development footprint, as well as enforcement of wetland protection regulations in development areas. Accordingly, adverse impacts on the EM would likely be below significant, but less than the No Action Alternative.

### 4.11.6 Big Cypress Fox Squirrel

As previously discussed in Chapter 3, the BCFS is state-listed as threatened. The BCFS occurs only in southwestern peninsular Florida, south of the Caloosahatchee River, in Hendry, Lee, and Collier Counties. BCFS habitats include forests of slash pine, cypress, live oak, and tropical hardwoods. The BCFS also uses urbanized and agricultural areas, which may provide suitable habitat as long as large trees remain available to provide food and nest sites. For nesting, the BCFS principally uses cypress trees adjacent to good foraging habitat. Suitable nesting and foraging habitats exist in the ECMSHCP area.

#### *4.11.6.1 Alternative 1 - Action Alternative*

Under the No Action Alternative, the ECMSHCP would not be implemented as proposed. Historical land uses and development would continue on a project-by-project basis, subject to existing zoning and traditional environmental reviews, if required, with no predefined development pattern or additional preservation areas. Future disjointed development and the absence of additional planned preservation areas within the ECMSHCP area could adversely affect the BCFS as a result of habitat reduction and fragmentation. However, loss of the cypress wetland habitats they utilize for nesting would be minimized by existing wetland regulations, and adverse effects on the BCFS would likely be limited. Under the No Action Alternative, potential direct and indirect adverse impacts on the BCFS could occur because of the loss of habitat from disjointed and more expansive development, and the lack of planned conservation areas within the ECMSHCP area. Impacts on the BCFS would likely be below significant levels.

#### *4.11.6.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, direct and indirect take of the BCFS potentially could occur in conjunction with habitat loss due to development or land management activities in areas designated for Covered Activities. However, existing wetland regulations would minimize habitat loss in these areas, and the preservation of extensive areas from development would allow the BCFS to continue to utilize the habitats in these areas. Given the protection of wetland habitats, including the cypress forest preferred for nesting, and other forest habitats used by this species throughout the ECMSHCP area, as well as the preservation of extensive areas from development, the potential for adverse effects on the BCFS would be below significant. Under Alternative 2, potential adverse impacts from the loss of habitat would be minimized

through preservation and a much smaller development footprint, as well as enforcement of wetland protection regulations in development areas. Accordingly, adverse impacts on the BCFS would likely be less than the No Action Alternative.

## 4.12 OTHER SPECIES OF CONCERN

### 4.12.1 Eastern Diamondback Rattlesnake

As previously discussed in Chapter 3, the EDR has been petitioned for federal listing and is currently under status review. The EDR is still locally common in suitable habitat in Florida. This species inhabits a wide range of habitats, including pine and pine-palmetto flatwoods, longleaf pine-turkey oak hills, rosemary scrub, mesic and xeric hammocks, wet savannas and prairies (during dry periods), dry prairie, mixed pine-hardwood successional woodland, and abandoned farms and fields. The EDR uses gopher tortoise and armadillo burrows, stump holes, and cavities at the bases of hardwood trees as shelter.

#### *4.12.1.1 Alternative 1 - No Action Alternative*

Under the No Action Alternative, the ECMSHCP would not be implemented as proposed. Historical land uses and development would continue on a project-by-project basis, subject to existing zoning and traditional environmental reviews, if required, with no predefined development pattern or additional preservation areas. Future disjointed development and the absence of additional planned preservation areas within the ECMSHCP area could reduce the availability of suitable habitat for the EDR. Overall, adverse effects on the EDR under this alternative would likely be minimal. Under the No Action Alternative, potential direct and indirect adverse impacts on the EDR would likely be below significant levels.

#### *4.12.1.2 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, direct and indirect adverse effects on the EDR potentially could occur in conjunction with habitat loss due to development or land management activities in areas designated for Covered Activities. However, the preservation of extensive areas from development would allow the EDR to continue to utilize suitable upland habitats in these areas. Given the protection of habitats used by this species throughout the ECMSHCP area and the preservation of extensive areas from development, the potential for adverse effects on the EDR under this alternative would be minimal. Under Alternative 2, potential adverse impacts from the loss of habitat would be minimized through preservation and a much smaller development footprint. Accordingly, adverse impacts on the EDR would likely be less than significant and less than the No Action Alternative.

### 4.12.2 Gopher Frog

As previously discussed in Chapter 3, the GF has been petitioned for federal listing and is currently under status review. It occurs in upland pine forest, scrub, xeric hammock, mesic and scrubby flatwoods, dry prairie, mixed hardwood-pine communities, and a variety of disturbed habitats. Breeding has been observed in depression marshes, basin marshes, wet prairies, dome swamps, upland sandhill lakes, sinkhole ponds, ditches, and borrow pits. In Florida, the GF primarily uses GT burrows, although it will also use pocket gopher and small mammal burrows, crayfish burrows, stump holes, leaf litter, hollow logs, and clumps of grass for shelter.

#### *4.12.1.3 Alternative1 - No Action Alternative*

Under the No Action Alternative, no ITP for the GF or other covered species would be issued, and the ECMSHCP would not be implemented as proposed. Historical land uses and development would continue within the ECMSHCP area on a project-by-project basis, subject to existing zoning and traditional environmental reviews, if required, with no predefined development pattern or additional preservation areas. Future disjointed development and the absence of additional planned preservation areas within the ECMSHCP area could reduce the availability of suitable habitat for the GF. Overall, adverse effects on the GF under this alternative would likely be minimal, though potential direct and indirect adverse impacts on the GF could occur because of the loss of habitat and the lack of additional

conservation areas within the ECMSHCP area. Under the No Action Alternative, impacts on the GF would likely be below significant levels.

#### *4.12.1.4 Alternative 2 - Issuance of ITPs for the ECMSHCP*

Under Alternative 2, direct and indirect adverse effects on the GF potentially could occur in conjunction with habitat loss due to development or land management activities in areas designated for Covered Activities. However, existing wetland regulations would minimize breeding habitat loss in these areas, and the preservation of extensive areas from development would allow the GF to continue to utilize the wetland and upland habitats in these areas. Given the protection of breeding and foraging habitats used by this species throughout the ECMSHCP area and the preservation of extensive areas from development, the potential for adverse effects on the GF under this alternative would be minimal. Under Alternative 2, potential adverse impacts from the loss of habitat would be minimized through preservation and a much smaller development footprint, as well as enforcement of wetland protection regulations in development areas. Accordingly, adverse impacts on the GF would likely be below significant, but less than the No Action Alternative.

## 4.13 FARMLANDS

Federal permitting decisions, such as the Service's decision whether to issue an ITP for the ECMSHPC, is not subject to the FPPA. Even though the Service's decision is not subject to the FPPA, the Service is providing some general statements about farmlands in the ECMSHCP Area relative to the No Action and ECMSHCP Alternatives.

### 4.13.1 Alternative 1 – No Action

Under the No Action Alternative, the fate of intensive production row-cropped lands will vary depending on the lands designation under the RLSP and the owner's decision to participate in the RLSP. Most of the intensively row-cropped lands in the ECMSHCP boundary are in the RLSA boundary and are designated as RLSP receiving areas. These crop lands will most likely be converted to residential and commercial development, or mined, if the owner participates in the RLSP. Conversely, non-RLSP participants may elect to keep their croplands in agricultural production or develop these lands according to the base zoning criteria.

### 4.13.2 Alternative 2 – Issuance of ITPs for the ECMSHCP

Under the ECMSHCP Alternative, up to 35,638 acres of intensive-production row crop farmlands in the covered activity areas are expected be converted to residential or commercial development, or mines. Row crops located in the Camp Keais Strand flowway will be restored to forested and herbaceous wetlands.

## 4.14 COMPARISON OF ALTERNATIVES

The environmental impacts of the alternatives are summarized in Table 2-2. These summaries are derived from the information and analyses provided in Chapter 4.

**Table 4.14-1. Summary and Comparison of Alternatives by Resource Area**

| Resource Area | No Action | Issuance of Incidental Take Permits for the East Collier Multiple Species Habitat Conservation Plan |
|---|---|---|
| Climate | Below Significant Impacts | Below Significant Impacts |
| Land Uses | Adverse Impacts | Adverse, but less than the No Action Alternative |
| Geology and Soils | Adverse Impacts | Adverse, but less than the No Action Alternative |
| Water Resources | Adverse Impacts | Adverse, but less than the No Action Alternative |

| | | |
|---|---|---|
| Air Quality | Adverse Impacts | Adverse, but less than the No Action Alternative |
| Cultural Resources | Significant Impacts | Mitigated to Below Significant Impacts |
| Visual Resources | Below Significant Impacts | Below Significant Impacts |
| Transportation | Significant Impacts | Significant Impacts |
| Ecological Communities | Adverse Impacts | Adverse, but less than the No Action Alternative |
| General Wildlife | Adverse Impacts | Adverse, but less than the No Action Alternative |
| Wildlife Linkages and Corridors | Adverse Impacts | Adverse, but less than the No Action Alternative |
| Migratory Birds | Significant Impacts | Mitigated to Below Significant Impacts |
| Bald Eagles | Below Significant Impacts | Below Significant Impacts |
| Federally Listed and Candidate Species | Adverse Impacts | Adverse, but less than the No Action Alternative |
| State Listed Species | Adverse Impacts | Adverse, but less than the No Action Alternative |
| Other Species of Concern | Adverse Impacts | Adverse, but less than the No Action Alternative |
| Prime Farmland, Unique Farmland, and Land of Statewide or Local Importance as described in the Farmland Protection Policy Act | Significant Impacts | Significant Impacts |

## 4.15 CUMULATIVE IMPACTS

### 4.15.1 SUMMARY OF CUMULATIVE IMPACTS

This section provides a summary of the potential cumulative impacts associated with the No Action Alternative and Alternative 2. These potential impacts would result from other facilities, operations, and activities that in combination with potential impacts from the two alternatives may contribute to cumulative impacts in the geographical area of interest. A more detailed analysis concerning cumulative impacts is presented in section 4.15.2.

NEPA, as implemented by CEQ regulations (40 CFR Parts 1500-1508) requires federal agencies, including the USFWS, to consider cumulative impacts in rendering a decision on a federal action under its jurisdiction. According to 40 CFR Part 1508.7, a cumulative impact is the impact on the environment that results from the incremental impact of the proposed project when added to other past, present, and reasonably foreseeable future actions regardless of the agency (federal or non-federal) or person that undertakes such other actions; cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative effects include, but are broader than, the direct and indirect effects described in other sections of this dEIS.

Section 4.15.2 includes the projects and actions undertaken by federal, state, and local agencies and private developers potentially contributing to cumulative impacts. Past and present actions are those projects and activities that have contributed to and continue to contribute to cumulative impacts on local resources. Future proposed actions consider projects that could contribute to cumulative impacts if undertaken. Federal and state agencies are given broader attention because their projects typically affect the widest geographic portion of the ECMSHCP area, have been ongoing for decades and are likely to continue throughout the life of the project, and have impacted many of those resources affected by the

proposed action (e.g., geology and soils, biological resources). These projects and activities do not comprise the only actions to affect resources cumulatively in the ECMSHCP area, but the detailed projects have had (and will continue to have) the greatest effect, and a working knowledge of these actions provides an important context for understanding the scope and scale of cumulative effects.

**Geology and Soils**
Under the No Action Alternative and Alternative 2, cumulative impacts to geology and soils could occur when multiple projects occur within the ECMSHCP area and vicinity. These projects could include roads, residences, earth mining activities, and other non-regulated development. Although current Collier County base zoning allows one residence per 5 acres, residential development within lands designated as "Open" in the RLSP could occur at much greater densities. Under Alternative 2, (the issuance of ITPs), ECMSHCP and resulting agreements with the ECPO would help to minimize cumulative impacts to geology and soils due to the amount of land that would be preserved in its existing land use or be dedicated to habitat conservation.

**Water Resources**
Under the No Action Alternative and Alternative 2, cumulative impacts to water resources are expected from human activities within the watersheds connected to the ECMSHCP area. Foreseeable cumulative effects are expected from a combination of consumptive water uses, wastewater management actions; as well as water retention, flood control, drainage and restoration projects. The Service anticipates that SFWMD, in conjunction with Collier County Watershed Management Plan, would be responsive to these cumulative effects to the region's water resources.

**Air Quality**
Under the No Action Alternative and Alternative 2, cumulative impacts to air quality are expected occur within the ECMSHCP area and throughout Southwest Florida. Air pollutant emissions are expected to increase in Collier County, with or without the ECMSHCP in place. These foreseeable cumulative effects to air quality are associated with the anticipated increase in the region's population, and associated increase in development. Increased vehicle traffic is expected throughout the Southwest Florida region in both alternatives due to increases in population. Mining activities are anticipated continue and expand in the region. Active mines are expected to create particulate dust during material extraction. Continued development is also expected to create construction dust. All future development in the County is subject to the state's existing air quality regulations.

**Cultural Resources**
Some past actions have likely caused some degree of cumulative disturbance to cultural resources in the ECMSHCP area, and some of the actions are still ongoing and may continue into the future. Under the No Action Alternative, consideration of potential effects these activities could have on cultural resources is not guaranteed. Under Alternative 2, all actions with the potential to affect cultural resources (e.g., land clearing for development) would require consultation with the SHPO as a condition of issuing an ITP (otherwise lawful activity). Additionally, the restricted use of approximately 107,000 acres is anticipated to provide a cumulative benefit for South Florida's cultural heritage and create opportunities for future conservation activities.

**Visual Resources**
Under the No Action Alternative and Alternative 2, cumulative impacts to visual resources are expected from human activities outside of the ECMSHCP area. Foreseeable cumulative effects are expected from a combination of residential and commercial development, infrastructure development, mining, and other land use changes. The magnitude of these visual effects will be determined by landowners' decisions whether to incorporate modern development aesthetics practices including wildlife friendly lighting. Conservation lands, and any undeveloped agricultural lands, are expected to remain visually similar to their current state.

**Transportation**
Cumulative impacts to transportation in the project area may result from the conversion of agricultural lands to residential/commercial development, and associated roadway development. Additional demand stemming from development outside of the ECMSHCP area would also further congest roadways.

Under the No Action Alternative, no ITP for the covered species would be issued and the ECMSHCP program would not be implemented as proposed. Historical land uses and development would continue on a project-by-project basis with no predefined development pattern. Several thousand acres in Eastern Collier County, located both inside and outside of the ECMSHCP boundaries, would likely be developed at the intensity of one unit per five acres.

The network of local roadways needed to support access to the new low-density development would be extensive, and average trip distances generally grater. Additionally, traffic resulting from the likely development of lands adjacent to the ECMSHCP area would degrade the operating characteristics of the major roadway network beyond the conditions described in Section 4.6. Additional capacity on most major roadways within the TAA would be needed to support the additional demand. Adverse cumulative impacts on transportation under the No Action Alternative would likely be significant.

Under Alternative 2, traditional, historic, and ongoing rural land uses within the ECMSHCP area and surrounding areas (primarily agriculture and ranching) would continue on the majority of the land present. Covered Activities including residential and commercial development would occur primarily within previously cleared agricultural areas. With the development of the ECMSHCP area proximate land outside the ECMSHCP area would likely experience increased development pressure.

The local roadway network needed to support the proposed development would be focused within the covered activities areas with higher internal trip capture rates. Most major roadways within the TAA would operate at higher volumes and experience significant congestion. This alternative would result in a significant increase in the overall regional traffic volume. Additional roadway capacity would be required to support projected future travel demand in the area of the ECMSHCP area and greater southwest Florida region. Thus, adverse cumulative impacts on transportation under the Alternative 2 would also likely be significant.

**Biological Resources**
Under the No Action Alternative and Alternative 2, adverse cumulative impacts to biological resources are possible, but not readily predictable. When the current and proposed projects and plans in Collier County are examined together, potential adverse cumulative impacts may be compounded. Development under the No Action Alternative would continue on a project-by-project basis, subject to traditional environmental reviews, with no predefined development pattern, ecological monitoring, or preservation of conservation areas. Cumulatively, this could lead to larger changes in ecological communities over time, as areas become fragmented if development were to occur without leaving large areas intact. Alternative 2 would result in better development planning across the ECMSHCP area, and existing ecological communities outside of areas designated for development would be either preserved or restored for the benefit of general wildlife and the covered species. This could result in beneficial cumulative impacts because the preservation of habitat within the ECMSHCP area would reduce or mitigate potential adverse effects.

**Farmlands**
Under the No Action Alternative and Alternative 2, cumulative impacts to farmlands are expected from human activities within and outside of the ECMSHCP area. Foreseeable cumulative impacts are expected from a combination of residential and commercial development, infrastructure development, mining, and other land use changes. Increasing demand for development in Southwest Florida will likely lead to the conversion of farmland to development and associated infrastructure.

### 4.15.2 CUMULATIVE IMPACTS

In accordance with the intent of the Incidental Take Permit (ITP) and Eastern Collier Multiple Species Habitat Conservation Plan (ECMSHCP) initiative, the analysis focuses on specific resources and impact areas of concern and excludes analysis related to areas and resources that would not be meaningfully impacted by the proposed action or induced actions. Also, in accordance with CEQ guidance, "agencies are not required to list or analyze the effects of individual past actions unless such information is necessary to describe the cumulative effect of all past actions combined. Generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions" (Guidance on the

Consideration of Past Actions in Cumulative Effects Analysis, CEQ 2005). Focusing the analysis only on resources where there is a likelihood of reasonably foreseeable cumulative impacts supports the intent of the NEPA process, which is "to reduce paperwork and the accumulation of extraneous background data; and to emphasize real environmental issues and alternatives" [40 CFR Part 1500.2(b)].

Actions undertaken by federal, state, local agencies and private companies and individuals are highlighted in the sections below. These sections do not comprise the only actions to affect resources cumulatively in the project area, but the detailed projects have had (and will continue to have) the greatest effect on the Collier County proposed Habitat Conservation Plan (HCP), and a working knowledge of these actions provides an important context for understanding the scope and scale of cumulative effects. The following sections detail potential impacts to those resources that may be cumulatively affected, regardless of action (i.e., single or aggregate).

Past actions that have already occurred and present actions are integrated into the existing baseline conditions discussed above. Table 4.15-1 summarizes and the following section discusses the reasonably foreseeable current and future actions in the immediate vicinity of the project area. The project descriptions are followed by an analysis of potential cumulative impacts to specific resources in the project area.

**Table 4.15-1. Summary of Present or Reasonably Foreseeable Future Actions in the Vicinity of the ECMSHCP**

| Action | Description | Timing |
|---|---|---|
| Federal Emergency Management Agency Funding | Funding to the State of Florida and private individuals for rebuilding after Hurricane Irma. | Present/Future |
| USACE Picayune Strand Restoration Project | Restoration of hydrology to original status prior to failed residential development | Present/Future |
| USACE Western Everglades Restoration Project | Restoration to reestablish sheet flow from the West Feeder Canal across the Big Cypress Seminole Indian Reservation | Present/Future |
| Immokalee Airport Environmental Protection Agency Brownfield Grant Assessment | Funding for environmental testing and planning | Present/Future |
| USACE Southern Golden Gate Estates Hydrologic Restoration Project | Restoration of hydrological and ecological function to the area once known as the Southern Golden Gate Estates, a failed residential development. | Present/Future |
| South Florida Water Management District (SFWMD) Projects | Multiple drainage, restoration and planning projects aimed at water and land conservation | Present/Future |
| Florida Department of Transportation Projects | Multiple projects including sidewalk construction, interchange construction, bridge construction, and road widening | Present/Future |
| Developments of Regional Impact | Town of Ave Maria residential development, including preservation easements | Present/Future |
| Rural Land Stewardship Area (RLSA) | Collier County Land Stewardship program, development restrictions and preservation areas, contains the entire proposed HCP | Present/Future |

**Table 4.15-1. Summary of Present or Reasonably Foreseeable Future Actions in the Vicinity of the ECMSHCP**

| Action | Description | Timing |
|---|---|---|
| Immokalee Community Redevelopment Agency (CRA) | Immokalee land use and development planning, residential, industrial and preservation | Present/Future |
| Immokalee Regional Airport | Master Plan and Layout Plan updates, including proposed renovations and new development | Present/Future |
| Collier County Long Range Transportation Plan 2040 | Road widening, intersection upgrades, pedestrian and bicycle pathways, public transport plans, including a proposed loop around Immokalee | Present/Future |
| Private Residential Developments | Multiple large-scale residential development, including some commercial development in Naples and North Naples | Present/Future |

#### *4.15.2.1 Projects Potentially Contributing to Cumulative Impacts*

##### *4.15.2.1.1 Federal Projects*

###### *Federal Emergency Management Agency*

On September 10, 2017 Hurricane Irma made landfall on Marco Island in Collier County, Florida. The village of Goodland on the southeastern tip of Marco Island, along with Everglades City and Chokoloskee just to the south, took the brunt of the storm with the added impact of storm surge. The estimated damages in Collier County were $145 million (Collier County 2018a). The Federal Emergency Management Agency (FEMA), the National Flood Insurance Program (NFIP) and the Small Business Administration (SBA) have provided payments and financial assistance to the State, County, and individuals since the Hurricane. As of March 6, 2018, FEMA and the NFIP have distributed the following funds and assistance in the State of Florida:

- NFIP policyholders have been paid nearly $855 million on more than 28,000 claims to repair and rebuild.
- The SBA has approved low-interest disaster loans of $1.3 billion to 34,800 businesses, private nonprofits, homeowners and renters who had hurricane-related losses.
- FEMA provided travel trailers and apartment units to 318 households in Collier, Hendry, Lee and Monroe counties. These temporary housing arrangements keep survivors as close as possible to their schools, work and places of worship while they work on their individual recovery.
- FEMA assisted displaced survivors temporary help with rental assistance and hotel room expenses.
- Households have received a total of $497 million to pay rent from FEMA.
- More than 27,000 persons have participated in FEMA- and state-funded hotel stays. FEMA picks up 75 percent and the state pays 25 percent.
- Survivors have received $173 million from FEMA for home repairs to make them habitable.
- Survivors also received nearly $68 million from FEMA to replace certain household items.
- Nearly $7.1 million in disaster unemployment assistance from FEMA has helped those whose employment was affected by the hurricane (FEMA 2018).

The community of Immokalee was highly devastated by the storm, largely due to the existing conditions in the town. The residents are mostly agricultural workers of limited means. It is a mostly low-income immigrant community surrounded by tomato fields and citrus groves. The housing is mostly rental units, and many of these are located in mobile home parks which suffered severe damage (Hartman 2017).

Although this federal funding is not related to a project per se, the large amount of construction, debris removal, and repurchasing of household items lost during the storm could contribute to cumulative impacts to the local economy, changes in demographics, sales taxes, and general development trends in Collier County.

#### *USACE Picayune Strand Restoration Project*

The Picayune Strand Restoration Project, the first Comprehensive Everglades Restoration Project (CERP) to begin construction, is being conducted in partnership with the South Florida Water Management District. When completed, the project will restore historic water flows that benefit coastal estuaries, recharge the aquifer, and protect the water supply, while maintaining current levels of flood protection. The restoration involves plugging of 48 miles of canals, removing 260 miles of crumbling roads, and constructing three major pump stations, all of which will restore more than 55,000 acres of natural habitat in an area once partially developed for an intended sprawling residential area (USACE 2018a).

#### *USACE Western Everglades Restoration Project (WERP)*

The original Comprehensive Everglades Restoration Plan (CERP) project identified to restore and reconnect the western Everglades ecosystem was called the Big Cypress/L-28 Interceptor Modification. The purpose of this project is to reestablish sheet flow from the West Feeder Canal across the Big Cypress Seminole Indian Reservation and into the Big Cypress National Preserve (BCNP), maintain flood protection on Seminole Tribal lands, and ensure that inflows to the North and West Feeder Canals meet applicable water quality standards. The project features include modification of levees and canals, water control structures, pumps, and stormwater treatment areas with a total storage capacity of 7,600 acre-feet located within and adjacent to the Miccosukee and Seminole Indian Reservations in Collier and Hendry Counties. This CERP component will serve as the starting point for the WERP and will be refined through the planning process (USACE 2018b).

#### *Immokalee Airport Environmental Protection Agency Brownfield Grant Assessment*

Provided through the U.S. Environmental Protection Agency (USEPA), the Brownfield Grant Fund allows for the allocation of funds to provide for the financial support to perform planning and action towards cleaning up these declared brownfield sites. Immokalee Airport was given the designation a Brownfield in 2008, which makes them qualified for funds that are under the Brownfields Redevelopment Act. Collier County Airport Authority (CCAA) applied for a grant to begin testing and planning in December 2016. Those efforts will be completed by the Regional Planning Council administering the program and procuring environmental consultants to carry out the task of the environmental testing and planning on the airport property. If, after the analyses are complete, the sites are determined contaminated, an additional grant request will be placed to perform clean-up and remediation for any identified sites (CCAA 2018).

#### *USACE Southern Golden Gate Estates Hydrologic Restoration Project (March 2001)*

The 2014 System Status Report of the Comprehensive Everglades Restoration Plan (CERP) indicates that the Southern Golden Gate Estates (SGGE) project is related to the Picayune Strand Restoration Project (PSRP). The PSRP is a component of CERP that is designed to restore hydrological and ecological function to the area once known as the Southern Golden Gate Estates (SGGE) and its surrounding public conservation lands. SGGE was once a portion of a large southwest Florida residential development initiated in the 1960s with the creation of over 270 miles of roads and 48 miles of major canals that were directly connected to the Gulf of Mexico. Cypress logging and canal construction dating to the 1940s and 1950s contributed to the degradation of the area's hydrology, causing over-drainage and discharges to downstream estuarine systems, and invasion of exotic vegetative communities. Residences within SGGE have been removed and associated raised land surfaces will be brought down to natural grade. The primary objective of the PSRP and SGGE is to establish the pre-development hydrologic regime which involves filling at least 50% of the length of the larger canals and eliminating impediments to reestablishing sheet flow (Everglades Restoration 2018, USACE 2001).

#### *4.15.2.1.2 State Projects*

##### *4.15.2.1.2.1 South Florida Water Management District (SFWMD) Projects*

The State of Florida has five water management districts which oversee drainage and restoration projects and planning. Collier County is in the South Florida District (SFWMD) (Florida Department of Environmental Protection [FDEP] 2018). Some of these projects have a federal sponsor or lead agency. Several of the active and future projects are located in Collier County. Table 4.15-2 presents the projects located in Collier County.

**Table 4.15-2: Projects Overseen by the South Florida Water Management District**

| Project ID # | Project Title | Lead Agency/ Sponsor | Expected Completion Date | Description |
|---|---|---|---|---|
| 2637 | BCB Curry Culvert Gate Retrofit | SFWMD | 12/2019 | The project encompasses the construction of a new locally and remotely operated water control structure in the Curry Canal, approximately 150 feet south of the Immokalee Road south right of way in Naples. |
| 2563 | BCB Cypress Canal Weir # 4A1 Retrofit | SFWMD | 12/2020 | The present Cypress Canal Weir # 4A1 consists of a fixed crest weir with two small bottom opening side-channel gates. The plan for retrofit of the weir will involve demolishing the existing structure assembly and construction of a fully gated water control structure with automated operating features. |
| 2578 | BCB Faka Union Canal Weir #6 Replacement | SFWMD | 12/2022 | The present Faka Union Canal Weir # 6 is a fixed crest weir with V notches. The present configuration of the structure provides limited draw-down capability for reduction of flood stages; and limited volume of conservation pool for maintenance of dry-season storage. The plan for replacement of the weir will involve demolishing the existing structure assembly and constructing a fully gated water control structure with remote operating features. |
| 2629 | BCB Faka Union Canal Weir No. 7 | SFWMD | 9/2022 | The Faka Union Canal Weir No. 7 is a fixed crest weir with a V-notch. The structure will be replaced with a design that provides more operational flexibility and will convert the site from manual to remote operations. |
| 2625 | BCB Golden Gate Canal Weir #4 Retrofit | SFWMD | 6/2019 | The present Golden Gate Canal Weir #4 consists of a fixed crest weir with two small bottom opening side-channel gates. This configuration of the structure provides limited draw-down capability for reduction of flood stages, and also limited volume of conservation pool for maintenance of dry season storage. The plan for retrofit of the weir will involve demolishing the existing structure assembly and construction of a fully gated water control structure with automated operating features. |

**Table 4.15-2: Projects Overseen by the South Florida Water Management District**

| Project ID # | Project Title | Lead Agency/ Sponsor | Expected Completion Date | Description |
|---|---|---|---|---|
| 2638 | BCB Golden Gate Canal Weir No. 5 | SFWMD | 9/2022 | The Golden Gate Canal Weir No. 5 is a fixed crest weir with two bottom opening sluice gates. The structure will be replaced with a design that provides more operational flexibility and will convert the site from manual to remote operations. |
| 2566 | CREW - Corkscrew Regional Ecosystem Watershed | SFWMD | TBD | The purpose of this project is two-fold: to protect the primary groundwater recharge area and wellfields for several Lee County utility providers; and protect the vast environmentally sensitive area that surrounds Corkscrew Swamp Sanctuary in Lee and Collier Counties. The Corkscrew Regional Ecosystem Watershed (CREW) serves as a primary tributary to Florida Panther National Wildlife Refuge and Fakahatchee Strand State Park. CREW also provides critical habitat for the Florida panther and numerous wading birds. To date approximately 29,709 acres have been acquired by the SFWMD; with 4,026 acres within the Southern Critical CREW component. The Florida Forever/Save Our Rivers project identifies a boundary of approximately 62,000 acres. Continuing activities include: control of exotic and invasive vegetation, treatment of 1,340 acres of exotic and invasive vegetation, applying fire in fire-dependent habitat, and prescribed burning of 2,500 acres. |

Source: SFWMD 2018

#### *4.15.2.1.2.2 Florida Department of Transportation Projects*

The Florida Department of Transportation has several planned and current projects in Collier County. Projects vary from pedestrian and street lighting to bridge construction. The following list briefly describes each project in Collier County.

##### *US-41 Sidewalk Improvements*

The FDOT's contractor, American Lighting and Signalization, Inc., has begun work to construct sidewalk on the east side of US 41 from Pine Ridge Road to Sandpine Drive. The project also includes construction of bus pads, curb, paving, milling, signalization and lighting. Work occurs during daytime hours. Lane closures may occur from 7 a.m. to 5:30 p.m. Monday through Friday (FDOT 2017a).

##### *Eighth Street Bridge*

The FDOT's contractor, Bergeron Land Development, Inc. began construction on November 27, 2017, on a new bridge within the Golden Gates Estates for 8th Street NE over the Cypress Canal. The work will occur during daytime hours from 7 a.m. to 5 p.m. Monday through Friday, weather permitting. The project also consists of roadway improvements, constructing sidewalks on the west side, and shoulders. Lane closures and construction vehicles entering and exiting the roadway are expected (FDOT 2017b).

#### *I-75 / SR-951 Interchange reconstruction*

The FDOT District One is preparing design plans to reconstruct the I-75 interchange with SR 951 (Collier Boulevard) in Collier County. The new interchange will include two new ramps over SR 84 (Davis Boulevard) to provide direct interstate access. The existing I-75 bridges over SR 951 will remain. New bridges to accommodate ramp traffic will be constructed adjacent to the existing I-75 bridges over SR 951 (FDOT 2018a).

#### *SR-951 Widening*

The FDOT District One has completed a Project Development and Environment (PD&E) study of a 0.76 mile segment of SR 951 from south of Manatee Road to north of Tower Road in Collier County. The study evaluated widening the four-lane divided road to a six-lane divided road to handle future expected traffic (FDOT 2018b).

#### *Immokalee Road and Randall Boulevard Improvements*

The FDOT, District One is conducting a PD&E study of the intersection of Immokalee Road (CR 846) at Randall Boulevard in Collier County. The study will involve the evaluation of several intersection concepts to enhance traffic operations and safety conditions based on current and future travel demands (FDOT 2018c).

#### *SR-29 Widening*

The FDOT, District One, is conducting a PD&E Study for improvements to SR 29 in Collier County. The project limits extend a distance of approximately 17 miles along SR 29 from Oil Well Road to south of SR 82. The proposed roadway improvement consists of increasing capacity on SR 29 by evaluating the widening of the existing two-lane undivided segment of SR 29 to four lanes, as well as the study of an alternative corridor(s) that bypasses downtown Immokalee (FDOT 2018d).

#### *SR-29 Widening, Segment 4*

This project is divided into four segments for design and construction phases, which includes this segment (segment 4). The project limits are from SR 82 to the Hendry County Line, a distance of approximately 2 miles. FDOT is preparing design plans to expand SR 29 from a two-lane undivided roadway to a four-lane divided roadway. SR 29 serves as Collier County's primary link to the north and is designated as a rural principal arterial of the County FDOT 2018e).

#### *SR-84 Improvements*

The FDOT District One is preparing design plans for improvements to SR 84 (Davis Boulevard) from ***County Barn Road to Santa Barbara Boulevard, in Collier County. These plans include milling and*** resurfacing the existing road, adding curb and gutter to the median and outside edge of pavement, constructing sidewalk on both sides of the road, accommodating bicycles, and installing a mast arm and crosswalks at County Barn Road. Following the road construction, Collier County will install landscaping in the median of SR 84, within the project limits (FDOT 2018f).

#### *SR-82 Widening*

The FDOT, District One, is holding a public hearing regarding the Design Change and Right-of-Way Authorization Reevaluation of SR 82 from Gator Slough Lane to SR 29 in Collier County. The project corridor is approximately 3.2 miles long and was included in the PD&E study for the widening of approximately 23 miles of SR 82 from Lee Boulevard (CR 884) to SR 29 in Lee, Hendry and Collier counties. The study was approved by the Federal Highway Administration on October 23, 2009 (FDOT 2018g).

#### *4.15.2.1.2.3 Developments of Regional Impact*

For over 40 years, Developments of Regional Impact (DRIs) have been a staple of large-scale real estate development in Florida, necessitating state and regional review to approve even the smallest changes to the 700-plus still-active DRIs throughout the state. On April 6, 2015, Governor Rick Scott signed House Bill 1151 into law as Chapter 2018-158, Laws of Florida, returning local control of large-scale

development review to municipalities and counties (JDSUPRA 2018). There are two large DRI projects in Collier County (Florida Department of Economic Opportunity 2015).

***Town of Ave Maria***

In the early 2000s a new town was planned for development. The planned development was unique in that the residential areas would be centered around a Church and a University. Unlike usual development, where growth occurs over time, the entire town would be constructed at once, where nothing formerly existed. In 2009, Ave Maria was the largest construction site in the country (Ave Maria Real Estate and Home Services 2007). In 2018, Ave Maria Development reported strong first quarter new home sales, resulting in its distinction as the fastest growing single-family community in the Naples/Fort Myers market. The development has earned this title from MetroStudy for the past 13 consecutive quarters. The master-planned community, has outsold all new single-family home communities in both Collier and Lee counties, counting more than 1,400 new home sales since 2013 (Naples News 2018).

#### *4.15.2.1.3 County Projects and Plans*

##### *4.15.2.1.3.1 Rural Land Stewardship Area (RLSA)*

The goals of the Collier County Rural Land Stewardship Area (RLSA) are to protect agricultural activities, to protect resources from unrestrained growth (wetlands, protected species, wildlife habitat), and to direct growth to appropriate locations through creative land use planning techniques. The program was established in 2002 after the County Comprehensive Plan was challenged by environmental groups in 1999. In 2000, the governor ordered a study using a collaborative planning process which would ameliorate the flaws in the existing County plan, which included 300 square miles of land for which no strategy had been established. To date, the program has preserved the following areas:

- Collier County approved the first new RLSA town -Ave Maria (2004-2006), resulting in 17,242 Stewardship Sending acres preserved
- A five-year review committee has reported to BCC (2007-2010), resulting in 32,419 Stewardship Sending acres preserved
- The Rural Lands West town plan was submitted to the County for review (2015), resulting in 2,716 Stewardship Sending acres pending approval (Collier County 2018b)

The Future Land Use Overlap Map shows Land Use Classifications including:

- Habitat Stewardship Area (HSA) –green
- Flowway Stewardship Area (FSA) –dark blue
- Water Retention Area (WRA) –light blue
- Open –pink

The map and the plan provide guidance for locations of future development, which can only occur in the ‘Open’ designations. Stewardship Credits are the “currency” on which the plan operates. Credits are created from natural resource value in Stewardship Sending Areas (SSAs) - preserved without development. Credits must be acquired by builders of new sustainable communities in Receiving Sending Areas (RSAs) - open or developable. Landowner’s existing rights are retained, but density and intensity increases require use of Credits. In this fashion, regional scale conservation and management occurs without requiring public acquisition (Collier County 2018b). The RLSA encompasses the entire ECMSHCP project area and includes already approved SSAs. Figure 4.15-1 shows the currently approved SSAs, Habitat Areas, Flowway Areas, Water Retention Areas and Areas open for development. See Section 1.2.3.2 for a description of the Ave Maria and Rural Land developments.

##### *4.15.2.1.3.2 Immokalee Community Redevelopment Agency (CRA)*

Located in northeastern Collier County, the Immokalee Community is located approximately 45 miles from the County seat of Naples. This rural un-incorporated area is primarily agricultural. There is one major roadway - Immokalee Road (CR 846) - into the community from Naples. State Road 29 provides access into the Community from the northern counties of Lee and Hendry. Although there are approximately

16,764 acres of land within the redevelopment area, 60% is currently in agricultural use. The remaining land is a mixture of residential, commercial and industrial uses (Collier County 2018c). The community is completely surrounded by the ECMSHCP area.

The Collier County Community Redevelopment Agency (CRA) is currently focusing its redevelopment efforts on the area of Immokalee. Chapter 163, Part II of the Florida Statutes provides Collier County with the means to achieve growth management objectives by redirecting growth to areas where urban services are provided. If the services exist but are inadequate, CRA provides the means to improve the services, thereby revitalizing the neighborhood or business district and encouraging the provision of affordable quality housing within the urban centers (Collier County 2018c).

For the past several years, staff from the Comprehensive Planning Department has been working with the CRA and the Immokalee community. This community is very different in character from the rest of the County, but similar in the need to bring in more investment and to improve the public perception of the area. The Strategic Plan consists of several subdistrict overlays:

- Main Street Overlay Subdistrict
- Immokalee Central Business Overlay Subdistrict
- Farm Market Overlay Subdistrict (FMOSD)
- Jefferson Avenue Commercial Overlay Subdistrict (JACOSD)
- S.R. 29 Commercial Overlay Subdistrict (SR29COSD)
- Agribusiness Overlay Subdistrict (AOSD) (Collier County 2018c)

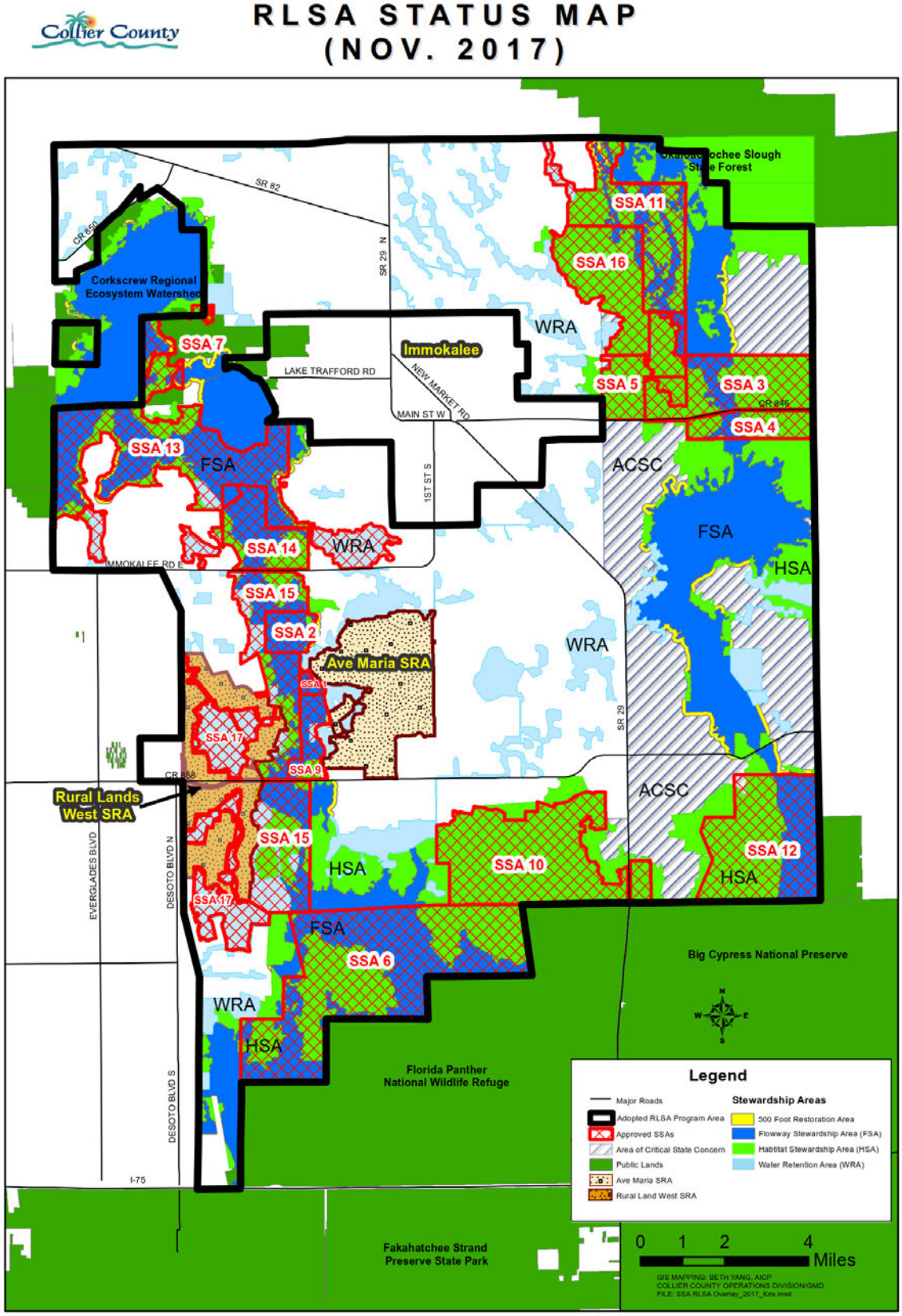



**Figure 4.15-1. Collier County RLSA Map. Source: Collier County 2017**

The plan is extensive and has the following goals:

- Develop a circulation pattern for the community, which will provide safe and efficient access throughout the community. This network will include a loop road to provide the separation of commercial truck traffic from tourist designated places and residential developments.
- Enhance the physical appearance of properties within the Main Street area.
- Provide opportunities for adequate, safe, and affordable housing. Encourage the development of both affordable rental and home ownership through rehabilitation and new construction.
- Develop a program to address the replacement of existing old mobile homes with newer mobile home units or module homes.
- Provide opportunities for capturing the tourist trade by creating eco-tourism opportunities at Lake Trafford, Pepper Ranch, and Roberts Ranch.
- Create adaptive development standards in each of the sub districts identified in the Immokalee Overlay District to permit flexibility and incentives for redevelopment and development.
- Encourage neighborhood stability through the implementation of additional streetlights, sidewalks, and landscaping throughout the community.
- Improve the drainage system throughout the community and improve the appearance and function of the open drainage swales throughout the community.
- Diversify the economy by encouraging the recruitment of businesses to the Immokalee Regional Airport and Industrial Park.
- Improve both the landside and airside facilities at the Immokalee Regional Airport and Industrial Park to meet the future demands for all forms of aviation and business development activities (Collier County 2018c).

#### *4.15.2.1.3.3 Immokalee Regional Airport*

Immokalee Regional Airport (IMM) is undertaking Airport Master Plan (AMP) and Airport Layout Plan (ALP) updates. The purpose of this study is to provide a 20-year development program that will create the safe, efficient, economical, and environmentally responsible airport facility capable of facilitating the demand for aviation services which can be reasonably expected, meet the development goals of the Collier County Airport Authority (CCAA), and create additional public value for residents in the Immokalee area and the entire aeronautical community. These updates will provide CCAA and IMM with a method and proposed schedule for correcting identified airport design deficiencies as well as to accommodate future growth in aviation demand. This report was completed based on applicable Federal Aviation Administration Advisory Circulars and Florida Department of Transportation Guidebooks. CCAA's specific goals for this analysis were to: understand the existing and future fleet mix demands; understand the future operational demand and capacity gaps; and create a viable and sustainable path for airport development and future capital investment (Collier County Airport Authority 2018).

Proposed airfield projects within the Layout Plan include runway extensions, taxiway extensions, taxiway fillets, a future parallel taxiway on the north side, a taxiway connecting both existing runways, and a possible turf runway. The plan also includes land based improvements that would encourage private development on airport property including new hangars and road extensions (Collier County Airport Authority 2018).

#### *4.15.2.1.3.4 Long Range Transportation Plan 2040*

The Collier Metropolitan Planning Organization completed a 2040 Long Range Transportation Plan (LRTP). The plan intends to identify necessary transportation improvements to ensure efficient operations while considering factors such as environmental impact, economic development, etc. This study identified two major projects which could have a significant impact on transportation around the Immokalee Regional Airport. High levels of congestion are foreseen on the SR-29 in and around Immokalee. A widening of SR-29 and a bypass is planned for the Immokalee area, which if completed, will bring transient vehicular traffic out of the congested downtown residential areas. There are currently three proposed alternatives to the SR-29 bypass. Figure 4.15-2 depicts the potential routes presented at the November 2017 project public meeting (Collier County Airport Authority 2018).

**Figure 4.15-2. SR-29 Bypass Alternatives. Source: Collier County Airport Authority 2018**

The Collier Metropolitan Planning Organization has multiple transportation plans leading up to the year 2040. Most of these are road widenings, bridge construction and intersection/interchange remodeling or renovation projects (Collier Metropolitan Planning Organization 2016). Table G-1, Appendix G presents a list of projects that are fully or partially funded through the construction stage. Figure G-1, Appendix G shows the overall Collier County map with the funded projects.

#### *4.15.2.1.4 Private Residential Developments*

##### *Arrowhead Reserve at Lake Trafford*

The Arrowhead Reserve at Lake Trafford is a residential development in Immokalee. As home prices continue to rise in Collier County, Arrowhead Reserve in Immokalee takes its place as one of the most affordable communities in the area offering new construction homes. It is the most affordable development in the area. Homes at Arrowhead Reserve begin at $168,900 for the Girasol, a design with three bedrooms and two baths in 1,297 air-conditioned square feet, with a covered entry way and two-car garage, the home has a total of 1,711 square feet (Naples Daily News 2017b).

##### *Milano Lakes Apartments, Naples:*

Milano Lakes is a new luxury apartment community off Collier Boulevard, north of Rattle-Snake Hammock Road at The Lord's Way in South Naples. The apartments have the design and amenities of a single-family home. Designed as an active community, Milano Lakes includes a fitness center, a 5,488-square-foot clubhouse, a swimming pool and pool deck complete with cabana umbrellas. Located on a 23-acre

site, Milano Lakes will include 296 apartment homes in eight buildings when completed, offering one-, two- and three-bedroom floor plans. Elevators in each building make apartment access convenient. Within the community, 96 detached garages are planned (Naples Daily News 2018b).

***Sapphire Cove***

Sapphire Cove is a new residential community being developed off Collier Boulevard and Rattlesnake-Hammock Road. Construction of the furnished model is anticipated to be complete by fall of 2018. Sapphire Cove is designed to appeal to a mixture of family oriented and active adult lifestyles. The 30-acre site will include only 75 single-family homes on generous lots measuring 57 feet wide by 140 feet deep. The community is bordered by a preserve and is centered around a three-acre lake fringed with native grasses and vegetation. The Sapphire Cove property is part of the Hacienda Lakes Community Development District and is accessed via the Lord's Way approximately half a mile east of Collier Boulevard. There are eight home plans, with both single-story and two-story designs, ranging from a three-bedroom plus a study home with 1,915 square feet to an expansive plan with four bedrooms and three and one-half baths in 3,178 square feet (Naples Daily News 2018c).

***Golden Gate Estates***

FL Star has purchased acreage in Golden Gate Estates. The parcel includes three home sites, each site encompassing 2.5 acres. FL Star plans to construct single-family homes on the lots, drawing from the designs and floor plans now in the company's portfolio. Homes will be constructed by FL Star Construction, a subsidiary (Naples Daily News 2018d).

***Hacienda Lakes***

Azure at Hacienda Lakes by Toll Brothers is a new luxury, gated master-planned community off Collier Boulevard and Rattle-Snake Hammock Road. Azure will include more than 400 homes. The Serino Caribbean is priced at $599,995, and has three bedrooms, two-and-one-half baths, a foyer, formal dining room, and a private study. The Massiano Caribbean is priced at $589,995, and has three bedrooms, three-and-one-half baths, and a two-car garage. Additional West Florida Toll Brothers communities include Bonita Lakes in Bonita Springs, Palazzo at Naples in North Naples, and coming this fall, The Isles at Lakewood Ranch near Sarasota (Naples Daily News 2018e).

***Palazzo at North Naples***

Palazzo at Naples consists of 85 luxurious, single-family homes ranging from 2,131 to over 4,000 sq. ft. with close proximity to the beaches and golf courses. All exterior yard maintenance, including irrigation, fertilization, and lawn care as well as the in-home security system's monthly monitoring are included in the homeowners' dues (Toll Brothers 2018).

***Marquesa Isles –Naples***

The proposed Marquesa Isles, a new community by Neal Communities, southwest Florida's premier, private homebuilder, has received zoning approval from the Collier County Commission. . The community will consist of 156 villas on approximately 38 acres in Naples. The neighborhood will also feature an amenity building, a resort-style pool and dog park. The development is located off County Barn Road, and construction on Marquesa Isles was slated to begin in fall 2017 (Sarasota Patch 2017).

## 4.15.3 Cumulative Impact analysis

### *4.15.3.1 Environmental Setting*

#### *4.15.3.1.1 General Geography*

Cumulative impacts to general geography, topography, climate and the regional ecosystem from the proposed action and preferred alternative are excluded from further analysis and are not included in this chapter.

#### *4.15.3.2 Land Use*

##### *4.15.3.2.1 Alternative 1 - No Action*

Under the No Action Alternative, changes to land use within the ECMSHCP area would occur as described in Section 4.3.5.1, with development expected to progress, especially on prime, highly developable parcels with scenic views and favorable settings. Changes to land use in the area surrounding the ECMSHCP area are likely to continue with limited planning and based on individual landowner projects. Cumulatively, this could lead to increased urban sprawl of low density residentialdevelopments, with associated commercial development and attendant transportation and municipal utility infrastructure.

Cumulatively, under the No Action Alternative, as landowners develop land or conduct mining or oil and gas exploration on their properties in the ECMSHCP area and in the region, land cover would convert from agricultural or non-developed land use types (forested areas, grasslands, etc.) to developed land use types (including homes, facilities, parking lots, and roadways). As sites are cleared for development in the ECMSHCP area and in the region, substantial reduction in the amount of wetland and agricultural land use types are likely. As a result of present and future projects, the agricultural and rural character of the region will change to an urban or suburban environment.

##### *4.15.3.2.2 Alternative 2 – Issuance of ITP for Proposed ECMSHCP*

Under Alternative 2, extensive preservation and perpetual maintenance of lands with high natural resource value would be provided for people and sensitive species, providing diversity of land use and land cover as continued population growth spurs development on other lands in the region. Portions of the EMSCHCP area may be developed, but development will be condensed and planned such that minimal areas are impacted, leading to less land use change within the project area. Development will likely proceed outside the EMSCHCP as planned under Collier County regulations. Cumulatively, the EMSCHCP area would largely remain in agricultural or conservation use, while present and future planned development outside the EMCSHCP continues to reduce the farmland in the region.

#### *4.15.3.3 Geology and Soils*

##### *4.15.3.3.1 Alternative 1 - No Action*

Under the no action alternative, the ECMSHCP would not be created and development would proceed under individual projects. Cumulative impacts to geology and soils could occur when multiple projects occur within the proposed ECMSHCP area. Considering individual project development in combination with the current and proposed development projects in Collier County, potential adverse impacts are possible. For example, if road projects and small scale residential development were to occur within the ECMSHCP area, more earth and soils would be moved than if only the road project were to occur. And, although the current base zoning allows one residence per five acres, residential development within lands designated as “Open” in the RLSP, approximately 71,275 acres, can occur at much greater densities; thus measurably contributing to the possible cumulative impacts.

In addition, earth mining is not regulated under the RLSA program, and if significant earth mining activities were to occur along with the potential roads, residences, and other non-regulated development, cumulative impacts to earth and soils could occur. Without the ECMSHCP, removal of soils from the proposed ECMSHCP area would not be limited to the Covered Activities area. Preserved locations would continue to prohibit earth mining under the no action alternative, and cumulative impacts to earth and soils could occur anywhere within the RLSP Open areas.

##### *4.15.3.3.2 Alternative 2 – Issuance of ITP for Proposed ECMSHCP*

Under Alternative 2, the USFWS would issue the ITP for the proposed ECMSHCP area. Under this alternative, the ECMSHCP and resulting agreements with ECPO landowners seeking to develop available acreage would essentially minimize significant cumulative impacts to geology and soils. The issuance of the ITP requires that significant acreage be preserved in its existing land use or be dedicated

to habitat conservation. Project and drainage planning, in conjunction with other federal and state requirements for development, would further reduce cumulative impacts associated with the movement or removal of existing earth and soils. Therefore, under this alternative, smaller cumulative impacts to earth and soils could occur in general than under the no action alternative.

#### *4.15.3.4 Cultural and Historic Resources*

##### *4.15.3.4.1 Alternative 1 - No Action*

Given the history of the area, there is a probability for the presence of cultural resources within the proposed project site and in the vicinity that could be affected by the proposed actions. Past actions have likely caused some degree of disturbance to cultural resources. For example, land development, forestry, and oil related activities have likely impacted cultural resources, particularly if these actions have not been subject to federal or state historic preservation laws and regulations. Some of these past actions are ongoing and may continue throughout the period of analysis and into the future. Under the No Action Alternative, consideration of the potential effects of these activities to cultural resources is not guaranteed, a condition that would not be expected to contribute to the preservation of cultural resources. In addition, activities that are not subject to federal or state historic preservation laws and regulations would not require any level of consultation with the federally recognized Native American tribes, which could result in negative impacts, such as degradation or destruction, to resources of concern to the tribes.

Cumulative effects can include loss of resources prior to the development of better research techniques, loss of interpretive value, and incremental loss of the cultural resource inventory due to development activities and natural processes. Under the no action alternative, current activities, such as agriculture and sand mining may continue, with little or no regulation regarding historic and/or archeological resources. Cumulatively, with respect to all the development projects in the county, the potential for more adverse impacts to cultural resources exists, as there is currently little regulation within the ECMSHCP regarding historic or archeological resources. Unless a property or structure is already on the National Register of Historic Places or is identified as tribal land, no regulation would apply to developing or mining within the ECMSHCP. Cumulative losses of cultural resources are possible due to the high level of development in the county overall.

##### *4.15.3.4.2 Alternative 2 – Issuance of ITP for Proposed ECMSHCP*

Given the history of the area, there is a probability for the presence of cultural resources within the proposed ECMSHCP and in the vicinity that could be affected by the proposed actions. Under Alternative 2, consultation with the Florida SHPO regarding avoidance, minimization, and mitigation measures would be required to determine the potential for development to effect cultural resources in and around the proposed ECMSHCP. This requirement provides enhanced protection of cultural resources in the proposed ECMSHCP and its vicinity, as compared to the No Action Alternative. Cumulative impacts to cultural resources due to development in the county would be minimized under this alternative compared to the no action alternative. Cultural resources would be more regulated and potentially preserved with the additional layer of regulation.

#### *4.15.3.5 Biological Resources*

##### *4.15.3.5.1 Ecological Communities*

###### *4.15.3.5.1.1 Alternative 1 - No Action*

Under the No Action Alternative, changes to ecological communities within the MSHCP area would occur as described in Section 4.9.2.1, with development expected to continue, especially on upland agricultural lands, and associated reductions in the extent of natural ecological communities. Changes to ecological communities in the area surrounding the MSHCP area are likely to continue with limited planning and based on individual landowner projects. Cumulatively, this could lead to changes in the extent and diversity of ecological communities in the region. Ecological communities also could become more fragmented over time as individual development areas may disrupt existing connections between habitats. The majority of the lands in the MSHCP area and surrounding areas that are not protected from development in the extensive preserves, parks, and other conservation areas of the region are used for

agriculture. Development would likely occur mainly on agricultural lands and would have limited impacts on natural ecological communities. Thus, adverse cumulative impacts on ecological communities under the No Action Alternative would likely be below significant levels.

#### *4.15.3.5.1.2 Alternative 2 – Issuance of ITP for Proposed ECMSHCP*

Under the Proposed Alternative, as described in Section 4.9.2.2, the acreages covered by the ecological community types and land cover/land use classes that currently exist within the MSHCP area would likely change minimally as a result of future planned development within the MSHCP area. Changes to ecological communities in the area surrounding the MSHCP area are likely to continue with limited planning and based on individual landowner projects. Cumulatively, this could lead to changes in the extent and diversity of ecological communities in the region. Ecological communities also could become more fragmented over time as individual development areas may disrupt existing connections between habitats. The majority of the lands in the MSHCP area and surrounding areas that are not protected from development in the extensive conservation areas of the region are used for agriculture. Development would likely occur mainly on agricultural lands and would have limited impacts on natural ecological communities. Thus, adverse cumulative impacts on ecological communities under the Proposed Action would likely be below significant levels.

### *4.15.3.5.2 General Wildlife*

#### *4.15.3.5.2.1 Alternative 1 - No Action*

Under the No Action Alternative, changes affecting general wildlife within the MSHCP area would occur as described in Section 4.9.3.1, with development expected to continue, especially on upland agricultural lands, and associated reductions in the extent of natural habitats available to wildlife. Changes to habitat affecting wildlife in the area surrounding the MSHCP area are likely to continue with limited planning and based on individual landowner projects. Cumulatively, this could lead to changes in the extent and diversity of habitats and the numbers and diversity of wildlife in the region. Habitats also could become more fragmented over time as individual development areas may disrupt existing connections between habitats, inhibiting the ability of wildlife populations to expand and interact. Multiple layers of planning activity (federal, state, and county) have established extensive preserves, parks, refuges, management areas, and other conservation areas in the region surrounding the MSHCP. The majority of the lands in the MSHCP area and surrounding areas that are not protected from development in these conservation areas are used for agriculture. Development would likely occur mainly on agricultural lands, which support lower numbers and diversity of wildlife than natural habitats; thus, it is expected that it would have limited impacts on general wildlife. Overall, adverse cumulative impacts on general wildlife under the No Action Alternative would likely be below significant levels.

#### *4.15.3.5.2.2 Alternative 2 – Issuance of ITP for Proposed ECMSHCP*

Under the Proposed Alternative, changes affecting general wildlife within the ECMSHCP area would occur as described in Section 4.9.3.2. Traditional, historic, and ongoing rural land uses within the ECMSHCP area and surrounding areas (primarily agriculture and ranching) would continue. Within the ECMSHCP area, Covered Activities primarily would occur within previously cleared agricultural areas. Outside the ECMSHCP area, development activities also would likely occur mainly on agricultural lands, though undeveloped uplands also could be developed in areas outside the extensive public conservation lands of the region. General wildlife would benefit from the use of habitats preserved for Covered Species within the ECMSHCP area and within conservation lands on and outside of the ECMSHCP area. These wildlife species are generally common in southwest Florida, and their populations would not be notably reduced under this alternative. Therefore, cumulative impacts on general wildlife under the Proposed Action would likely be below significant levels.

### *4.15.3.5.3 Wildlife Habitat Linkages and Corridors*

#### *4.15.3.5.3.1 Alternative 1 - No Action*

Under the No Action Alternative, changes affecting wildlife habitat linkages and corridors within the ECMSHCP area would occur as described in Section 4.9.4.1. No ITP for the covered species would be issued, and the ECMSHCP would not be implemented. Historical land uses and development would continue on a project-by-project basis both within and outside of the ECMSHCP area, subject to traditional environmental reviews if required, but with no predefined development pattern no guarantee of

preservation of additional conservation areas. Potential impacts from future disjointed development and the possible absence of additional conservation areas within the ECMSHCP area and surrounding areas could adversely impact wildlife species because wildlife corridors might not be preserved to allow for wildlife movement and dispersal between public conservation lands and other large areas of habitat. Under the No Action Alternative, there would be no planned preservation of wildlife corridors to provide permanent linkages between existing public conservation lands. Additional development in areas on and outside of the ECMSHCP area could further remove these linkages within the region. Because these corridors are important to the long-term survival and recovery of the Florida panther and some other Covered Species, the cumulative impacts of the No Action Alternative on wildlife habitat linkages and corridors could be significant.

#### *4.15.3.5.3.2 Alternative 2 - Issuance of ITP for Proposed ECMSHCP*

Under the Proposed Alternative, changes affecting wildlife habitat linkages and corridors within the ECMSHCP area would occur as described in Section 4.9.4.2. The ECMSHCP would preserve, through permanent conservation easements, wildlife dispersal corridors that provide important linkages between existing public conservation lands on and off the ECMSHCP that preserve habitat for the Florida panther and other rare and general wildlife species. These areas within the ECMSHCP area would function as regional wildlife corridors, allowing for wildlife movement between existing public conservation lands in southwest Florida outside of the ECMSHCP area, such as the FPNWR, BCNP, CREW, and OSSF, Dinner Island Ranch Wildlife Management Area, and Spirit of the Wild Wildlife Management Area. The conservation and management of these habitat linkages within the ECMSHCP area would provide important ecological benefits for the Florida panther, other Covered Species, and other general wildlife. Preservation of permanent wildlife corridors over time would provide linkages to conservation lands that would benefit the movement and dispersal of many wildlife species across the region. Thus, cumulative adverse impacts on wildlife habitat linkages or corridors under the Proposed Alternative would likely be below significant levels.

### *4.15.3.5.4 Federally and State Listed Species, Candidate Species, and Species Under Review*

#### *4.15.3.5.4.1 Alternative 1 - No Action*

Under the No Action Alternative, changes affecting Covered Species (federally and state-listed species, candidate species, species under review for federal listing, and other sensitive species) within the ECMSHCP area would have effects on each species as described in Section 4.10. No ITP for the 19 Covered Species would be issued, and the ECMSHCP would not be implemented. Historical land uses and development within the ECMSHCP area would continue on a project-by-project basis, subject to traditional environmental reviews if required, with no predefined development pattern or guarantee of preservation of additional conservation areas. Based on the potential impacts from future disjointed development and the potential absence of additional conservation areas and wildlife habitat linkages and corridors preserved within the ECMSHCP area, direct and indirect impacts on four federally listed species (the NCC, WS, FP, and EIS) were identified as potentially being significant. When all of the current and proposed projects and plans in the region surrounding the ECMSHCP area are considered together with the additional development likely to occur within and outside of the RLSA program, the potential adverse cumulative impacts on federally listed species are expected to be compounded. Therefore, cumulative impacts on these four species are likely to be significant, and cumulative impacts on another federally listed species, the ESK, also are likely to be significant. The cumulative impacts on the state-listed species, which include one federal candidate species, and the species under federal review, are likely to be less than significant within the region surrounding the ECMSHCP area.

#### *4.15.3.5.4.2 Issuance of ITP for Proposed ECMSHCP Alternative*

Under the proposed alternative, changes affecting covered species within the ECMSHCP area would have effects on each species as described in section 4.10. Based on the implementation of the ECMSHCP and the benefits that it would provide for covered species by planning and clustering development, limiting habitat loss and fragmentation, maintaining habitat linkages and corridors, and preserving upland and wetland habitats, direct and indirect impacts were not identified as potentially being significant for any of the covered species. When all of the current and proposed projects and plans in the region surrounding the ECMSHCP area are considered, the potential adverse cumulative impacts on listed species are expected to be increased. Under the proposed action, direct and indirect impacts on

four federally listed species were considered likely to be below significant levels, and impacts were expected to be negligible for the remaining covered species. Because the proposed action would have generally beneficial effects on the covered species, federal and state laws provide protections to these species, substantial portions of the surrounding region are preserved in public conservation lands, and most of the development outside the ECMSHCP area likely would occur on agricultural or previously developed lands, cumulative impacts on covered species under the proposed action are likely to be below significant.

## 4.16 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Pursuant to NEPA regulations (40 CFR 1502.16), an EIS must consider the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. Short-term uses are those that determine the present quality of life for the public. The quality of life for future generations depends on long-term productivity, the capability of the environment to provide on a sustainable basis.

The No Action Alternative and Alternative 2 would result in an irreversible loss of habitat for the covered species in the ECMSHCP area due to human population growth and the associated increase in land development. However, Alternative 2 would take less high quality habitat to development and protect more suitable habitat for the covered species in the long term through the acquisition and management of higher quality habitat in perpetuity.

## 4.17 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Under 40 CFR 1502.16, an irreversible or irretrievable commitment of resources refers to impacts on or losses to resources that cannot be recovered or reversed. Examples include permanent conversion of wetlands or loss of cultural resources, soils, wildlife, or agricultural production. Irreversible is a term that describes the loss of future options and primarily applies to the impacts of use of non-renewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over long periods of time. Irretrievable is a term that applies to the loss of production, harvest, or use of renewable resources. For example, if farmland is used for a non-agricultural event, some or all of the agricultural production from an area of farmland is lost irretrievably while the area is temporarily used for another purpose. The production lost is irretrievable, but the action is not irreversible.

Under the No Action Alternative and Alternative 2, the loss of habitat for threatened and endangered species to future development (residential, commercial, and earth mining) would result in irreversible habitat loss. However, under Alternative 2, development on approximately 107,000 acres would be deed restricted and no more intensive than the types of agricultural, ranching, and other traditional rural land use activities that have occurred historically throughout the ECMSHCP area. The funding for conservation activities undertaken through the Marinelli Fund to benefit the Florida panther and other covered species would be irreversible and irretrievable.

To date, no irreversible or irretrievable loss of resources associated with the proposed project has occurred. Further, the USFWS will not approve a proposal that would result in irreversible or irretrievable loss of resources prior to publication of the Record of Decision (ROD), and its decision to issue, or deny issuance, of any ITPs.

## 4.18 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable impacts are defined as those that meet the following two criteria: 1) there are no reasonably practicable mitigation measures to eliminate the impacts and 2) there are no reasonable alternatives to the proposed project that will meet the purpose and need of the action, eliminate the impact, and not cause other or similar significant impacts (40 CFR 1500.2(e)). Unavoidable adverse impacts are those that would occur after implementation of incorporated best management practices, minimization, and mitigation measures. Unavoidable adverse impacts do not include temporary or permanent impacts, which would be mitigated.

It is expected that development in the ECMSHCP area would continue as trends predict under the No Action Alternative, regardless of whether the ITPs are issued by USFWS or not. Since impacts associated with the Covered Activities would be the same for the No Action Alternative and Alternative 2, the differences in the impacts between the two alternatives would be limited to those associated with the location of land development activities and land preservation. Therefore, both alternatives would result in unavoidable impacts that would include loss to ecological communities, vegetation, native wildlife, protected species habitat, and transportation, as well as some impacts to water resources and air quality.

## 4.19 POSSIBLE CONFLICTS BETWEEN THE PROPOSED ACTION AND EXISTING LAND USE PLANS, POLICIES, AND CONTROLS

Section 1502.16(c) of the CEQ NEPA regulations (40 CFR 1502.16(c)) requires the discussion of environmental impacts, including "possible conflicts between the proposed action and the objectives of federal, regional, state, and local (and in the case of a reservation, Indian tribe) land use plans, policies, and controls for the area concerned." Where an inconsistency exists, the NEPA document should describe the extent to which the agency would reconcile its action with the plan (see 40 CFR 1506.2(d)). Sections 1.6 and 1.7 in the ECMSHCP identify the applicable federal, state, and local policies that are related to the proposed project. The following section identifies the applicable federal, state, and local plans that are related to the proposed project.

### FEDERAL PLANS

#### Comprehensive Everglades Restoration Plan

Everglades restoration is an ongoing effort to remedy decades of destructive practices while balancing the needs of South Florida's natural environment with urban and agricultural needs. The Comprehensive Everglades Restoration Plan (CERP) provides a framework and guide to restore, protect, and preserve the water resources of central and southwest Florida, including the Everglades. CERP covers 16 counties over an 18,000-square-mile area (Figure 4.19-1). CERP was approved in the Water Resources Development Act of 2000 (Public Law 106-541). At a cost of more than $16 billion and with a more than 35-year timeline, CERP is the largest hydrologic restoration project ever undertaken in the United States. Implementation of CERP is a multi-agency effort involving both federal and state agencies such as the Corps and the SFWMD supported by other agencies such as the FDEP, Everglades National Park, and others (OERI 2018).

Due to the construction of drainage canals and manmade connection of lakes to rivers, fresh water that historically flowed from central Florida to the Everglades was redirected to flows directly to the Atlantic Ocean and the Gulf of Mexico. The goal of CERP is to redirect the waters to areas that need it the most. The goal of CERP is to redirect the majority of the water to environmental restoration. The remaining water will benefit cities and farmers by enhancing water supplies for South Florida's population.

There are no CERP projects planned for water resource management or restoration within the area covered by the ECMSHCP; however, two current CERP projects are located in close proximity to the ECMSHCP area. The Picayune Strand Restoration Project is located less than 1 mile south of the southern boundary of the ECMSHCP area (Figure 4.19-1). The project area is located west of SR 29 in the West Collier drainage basin, where most of the surface water in the project area flows south into Picayune Strand State Forest via drainage canals. However, the objective of the Picayune Strand Restoration Project is to reestablish the historical sheetflow of surface water. The project includes 83 miles of canal plugs, 227 miles of road removal, and the addition of pump stations and spreader swales to aid in wetland restoration.

The second CERP project in proximity to the ECMSHCP area is the Western Everglades Restoration Project (WERP). The purpose of this restoration project is to improve the quantity, quality, timing, and distribution of water needed to restore and reconnect the western Everglades ecosystem. The plan seeks to achieve this by reestablishing sheetflow from the West Feeder Canal across the Big Cypress Seminole Indian Reservation and into BCNP, while maintaining flood protection on Seminole Tribal lands, and ensuring that inflows to the North and West Feeder Canals meet applicable water quality standards. The West Feeder Canal is located approximately 6.5 miles east of the ECMSHCP area (Figure 4.19-1).

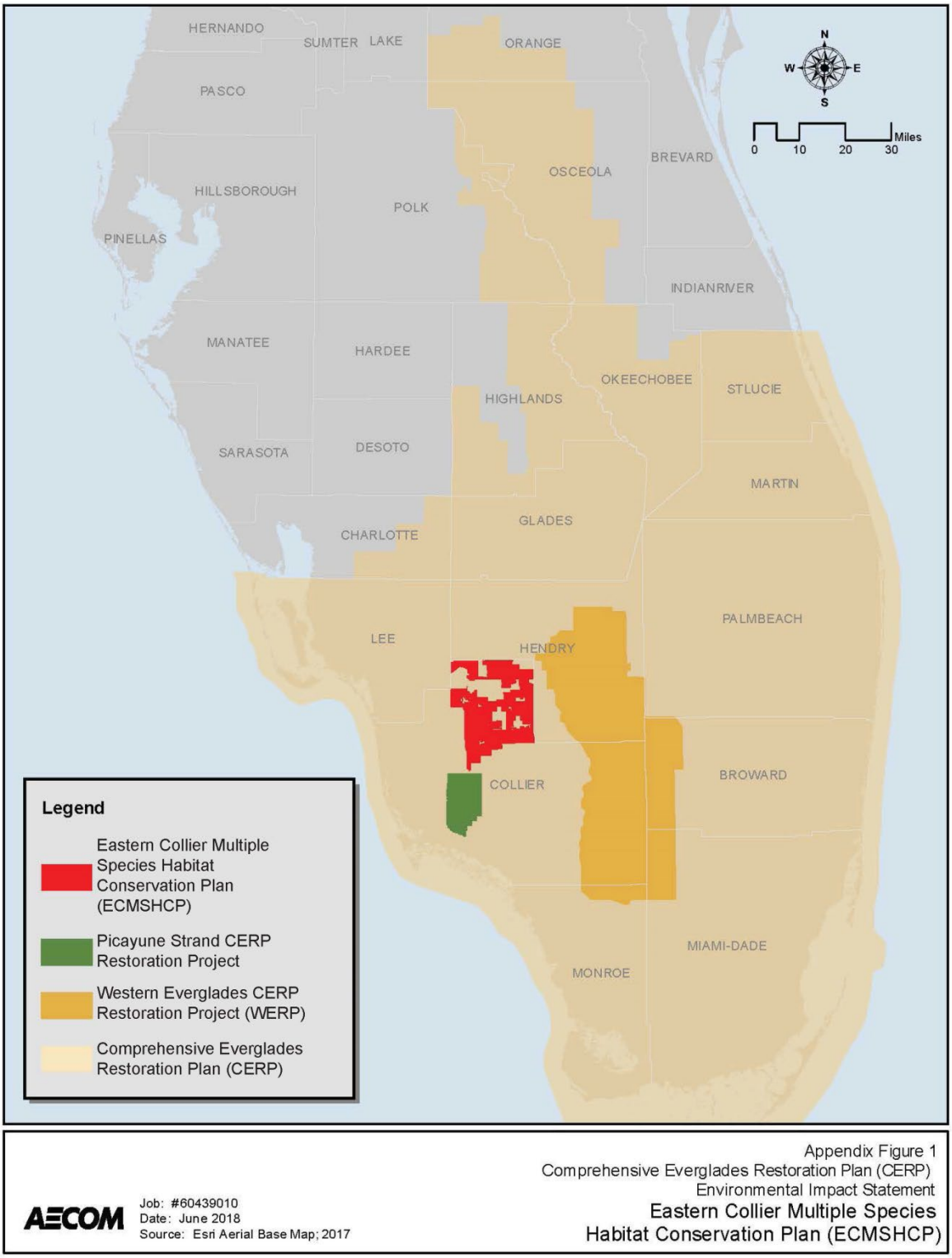



**Figure 4.19-1. CERP projects in relation to ECMSHCP Area**

### Southwest Florida Comprehensive Watershed Master Plan

In 2001, a Southwest Florida Feasibility Study was authorized as a component of the CERP. Led by the Corps and the South Florida Water Management District, the study area covered 4,300 square miles of southwest Florida, including all of Lee County and portions of Collier, Charlotte, Hendry, Glades, and Monroe Counties, including the entire ECMSHCP area (Figure 4.19-2). The study produced the Southwest Florida Comprehensive Watershed Master Plan (SWFCWMP) which sought to develop a management plan that fosters environmental restoration while meeting regional water resource needs. The SWFCWMP goals include reduction of pulse flows to the coast; reestablishment of natural ecosystems; and improved quantity, quality, timing, and distribution of surface water and groundwater flows for environmental, agricultural, and urban uses. The SWFCWMP identifies plans that could be implemented by other agencies and nongovernmental organizations.

The SWFCWMP identified 13 Functional Groups (FGs) of sub-basins, each of which contains one or more project components that provide regional restoration for critical hydrologic locations (Corps 2010). Approximately half of the ECMSHCP area is within one of the following Functional Groups (FGs) (Figure 4.19-3):

- FG 5, Corkscrew Watershed – Within this FG, there is the threat that remaining private lands adjacent to pristine public lands will be converted to residential development over the long term. Drainage ditches and canals associated with residential areas and agricultural lands have eliminated much of the natural sheetflow, disrupting the natural hydrology of this area.
- FG 6, SR 29/Barron River Flow-way Restoration – Overdrainage associated with the SR 29 canal has resulted in loss of natural sheetflows through the area. Wildlife mortality is also a major concern in this area due to high-speed traffic on SR 29. Three project components within this FG are proposed wildlife crossings at key locations.
- FG 7, Camp Keais Strand Watershed – Within this FG, the greatest threat to the landscape is conversion to residential development over the long term. Pre-development flow-ways have been lost to canal channelization and the disrupted hydrology has encouraged invasion of exotics.
- FG 11, Okaloacoochee Slough – Agricultural drainage ditches and canals have eliminated the area's natural sheet flow. Within this FG, there is also the threat of conversion to residential development over the long term. Construction of wildlife crossings at key locations is proposed as a key project component.

Each of these projects is currently in concept and will require a project sponsor, funding, design, and permitting prior to implementation.

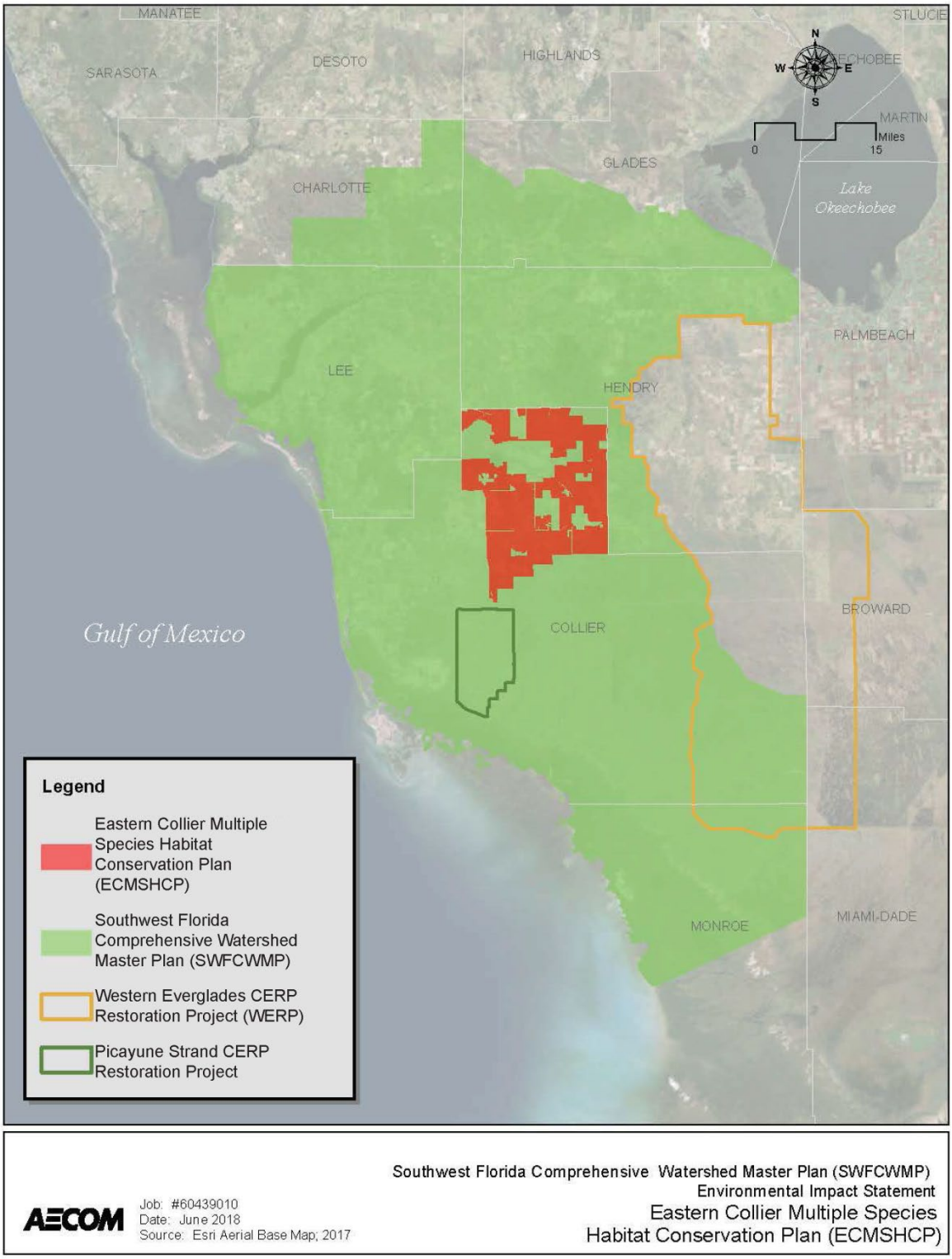



**Figure 4.19-2. Southwest Florida Comprehensive Watershed Master Plan in relation to the ECMSHCP Area**

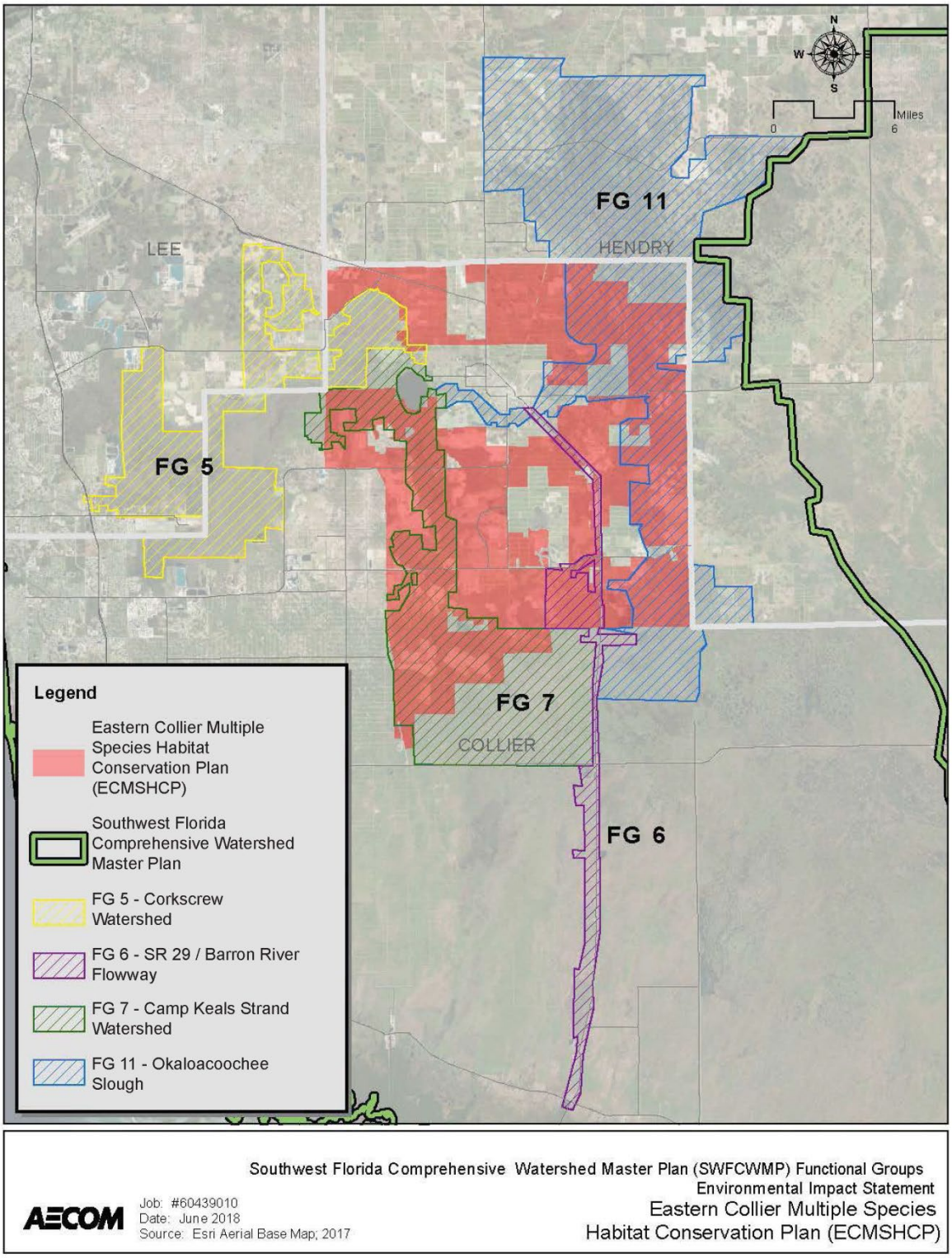



**Figure 4.19-3. Functional Groups in relation to ECMSHCP Area**

## Southwest Florida Landscape Conservation Design

Landscape Conservation Designs (LCDs) are cooperative landscape conservation processes that identify ecologically connected networks of terrestrial, freshwater, coastal, and marine conservation areas and conservation priority areas that are likely to be resilient to climate change and support native biodiversity (and related ecosystem services) under changing conditions. LCDs are intended to be an adaptive management process at a regional landscape scale.

In December 2017, the Florida Panther National Wildlife Refuge, working in partnership with the National Wildlife Refuge Association (NWRA) and the University of Florida, developed a LCD for southwest Florida (NWRA 2017). The Southwest Florida LCD covers all of Collier, Lee, and Charlotte Counties, most of Hendry County, and portions of Glades, Desoto, Hardee, Highlands, and Polk Counties (Figure 4.19-4).

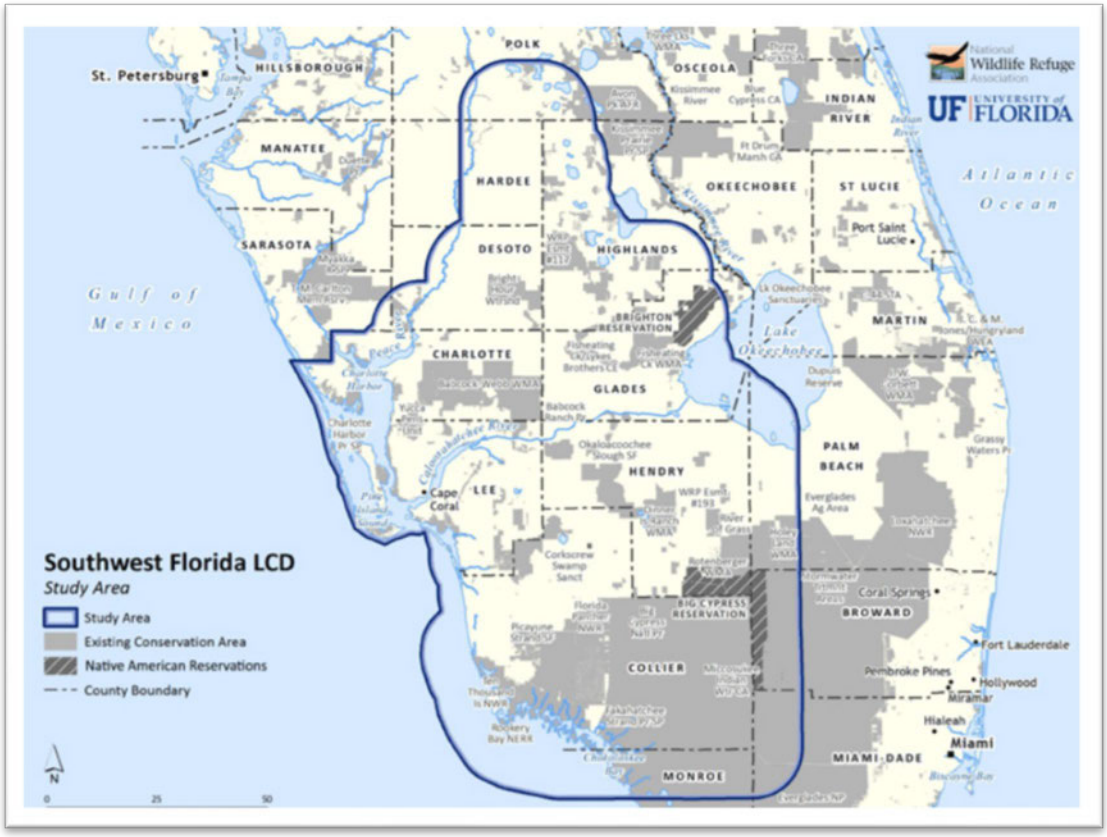



**Figure 4.19-4. Southwest Florida LCD Study Area (Source: NWRA 2017)**

The Southwest Florida LCD depicts the lands that provide the best available habitat for focal species while considering landscape connectivity and is intended to be used for general conservation planning purposes. The LCD takes a focal species approach, which includes an assessment of habitat priorities for 34 species, including federally listed species and other priority species as selected by a team of species experts and regional conservation scientists. The Florida panther is also a primary focus, and panther habitat and corridor priorities are being compared to the other focal species to ensure that panther conservation is robustly addressed in the LCD process. The conservation prioritization seeks to identify areas that best address focal species and natural community conservation goals.

The lands included in the ECMSHCP are also analyzed in the context of this broader LCD. The study area has a history of conservation planning efforts, and an engaged stakeholder community, including landowners, agencies, academia, conservation NGOs, and agricultural and real estate interests.

### South Florida Multi-Species Recovery Plan

Completed by the USFWS in 1999, the South Florida Multi-Species Recovery Plan (MSRP) (UWFWS 1999) is an ecosystem restoration initiative deigned to recover threatened and endangered species and to restore and maintain biodiversity of native plants and animals in South Florida. The MSRP aims to meet this goal through restoration of the 23 diverse ecological communities in the region, thus encouraging population growth and recovery of the more than 60 federally listed spices throughout approximately 26,000 square miles of the 19 southernmost counties in Florida. This living document remains flexible to accommodate the changes identified through ongoing research and incorporation of adaptive management strategies. In order to refresh and provide the most up-to-date information in the MSRP, the USFWS formed a team of government and non-government partners to revise the 1995 Florida Panther Recovery Plan.

The MSRP was intended to assist with project planning, management actions, and environmental compliance. The main factor causing a decline in these species populations is habitat loss. Urbanization often causes fragmentation, degradation of lands, and fire suppression. Agriculture can increase the level of contaminants in the environment and alter hydrology by draining wetlands; therefore, native wetland plants may no longer be able to thrive, giving an opportunity for exotic invasive species to become established.

### Florida Panther Protection Program

The FPPP is a conservation initiative aimed to protect, manage, and enhance Florida panther habitat to assist in the recovery of the species. On June 2, 2008, several conservation organizations, including Audubon of Florida, Collier County Audubon Society, Defenders of Wildlife, and Florida Wildlife Federation, along with eight private landowners, signed a Memorandum of Understanding (MOU) as a collaborative effort, agreeing to work together to enhance the future of the Florida panther. The landowners and conservation organizations agreed to cooperatively and collaboratively facilitate and support the work of the Scientific Technical Review Committee, comprised of six respected biologists and scientists with expertise in the Florida panther.

Built upon the 2002 Collier County RLSA Overlay, the FPPP is intended to promote conservation, management, and recovery of the Florida panther through preserving agricultural lands and identifying appropriate areas for development. The FPPP proposed the creation of north and south wildlife corridors. Landowners would be incentivized through the generation of restoration credits to create, enhance, and restore areas adding to the corridors. In addition, the FPPP established the privately funded Paul J. Marinelli Panther Protection Fund, which uses could include restoration of panther habitat, construction of wildlife crossings, and creation of buffers between areas of development throughout the panther's range. The FPPP involves approximately 195,000 acres of privately owned land in Collier County, of which the ECMSHCP area encompasses the majority, approximately 152,000 acres (Figure 4.19-5).

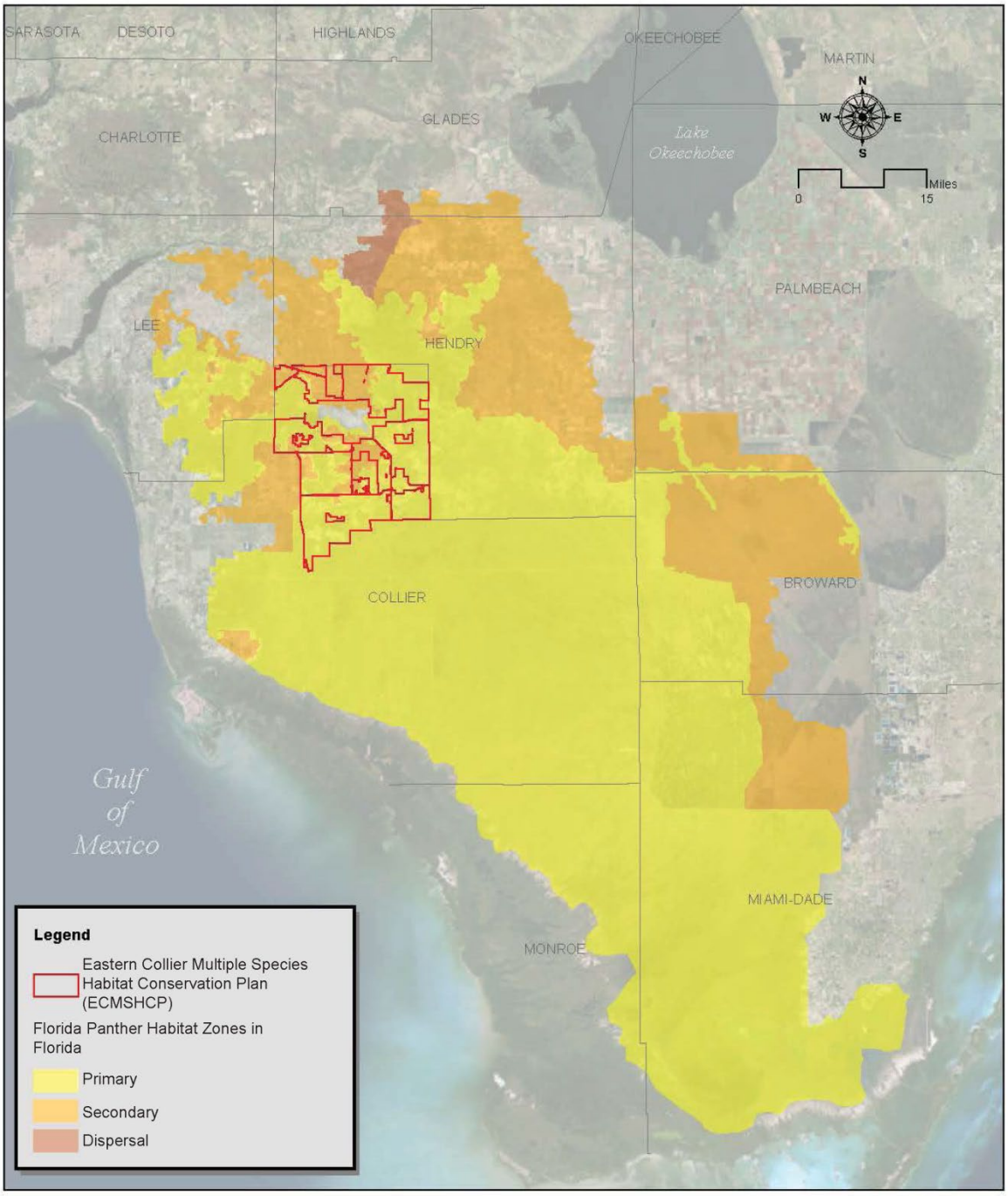



**Figure 4.19-5. Florida Panther Habitat Zones in relation to the ECMSHCP Area**

## STATE PLANS

### Florida Forever

Florida Forever was established by the Florida Legislature in 2000 as the State of Florida's conservation and recreation lands acquisition program. Since 1963, Florida has been purchasing conservation lands under various predecessor programs. Florida Forever is administered by the FDEP Division of State Lands; however, funding appropriated by the state Legislature is distributed to several divisions within FDEP and other state agencies, such as the FWC and the Florida Forest Service (FFS). Since the inception of the Florida Forever program in July 2001, the state has purchased more than 770,279 acres of land with a little over $3 billion (as of December 31, 2017).

Florida Forever is a voluntary willing-seller program. Twice each year, private landowners or their agents may submit properties to FDEP as candidates for acquisition. Each project is subject to a thorough evaluation of natural resource features. The Acquisition and Restoration Council (ARC), an appointed 10-member group of representatives of government agencies and private citizens, evaluates each project, determines which projects should be added to the list for eventual purchase, and ranks each project in terms of priority for acquisition. The Florida Forever acquisition list is then approved by the Governor and Cabinet, and approved projects become part of the Florida Forever Five-Year Plan.

The 2018 ARC Recommended Florida Forever Priority List contains 121 projects arrayed into six categories. Three current Florida Forever projects overlap portions of the ECMSHCP area, covering approximately 21,693 acres (Figure 4.19-6).

- **Half Circle L Ranch**: This project is ranked 8 in the Critical Natural Lands category, and is a high work plan priority. The project includes 11,182 acres in Collier and Hendry Counties and according to the ARC Recommended 2018 Florida Forever Priority List, the entire area remains to be acquired by the state. Approximately 5,308 acres of this Florida Forever project are within the ECMSHCP area along the eastern boundary and directly south of Okaloacoochee Slough State Forest. Approximately 50 percent of the Half Circle L Florida Forever project is located within areas that would be preserved by the ECMSHCP. The remaining areas are designated for development at base zoning of 1 unit per 5 acres. The primary purpose of the Half Circle L Ranch Florida Forever project is to protect Florida panther and Florida black bear habitat, restore the area's hydrology, and provide public recreational opportunities.

- **CREW**: This project is ranked number 7 in the Partnerships and Regional Incentives Projects category, and is a high/medium work plan priority. The project includes over 60,000 acres in Collier and Lee Counties. The CREW project includes approximately 13,389 acres within the ECMSHCP area and according to the ARC Recommended 2018 Florida Forever Priority List, 37,336 acres remain to be acquired. The primary purpose of the CREW Florida Forever project is to preserve interconnected habitats for the Florida panther and Florida black bear and to protect the flow of surface water into the FPNWR and FSPSP.

- **Devil's Garden**: This project is ranked number 15 in the Critical Natural Lands Projects category, and is a medium work plan priority. The project includes approximately 82,986 acres in Hendry and Collier Counties, of which 2,996 acres are within the ECMSHCP. According to the ARC Recommended 2018 Florida Forever Priority List, 71,308 acres remain to be acquired. This area is located directly southwest of the OSSF and almost all of this area would be preserved under the ECMSHCP. The primary purpose of the Devil's Garden project is to increase protection of Florida's biodiversity at the species, natural community, and landscape levels, and fill a gap in the corridor used by the Florida panther.

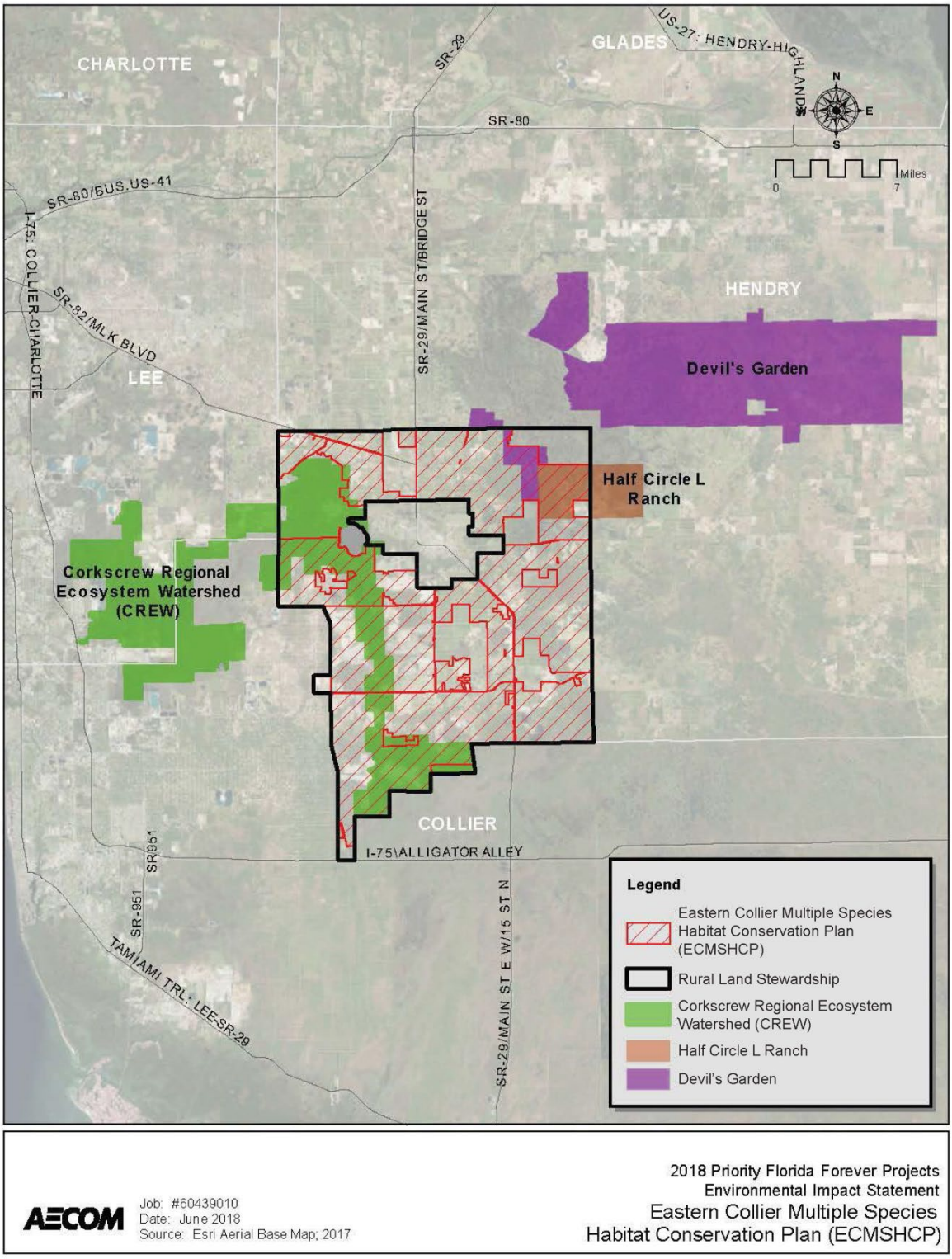



**Figure 4.19-6. Florida Forever projects in relation to ECMSHCP Area**

### Big Cypress Area of Critical State Concern

The Florida Legislature passed *The Big Cypress Conservation Act of 1973* (Florida Statutes, Section 380.055) designating 990,479 acres of South Florida as the Big Cypress Area of Critical State Concern (ACSC). The intent of the Legislature was "to conserve and protect the natural resources and scenic beauty of the Big Cypress Area of Florida." The Legislature found that "the Big Cypress Area is an area containing and having a significant impact upon environmental and natural resources of regional and statewide importance."

Land use regulations for the Big Cypress ACSC (Chapter 28-25, Florida Administrative Code) address the following topics: agriculture exemption, site alteration, drainage, transportation, structure installation, and relationship to local government regulations. Many of the land use regulations pertain to site alterations, which must be limited to 10 percent of the total site size; the installation of non-permeable surfaces must not exceed 50 percent of a site; and non-permeable surfaces greater than 20,000 square feet must provide for the release of surface runoff in a manner approximating the natural surface water flow regime of the area. The Collier County Comprehensive Plan and Land Development Code (LDC) include guidelines and policies regulating development within the ACSC that are identical to and consistent with the state guidelines for the ACSC. Approximately 53,710 acres (35%) of the ECMSHCP area is located within the Big Cypress ACSC (Figure 4.19-7).

## COUNTY PLANS

### Collier County Rural Lands Stewardship Area

In 2002, the Collier County RLSA program was established as part of Collier County's LDC for the purpose of encouraging smart growth patterns within rural areas of the county. The program was established on the principles of rural land stewardship, as defined in Chapter 163.3177(11), Florida Statutes (FS). Collier County's RLSA (Figure 4.19-8) encompasses approximately 195,000 acres located in the northeastern portion of the county east of Golden Gate Estates and west of Hendry County and the Florida Panther National Wildlife Refuge. The RLSA partially extends into the Big Cypress Area of Critical State Concern and is around, but does not include, the unincorporated community of Immokalee. The majority of the land within this area is held by several large landowners. Agricultural uses prevail today in this part of the county, as they have in the past, and represent few of the remaining areas for potential development in Collier County.

Collier County's objective was to create an incentive-based land use overlay system referred to as the Collier County RLSA Overlay Program (the RLSA program). The RLSA Program is a voluntary program that is intended to protect natural resources and retain viable agriculture by promoting compact rural mixed-use development as an alternative to low-density single-use development. The RLSA program provides a system of compensation to private property owners for the removal of certain land uses in order to protect natural resources and viable agriculture in exchange for transferable credits that can be used to entitle compact development (Policy 1.2).

Any land within the RLSA may be designated as a SSA. Stewardship Credits are generated from SSAs in return for maintaining the areas in permanent agriculture, open space, or conservation uses. Stewardship Credits may be used to entitle a SRA, which can be in the form of self-contained planned urban developments within the RLSA. The RLSA program seeks to establish a method for protecting and conserving the most valuable environmental land, including large connected wetland systems and significant areas of habitat for listed species, while directing compact developments to the least environmentally sensitive areas of the RLSA. Figure 8 depicts the boundaries and elements of the RLSA program.

The RLSA program has been regionally and nationally recognized as a landmark planning initiative; however, the mechanics of the program are inherently complex and generally not well understood by the public. Many of the premises and baseline development assumptions that form the basis of the ECMSHCP originate from the RLSA program.

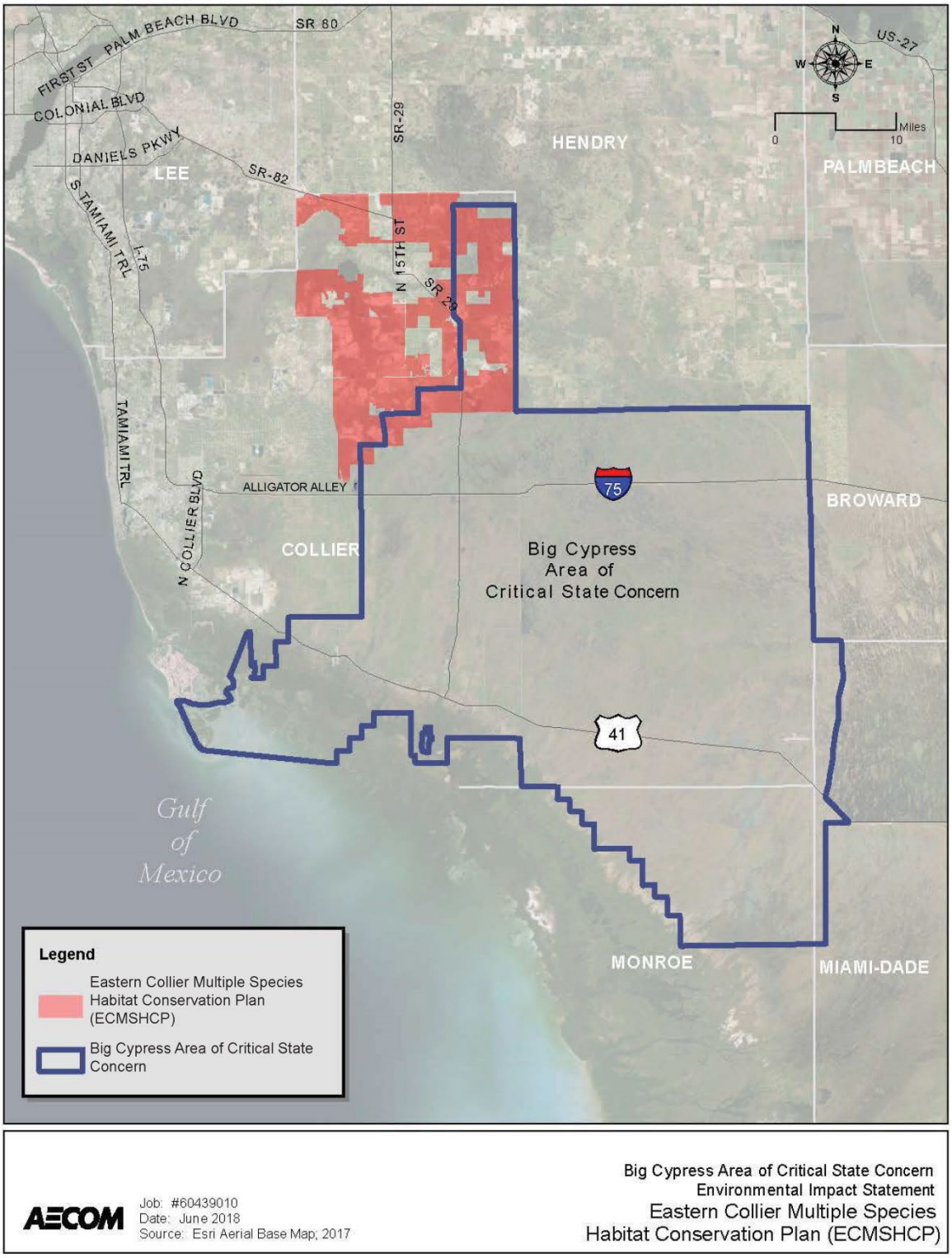



**Figure 4.19-7. Big Cypress Area of Critical State Concern in relation to ECMSHCP Area**

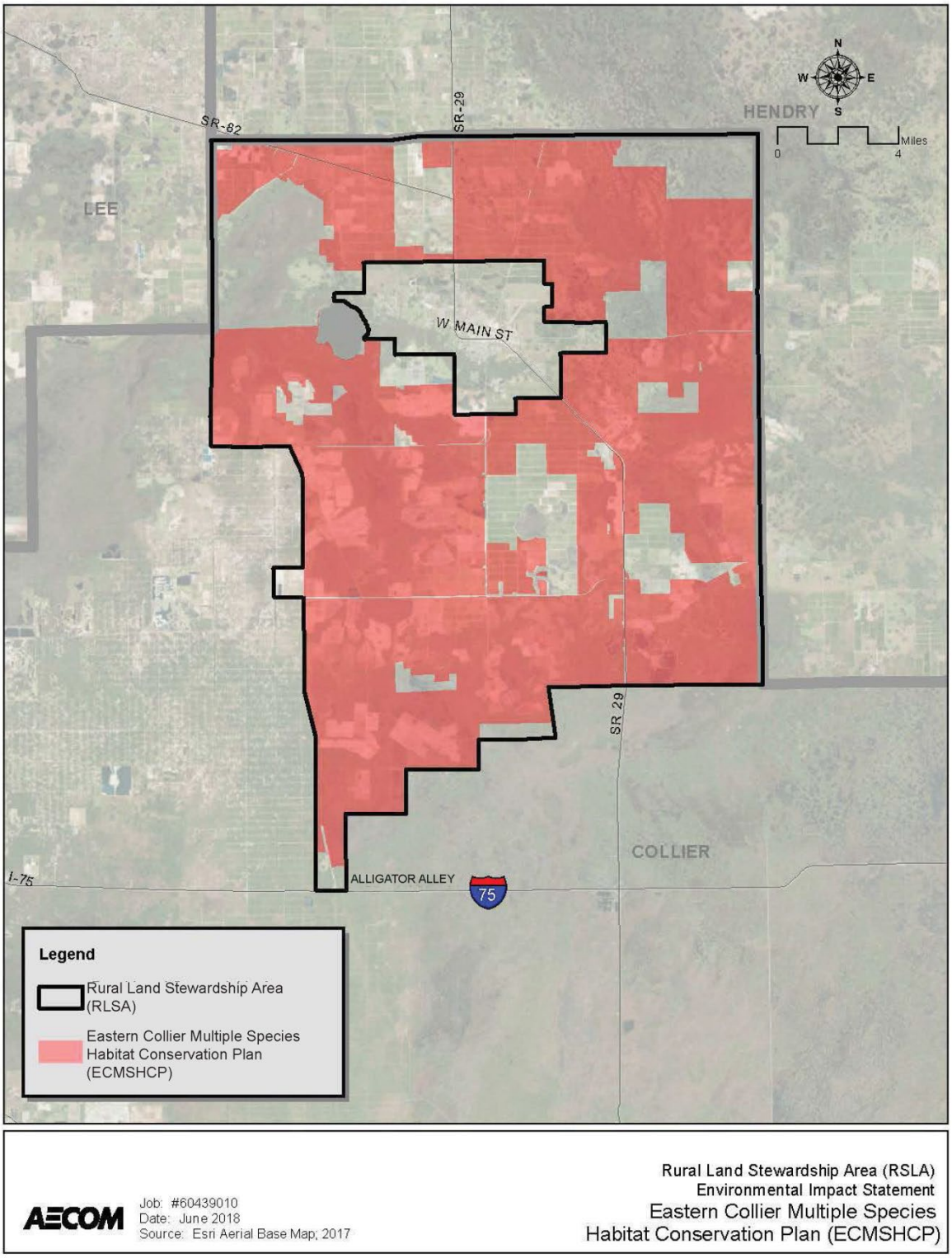



**Figure 4.19-8. RLSA Area in relation to ECMSHCP Area**

### Hendry County Sector Plans

Sector plans have been adopted into Florida law (Section 163.3245, FS) as a mechanism to promote and encourage long-term planning for conservation, development, and agriculture on a landscape scale; to support innovative and flexible planning and development strategies; to facilitate protection of regionally significant resources; and to avoid duplication of effort in analysis required for a DRI. Sector plans are intended for geographic areas of at least 15,000 acres in one or more local government jurisdictions, but they may not be adopted in Areas of Critical State Concern.

Sector plans require two levels of planning: a long-term master plan and detailed specific area plans (DSAPs). Long-term master plans proposed by an applicant are subject to a state-coordinated review process and are ultimately adopted into a local government's comprehensive plan by amendment. Long-term master plans generally identify areas for major land uses and land use patterns including urban, agricultural, rural, and conservation land uses. They also include data, analyses, and policies to address water supplies, transportation and public facilities, and regionally significant natural resources; principles for addressing urban form and design; procedures for considering extra-jurisdictional impacts; and a best-guess buildout analysis. DSAPs, on the other hand, are detailed development plans for specific areas of 1,000 acres or more within the sector plan. DSAPs must conform to the broad framework adopted in the long-term master plan, and they are adopted by local ordinance. Sector plans are intended for long-range planning of 20-50 years for large geographic areas, with a focus on urban form, regionally significant resources, and regionally significant facilities. Sector plans are exempt from DRI review, and a demonstration of need is not required.

The Southwest Hendry County (King Ranch) Sector Plan is located immediately north of and is contiguous with the northwest boundary of the ECMSHCP area (Figure 4.19-9). This Sector Plan covers approximately 23,500 acres and will allow for urban-type development in designated areas, long-term agriculture, and conservation with an estimated buildout of 50 years. The proposed land use program for the future development consists of six land use districts and two sub-districts.

The Rodina Sector Plan, also in Hendry County, covers 26,000 acres and is located immediately north of the King Ranch Sector Plan (Figure 4.19-9). The Rodina Plan will provide a maximum of 21,000 residential units and 1,030,000 square feet of commercial development (SWFRPC 2010). Together, the King Ranch and Rodina Sector Plans represent landscape-scale development and conservation initiatives in the area immediately north of the ECMSHCP area.

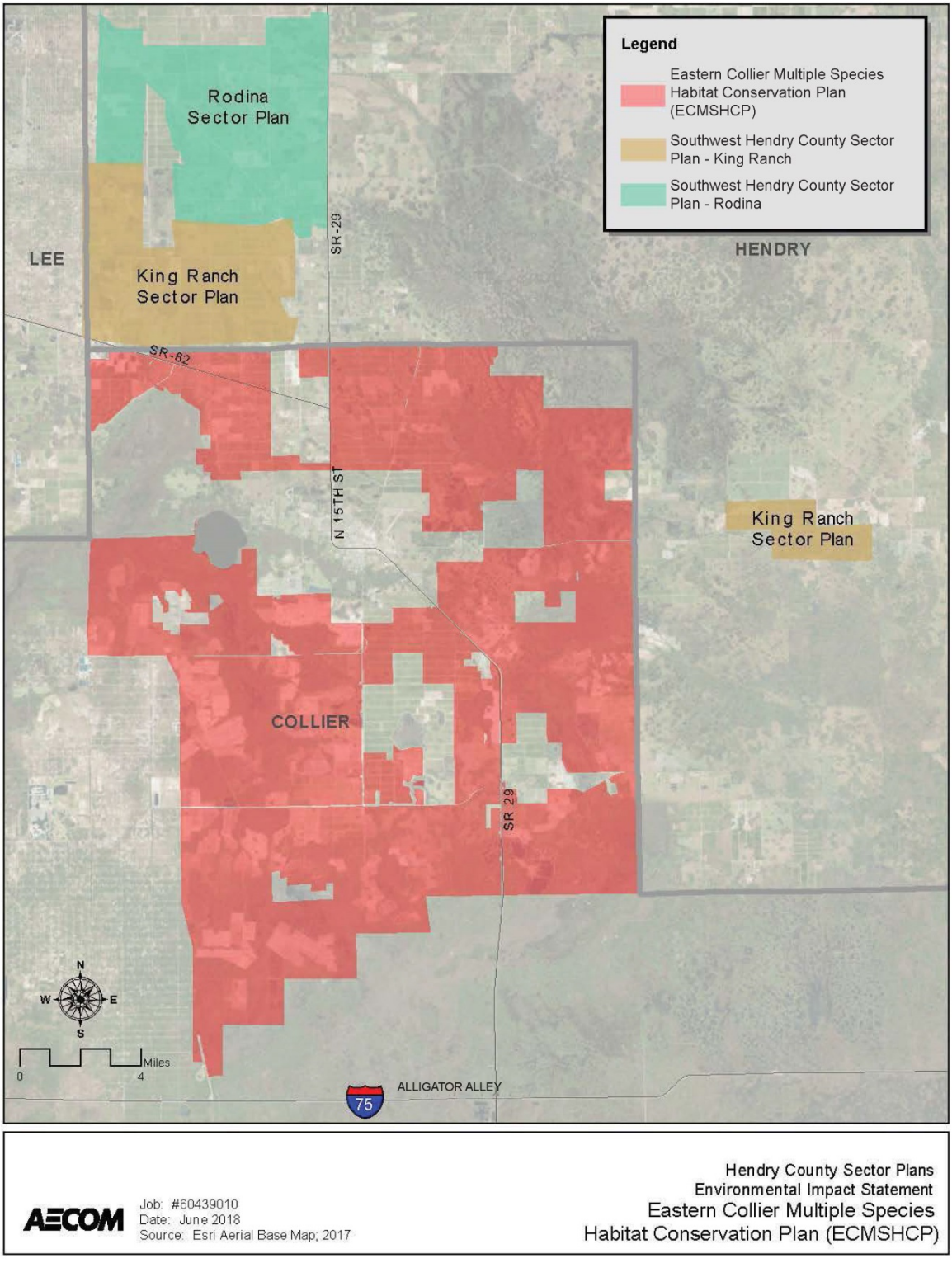



**Figure 4.19-9. Hendry County Sector Plans in relation to ECMSHCP Area**

# CHAPTER 5.0 CONSULTATION AND COORDINATION

As discussed in the Scoping Report (Appendix D), the scoping period began on March 25, 2016 and closed April 25, 2016. Comments from interested parties were solicited throughout the 30-day scoping period for the project. Interested parties were provided with five different options to submit input regarding the project. Comments received by April 28, 2016 were included in the scoping report.

The following agencies/interest groups were represented at the April 19, 2016 online scoping meeting:

- US Fish and Wildlife Service
- US Army Corps of Engineers
- National Park Service
- Florida Fish and Wildlife Conservation Commission
- Florida Department of Environmental Protection
- Florida Department of Transportation
- Florida Division of Historical Resources
- Collier County Growth Management
- Lee County Community Development Department
- Lee County Metropolitan Planning Organization
- Collier County Immokalee CRA
- Immokalee Enterprise Zone Development Agency
- Naples Zoo
- Sierra Club
- Conservancy of Southwest Florida

The publication of the dEIS was announced in the *FR*. A 45-day comment period followed the publication of the dEIS. The Service posted the dEIS on Regulations.gov for public comment and also provided a link on the project's EIS website and the Service's South Florida Ecological Services website. In addition, the agencies, elected officials, organizations, and businesses listed below were notified about the comment period and given the web address for the Regulations.gov website.

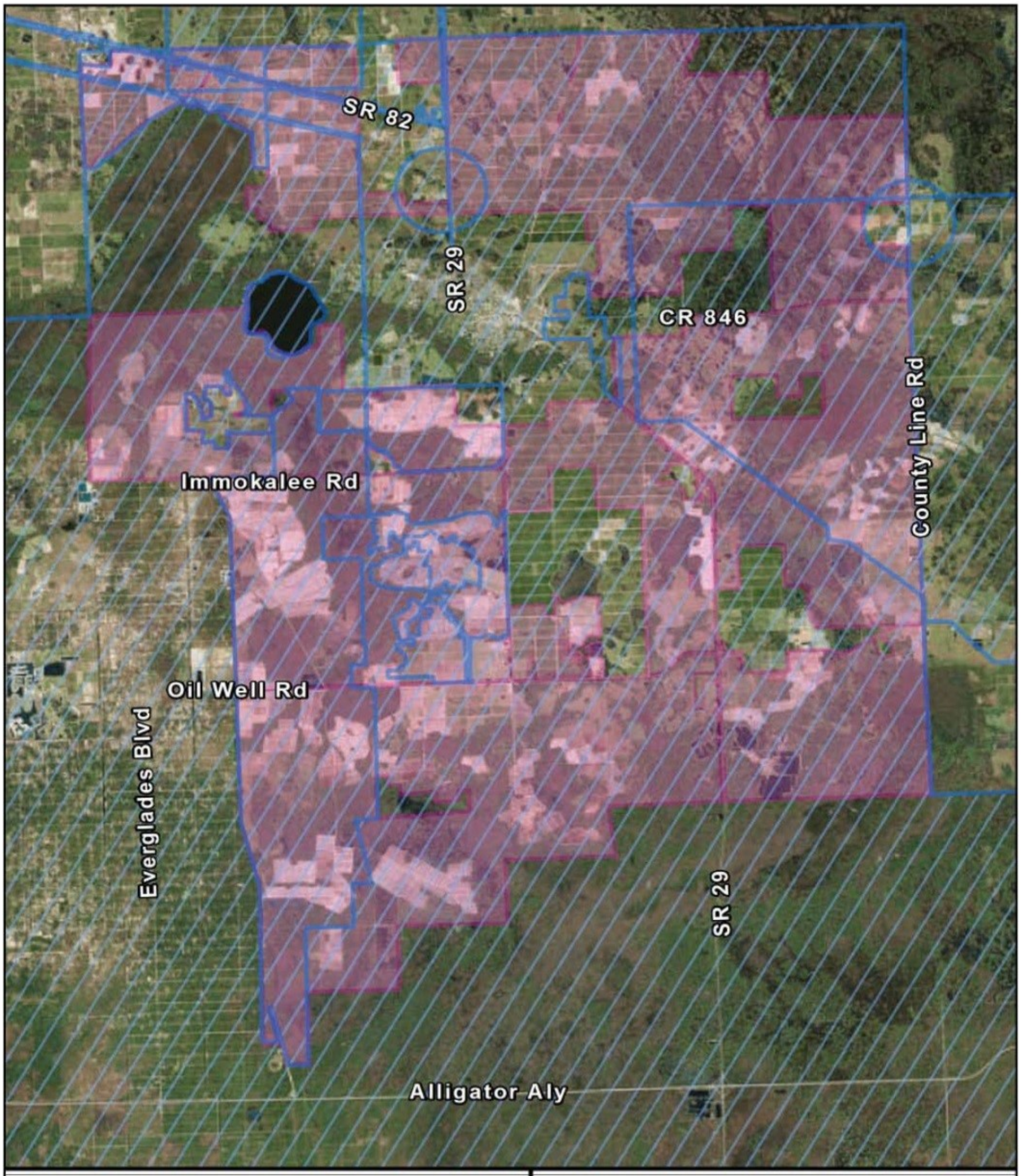
- Miccosukee Tribe of Indians of Florida
- Muscogee (Creek) Nation
- Poarch Band of Creek Indians
- Seminole Tribes of Florida
- Seminole Nation of Oklahoma
- U.S. Congress
- Big Cypress National Preserve
- National Parks Service
- National Oceanic and Atmospheric Administration – National Marine Fisheries Service
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- Florida State Legislature
- Bureau of Archaeological Research
- Bureau of Historic Preservation
- Fakahatchee Strand Preserve State Park
- Florida Department of Environmental Protection
- Florida Department of Transportation
- Florida Division of Historical Resources
- Florida Fish and Wildlife Conservation Commission
- Florida Forest Service
- South Florida Water Management District
- Southwest Florida Regional Planning Council

- Collier County (Airport Authority, Board of County Commissioners, Comprehensive Planning Department, Manager, Property Appraiser, Sheriff's Department, Superintendent, Supervisor of Elections, and Tax Collector)
- Hendry County (Board of County Commissioners, Administrator, Property Appraiser, Sheriff's Department, Superintendent, Supervisor of Elections, and Tax Collector)
- Lee County (Board of County Commissioners, Manager, Property Appraiser, Sheriff's Department, Superintendent, Supervisor of Elections, and Tax Collector)
- 1000 Friends of Florida
- Archbold Biological Station
- Audubon (Florida, Western Everglades, Southwest Florida)
- Bethune Education Center
- Buck Island Ranch
- Coalition of Immokalee Workers
- Collier County Metropolitan Planning Organization
- CREW Land and Water Trust
- Defenders of Wildlife
- East Naples Civic Association
- Ecoresolve
- Everglades Coordinating Council
- Florida Defenders of the Environment
- Florida Panther Conservation Bank
- Florida Panther Society
- Florida Sportsmen Conservation Association
- Florida Wildlife Federation
- Friends of the Everglades
- Friends of the Florida Panther Refuge, Incorporated
- Immokalee Chamber of Commerce
- Immokalee Civic Association
- Immokalee Community Redevelopment Agency
- Lee County Metropolitan Planning Organization
- Naples Zoo
- National Wildlife Federation
- Redlands Christian Migrant Association
- Responsible Growth Management Coalition
- Rookery Bay National Estuarine Research Reserve
- Sierra Club
- South Florida Wildlands Association
- Southwest Florida Hispanic Chamber of Commerce
- Southwest Florida Regional Planning Council
- Southwest Florida Research and Education Center
- The Conservancy of Southwest Florida
- The Greater Naples Chamber of Commerce
- The Nature Conservancy
- University of Central Florida (Dr. Daniel Smith)
- University of Florida (Dr. Elizabeth Pienaar)
- Wings of Hope

Following the comment period, the dEIS may be modified based on agency, tribal, and public comments received.

As of December 7, 2015

| Sal. | F | L | Title | Entity | Sub | address | city | state | zip |
|---|---|---|---|---|---|---|---|---|---|
| Mr. | Colley | Billie | Chairman | Miccosukee Tribe of Indians of Florida | | Tamiami Station P.O. Bosx 44002 | Miami | FL | 33144 |
| Mr. | Fred | Dayhoff | Section 106 and NAGPRA Coordinator | Miccosukee Tribe of Indians of Florida | | HC 61 SR Box 68 Old Loop Road | Ochopee | FL | 34141 |
| Mr. | George | Tiger | Principle Chief | Muscogee (Creek) Nation | Office of Administration | P.O. Box 580 | Okmulgee | OK | 74447 |
| | Emman | Spain | Tribal Historic Preservation Officer | Muscogee (Creek) Nation | Cultural Preservation | P.O. Box 580 | Okmulgee | OK | 74447 |
| Ms. | Stephanie A. | Bryan | Tribal Chair | Poarch Band of Creek Indians | | 5811 Jack Spring Road | Almore | AL | 36502 |
| Mr. | Robert | Thrower | Acting Tribal Historic Preservation Offi | Poarch Band of Creek Indians | | 5811 Jack Spring Road | Almore | AL | 36502 |
| Mr. | James | Billie | Chairman | Seminole Tribes of Florida | | 6300 Stirling Road | Hollywood | FL | 33024 |
| Mr. | Paul | Backhouse, Ph.D. | Acting Tribal Historic Preservation Offi | Seminole Tribes of Florida | Tribal Historic Presrvation Office | 30290 Josie Billie Highway, PMB | Clewiston | FL | 33440 |
| Ms. | Anne H. | Mullins, MCRP | Compliance Review Supervisor | Seminole Tribes of Florida | Tribal Historic Presrvation Office | 30290 Josie Billie Highway, PMB | Clewiston | FL | 33440 |
| Mr. | Leonard M. | Harjo | Principle Chief | Seminole Nation of Oklahoma | | P.O. Box 1498 | Wewoka | OK | 74884 |
| Ms. | Natalie | Harjo | Tribal Historic Preservation Officer | Seminole Nation of Oklahoma | | P.O. Box 1498 | Wewoka | OK | 74884 |
| | | | | | | | | | |




**Previously Recorded Cultural Resources**

*Environmental Impact Statement*
*Eastern Collier Multiple Species*
*Habitat Conservation Plan*

HCP Boundary

Archaeological Site

Linear Resource

Structure

N

0 5 Miles

Eastern Collier Multiple Species Habitat Conservation Plan: Tribal Contact Information (Updated September 2018)

| Sal. | First | Last | Title | Tribe | Department | Mailing Address | City | State | Zipcode | Email |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| Mr. | Billy | Cypress | Tribal Chairman | Miccosukee Tribe of Indians of Florida | | Tamiami Station P.O. Bo | Miami | FL | 33144 | None-Tribal Leadership does not use email |
| Mr. | Fred | Dayhoff | Tribal Historic Preservation Officer | Miccosukee Tribe of Indians of Florida | | Tamiami Station P.O. Bo | Miami | FL | 33144 | Unknown |
| Mr. | Craig | Van der Heiden | Fish and Wildlife Director | Miccosukee Tribe of Indians of Florida | | Tamiami Station P.O. Bo | Miami | FL | 33144 | craigv@miccosukeetribe.com |
| | | | | | | | | | | |
| Mr. | James | Floyd | Principal Chief | Muscogee (Creek) Nation | Office of Administration | P.O. Box 580 | Okmulgee | OK | 74447 | jfloyd@mcn-nsn.gov |
| Ms. | Corain | Lowe-Zepeda | Tribal Historic Preservation Officer | Muscogee (Creek) Nation | Cultural Preservation | P.O. Box 580 | Okmulgee | OK | 74447 | section106@mcn-nsn.gov |
| | | | | | | | | | | |
| Ms. | Stephanie A. | Bryan | Tribal Chairwoman | Poarch Band of Creek Indians | | 5811 Jack Spring Road | Almore | AL | 36502 | sbryan@pci-nsn.gov |
| Ms. | Carolyn M. | White | Acting Tribal Historic Preservation Officer | Poarch Band of Creek Indians | | 5811 Jack Spring Road | Almore | AL | 36502 | thpo@pci-nsn.gov |
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| Mr. | Bradley M. | Mueller | Compliance Supervisor | Seminole Tribe of Florida | Tribal Historic Preservation O | 30290 Josie Billie Highw | Clewiston | FL | 33440 | bradleymueller@semtribe.com |
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| Courtesy Title | Sal | First | Last | Suffix | Job Title | Company | Address 1 | Address 2 | City | St | State | Postal Code | Email | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| The Honorable | Senator | Marco | Rubio | | U.S. Senator | U.S. Senate | | 3299 Tamiami Trail East, Suite 106 | Naples | FL | Florida | 34112 | | |
| The Honorable | Senator | Bill | Nelson | | U.S. Senator | U.S. Senate | Justice Center Annex Building | 200 Main Street, Suite 801 | Ft. Myers | FL | Florida | 33901 | | |
| The Honorable | Representative | Francis | Rooney | | U.S. Congressman, Florida District 19 | U.S. House of Representatives | | 3299 Tamiami Trail East, Suite 105 | Naples | FL | Florida | 34112 | | |
| The Honorable | Representative | Mario | Diaz-Balart | | U.S. Congressman, Florida District 25 | U.S. House of Representatives | | 4715 Golden Gate Parkway, Suite 1 | Naples | FL | Florida | 34116 | | |
| The Honorable | Representative | Carlos | Curbelo | | U.S. Congressman, Florida District 26 | U.S. House of Representatives | | 404 West Palm Drive | Florida City | FL | Florida | 33034 | | |
| The Honorable | Senator | Kathleen | Passidomo | | Florida State Senator, District 28 | The Florida Senate | | 3299 East Tamiami Trail, Suite 203 | Naples | FL | Florida | 34112 | | |
| The Honorable | Representative | Byron | Donalds | | Florida State Representative, District 80 | The Florida House | Harmon Turner Building | 3299 Tamiami Trail East, Suite 212 | Naples | FL | Florida | 34112 | | |
| The Honorable | Representative | | | | Florida State Representative, District 105 | The Florida House | | 2500 Northwest 107th Avenue, Suite 204 | Doral | FL | Florida | 33172 | | |
| The Honorable | Representative | Heather | Fitzenhagen | | Florida State Representative, District 78 | The Florida House | | 2120 Main Street, Suite 208 | Fort Myers | FL | Florida | 33901 | | |
| The Honorable | Commissioner | Donna | Fiaia | | County Commissioner, District 1 | Collier County BOCC | | 3299 Tamiami Trail East, Suite 303 | Naples | FL | Florida | 34112 | | |
| The Honorable | Commissioner | Andy | Solis | Esq. | County Commissioner, District 2, Chairman | Collier County BOCC | | 2335 Orange Blossom Drive | Naples | FL | Florida | 34109 | | |
| The Honorable | Commissioner | Burt L. | Saunders | | County Commissioner, District 3 | Collier County BOCC | | 3299 Tamiami Trail East, Suite 303 | Naples | FL | Florida | 34112 | | |
| The Honorable | Commissioner | Penny | Taylor | | County Commissioner, District 4 | Collier County BOCC | | 3299 Tamiami Trail East, Suite 303 | Naples | FL | Florida | 34112 | | |
| The Honorable | Commissioner | William L. | McDaniel | Jr. | County Commissioner, District 5, Vice Chairman | Collier County BOCC | | 3299 Tamiami Trail East, Suite 303 | Naples | FL | Florida | 34112 | | |
| Mr. | Mr. | Leo E. | Ochs | Jr. | County Manager | Collier County | County Manager's Office | 3299 Tamiami Trail East, Suite 202 | Naples | FL | Florida | 34112 | | |
| Sheriff | Sheriff | Kevin J. | Rambosk | | Sheriff | Collier County Sheriff's Department | Collier County Government Center, Building J | 3319 East Tamiami Trail | Naples | FL | Florida | 34112 | | |
| Mr. | Mr. | Abe | Skinner | CFA | Collier County Property Appraiser | Collier County | Collier County Government Center | 3950 Radio Road | Naples | FL | Florida | 34104 | | |
| Mr. | Mr. | Larry H. | Ray | | Tax Collector | Collier County | Courthouse Building, C-1 Room 310 | 3291 Tamiami Trail East | Naples | FL | Florida | 34112 | | |
| Dr. | Dr. | Kamela | Patton | | Superintendent | Collier County District School Board | Dr. Martin Luther King, Jr. Administrative Center | 5775 Osceola Trail | Naples | FL | Florida | 34109 | | |
| Ms. | Ms. | Jennifer J. | Edwards | | Supervisor of Elections | Collier County | | 3750 Enterprise Avenue | Naples | FL | Florida | 34104 | | |
| Commissioner | Commissioner | John | Manning | | County Commissioner, District 1 | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | Florida | 33902 | | |
| Commissioner | Commissioner | Cecil | Pendergrass | | County Commissioner, District 2, Chairman | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | Florida | 33902 | | |
| Commissioner | Commissioner | Larry | Kiker | | County Commissioner, District 3, Vice Chairman | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | Florida | 33902 | | |
| Commissioner | Commissioner | Brian | Hamman | | County Commissioner, District 4 | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | Florida | 33902 | | |
| Commissioner | Commissioner | Frank | Mann | | County Commissioner, District 5 | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | Florida | 33902 | | |
| Mr. | Mr. | Roger | Desjarlais | | County Manager | Lee County | | P.O. Box 398 | Fort Myers | FL | Florida | 33902 | | |
| Sheriff | Sheriff | Mike | Scott | | Sheriff | Lee County Sheriff's Department | | 14750 Six Mile Cypress Parkway | Fort Myers | FL | Florida | 33912 | | |
| Mr. | Mr. | Kenneth M. | Wilkinson | CFA | Lee County Property Appraiser | Lee County | | P.O. Box 1546 | Fort Myers | FL | Florida | 33902 | | |
| Mr. | Mr. | Larry D. | Hart | | Tax Collector | Lee County | Lee County Tax Collector | 2480 Thompson Street | Fort Myers | FL | Florida | 33901 | | |
| Mr. | Mr. | Gregory | Adkins | Ed.D. | Superintendent | Lee County District School Board | Lee County Public Education Center | 2855 Colonial Boulevard | Fort Myers | FL | Florida | 33966 | | |
| Mr. | Mr. | Tommy | Doyle | | Supervisor of Elections | Lee County | | P.O. Box 2545 | Fort Myers | FL | Florida | 33902 | | |
| Ms. | Ms. | Emma | Byrd | | County Commissioner, District 1, Vice Chair | Hendry County BOCC | | P.O. Box 1760 | LaBelle | FL | Florida | 33975 | | |
| Mr. | Mr. | Darrell | Harris | | County Commissioner, District 2 | Hendry County BOCC | | P.O. Box 1760 | LaBelle | FL | Florida | 33975 | | |
| Mr. | Mr. | Mitchell | Wills | | County Commissioner, District 3, Chairperson | Hendry County BOCC | | P.O. Box 1760 | LaBelle | FL | Florida | 33975 | | |
| Mr. | Mr. | Michael | Swindle | | County Commissioner, District 4 | Hendry County BOCC | | P.O. Box 1760 | LaBelle | FL | Florida | 33975 | | |
| Mr. | Mr. | Karson | Turner | | County Commissioner, District 5 | Hendry County BOCC | | P.O. Box 1760 | LaBelle | FL | Florida | 33975 | | |
| Mr. | Mr. | Charles T. | Chapman | IV | County Administrator | Hendry County | | P.O. Box 2340 | LaBelle | FL | Florida | 33975 | | |
| Sheriff | Sheriff | Steve | Whidden | | Sheriff | Hendry County Sheriff's Department | West District - Main Headquarters Office | 101 South Bridge Street | LaBelle | FL | Florida | 33935 | | |
| Ms. | Ms. | Dena R. | Pittman | CFA | Hendry County Property Appraiser | Hendry County | | P.O. Box 1840 | LaBelle | FL | Florida | 33975 | | |
| Mr. | Mr. | Patrick B. | Langford | | Tax Collector | Hendry County | | 25 East Hickpochee, P.O. Box 1780 | LaBelle | FL | Florida | 33935 | | |
| Mr. | Mr. | Paul K. | Puletti | | Superintendent | Hendry County District School Board | | P.O. Box 1980 | LaBelle | FL | Florida | 33975 | | |
| Ms. | Ms. | Brenda | Hoots | | Supervisor of Elections | Hendry County | | P.O. Box 174 | LaBelle | FL | Florida | 33975 | | |
| Mr. | Mr. | Paul | Owens | | President | 1000 Friends of Florida | | P.O. Box 5948 | Tallahassee | FL | Florida | 32314-5948 | | |
| Dr. | Dr. | Hilary | Swain | | Sr. Research Program Director | Archbold Biological Station | | 123 Main Drive | Venus | FL | Florida | 33960-2039 | | |
| Mr. | Mr. | Jason | Lauritsen | | Sanctuary Director | Audubon of Florida | Corkscrew Swamp Sanctuary & Blair Audobon Center | 375 Sanctuary Road West | Naples | FL | Florida | 34120 | | |
| Ms. | Ms. | Julie | Wraithmell | | Executive Director | Audubon of Florida | Florida State office | 4500 Biscayne Boulevard, Suite 350 | Miami | FL | Florida | 33137 | | |
| Mr. | Mr. | Brad | Cornell | | Southwest Florida Policy Associate | Audubon of the Western Everglades | Audubon of Florida | P.O. Box 1738 | Naples | FL | Florida | 34106 | | |
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| Mr. | Mr. | Dan | VanNorman | | President | Audubon of Southwest Florida | Audubon of Florida | P.O. Box 61041 | Fort Myers | FL | Florida | 33906-1041 | | |
| Mr. | Mr. | Brent | Klein | | Assistant Principal | Beacon High School Immokalee | Bethune Education Center | 620 South 5th Street | Immokalee | FL | Florida | 34142 | | |
| Mr. | Mr. | David | Jenson | | | Barron Collier Companies | [Ave Maria contact] | 2600 Golden Gate Boulevard | Naples | FL | Florida | 34105 | | |
| Mr. | Mr. | Gene | Lollis | | Ranch Manager | Buck Island Ranch | | 300 Buck Island Ranch Road | Lake Placid | FL | Florida | 33852 | | |
| Ms. | Ms. | Julia | Perkins | | | Coalition of Immokalee Workers | | P.O. Box 603 | Immokalee | FL | Florida | 34143 | | |
| Dr. | Dr. | Daniel | Smith | | Research Associate | College of Sciences, Department of Biology | University of Central Florida | 4110 Libra Drive | Orlando | FL | Florida | 32816-2368 | | |
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| Ms. | Ms. | Anne | McLaughlin | | Executive Director | Collier County MPO | Collier County Metropolitan Planning Organization | 2885 South Horseshoe Drive | Naples | FL | Florida | 34104 | | |
| Ms. | Ms. | Brenda | Brooks | | Executive Director | CREW Land & Water Trust | | 23998 Corkscrew Road | Estero | FL | Florida | 33928 | | |
| Ms. | Ms. | Elizabeth | Fleming | | Senior Florida Representative | Defenders of Wildlife | | 3637 Fourth Street North, Suite 230 | St. Petersburg | FL | Florida | 33704 | | |
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| Ms. | Ms. | Shirley | Calhoun | | President | East Naples Civic Association | | PMB #49 8595 Collier Boulevard Suite 107 | Naples | FL | Florida | 34114-3556 | | |
| | | | | | | Everglades Coordinating Council | | 14775 SW 18 Court | Davie | FL | Florida | 33325 | | |
| Mr. | Mr. | Jim | Gross | | Executive Director | Florida Defenders of the Environment | | P.O. Box 357086 | Gainesville | FL | Florida | 32635 | | |
| Mr. | Mr. | Leslie | Alderman | | | Florida Panther Conservation Bank | | 6118 Deer Run | Ft Myers | FL | Florida | 33908 | | |
| Mr. | Mr. | Stephen | Williams | | President | Florida Panther Society | | P.O. Box 358683 | Gainesville | FL | Florida | 32635 | | |
| Mr. | Mr. | Todd | Hallman | | | Florida Sportsmen Conservation Association | | 15287 99 Street North | West Palm Beach | FL | Florida | 33412 | | |
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| Mr. | Mr. | Philip | Kushlan | | President | Friends of the Everglades | | 11767 South Dixie Hwy #232 | Miami | FL | Florida | 33156 | | |
| Mr. | Mr. | Tom | Trotta | | | Friends of the Florida Panther Refuge, Inc. | c/o U.S. Fish and Wildlife Service | 12085 SR 29 South | Immokalee | FL | Florida | 34142 | | |
| Mr. | Mr. | Danny | Gonzalez | | President | Immokalee Chamber of Commerce | | 1300 N 15th Street #2 | Immokalee | FL | Florida | 34142 | | |
| Mr. | Mr. | Leo | Rodgers | | President | Immokalee Civic Association | | 502 East New Market Street | Immokalee | FL | Florida | 34142 | | |
| Ms. | Ms. | Debrah | Forester | | Director | Immokalee Community Redevelopment Agency | | 750 South 5th Street | Immokalee | FL | Florida | 34142 | | |
| Mr. | Mr. | Don | Scott | AICP | Executive Director | Lee County MPO | Lee County Metropolitan Planning Organization | 815 Nicholas Parkway East | Cape Coral | FL | Florida | 33915-0045 | | |
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| Ms. | Ms. | Jennyfer | Torres | | Board Chair | Southwest Florida Hispanic Chamber of Commerce | | 1400 Colonial Boulevard, Suite 250 | Fort Myers | FL | Florida | 33907 | | |
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| Ms. | Ms. | Tiffany A. | Esposito | | Chief of Staff | The Greater Naples Chamber of Commerce | | 2390 Tamiami Trail North, Suite 210 | Naples | FL | Florida | 34103 | | |
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| Mr. | Mr. | Billy | Cypress | | Chairman | Miccosukee Tribe of Indians of Florida | | Tamiami Station P.O. Box 440021 | Miami | FL | Florida | 33144 | | |
| Mr. | Mr. | Fred | Dayhoff | | Section 106 and NAGPRA Coordinator | Miccosukee Tribe of Indians of Florida | | HC 61 SR Box 68 Old Loop Road | Ochopee | FL | Florida | 34141 | | |
| Mr. | Mr. | James | Floyd | | Principle Chief | Muscogee (Creek) Nation | Office of Administration | P.O. Box 580 | Okmulgee | OK | Oklaho | 74447 | | |
| Ms. | Ms. | Corain | Lowe-Zepeda | | Tribal Historic Preservation Officer | Muscogee (Creek) Nation | Cultural Preservation | P.O. Box 580 | Okmulgee | OK | Oklaho | 74447 | | |
| Ms. | Ms. | Stephanie A. | Bryan | | Tribal Chair | Poarch Band of Creek Indians | | 5811 Jack Spring Road | Almore | AL | Alabam | 36502 | | |
| Ms. | Ms. | Carolyn M. | White | | Acting Tribal Historic Preservation Officer | Poarch Band of Creek Indians | | 5811 Jack Spring Road | Almore | AL | Alabam | 36502 | THPO@pci-nsn.gov | |

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| Mr. | Mr. | Marcellus W. | Osceola | | Chairman | Seminole Tribes of Florida | | 6300 Stirling Road | Hollywood | FL | Florid | 33024 | |
| Dr. | Dr. | Paul | Backhouse | Ph.D. | Tribal Historic Preservation Officer | Seminole Tribes of Florida | Tribal Historic Presrvation Office | 30290 Josie Billie Highway, PMB 1004 | Clewiston | FL | Florid | 33440 | |
| Mr. | Mr. | Bradley | Mueller | | Compliance Review Supervisor | Seminole Tribes of Florida | Tribal Historic Presrvation Office | 30290 Josie Billie Highway, PMB 1004 | Clewiston | FL | Florid | 33440 | THPOCompliance@semtribe.com |
| Ms. | Ms. | Victoria | Menchaca | MA | Compliance Review Specialist | Seminole Tribe of Florida | Tribal Historic Preservation Office | 30291 Josie Billie Highway, PMB 1004 | Clewiston | FL | Florid | 33440 | VictoriaMenchaca@semtribe.com |
| Mr. | Mr. | Gregory | Chilcoat | | Principle Chief | Seminole Nation of Oklahoma | | P.O. Box 1498 | Wewoka | OK | Oklah | 74884 | |
| Mr. | Mr. | Theodore | Isham | | Tribal Historic Preservation Officer | Seminole Nation of Oklahoma | | P.O. Box 1498 | Wewoka | OK | Oklah | 74884 | isham.t@sno-nsn.gov |
| Ms. | Ms. | Mary | Glowacki | Ph.D. | Chief and State Archaeologist | Bureau of Archaeological Research | B. Calvin Jones Center for Archaeology at the Governor Martin House | 1001 DeSoto Park Drive | Tallahassee | FL | Florid | 32301 | |
| Ms. | Ms. | Alissa | Slade Lotane | | Bureau Chief | Bureau of Historic Preservation | R.A. Gray Building | 500 South Bronough Street | Tallahassee | FL | Florid | 32399-0250 | |
| Mr. | Mr. | Justin | Lobb | | Airport Manager | Collier County Airport Authority | Immokalee Regional Airport (IMM) | 165 Airpark Boulevard | Immokalee | FL | Florid | 34142 | |
| Ms. | Ms. | Renee | Rau | | Park Manager | Fakahatchee Strand Preserve State Park | | P.O. Box 548 | Copeland | FL | Florid | 34137 | |
| Mr. | Mr. | Chris | Stahl | | Clearinghouse Coordinator | Florida Department of Environmental Protection | Florida State Clearinghouse Division | 3900 Commonwealth Boulevard, MS 47 | Tallahassee | FL | Florid | 32399-3000 | |
| Mr. | Mr. | Donald | Forgione | | Director | Florida Department of Environmental Protection | Florida Park Service | 3900 Commonwealth Boulevard | Tallahassee | FL | Florid | 32399 | |
| Ms. | Ms. | Gwen | Pipkin | | Environmental Administrator | Florida Department of Transportation | District 1 | 801 North Broadway Avenue | Bartow | FL | Florid | 33830 | |
| Mr. | Mr. | Brent | Setchell | | District Environmental Permitting Engineer | Florida Department of Transportation | District 1 | 801 North Broadway Avenue | Bartow | FL | Florid | 33830 | |
| Mr. | Mr. | Marlon | Bizerra | | Planning and Environmental Manager | Florida Department of Transportation | District 1 | 801 North Broadway Avenue | Bartow | FL | Florid | 33830 | |
| Mr. | Mr. | Xavier | Pagan | | Natural and Community Resources Administrator | Florida Department of Transportation | State Environmental Management Office | 605 Suwannee Street | Tallahassee | FL | Florid | 32399 | |
| Ms. | Ms. | Katasha | Cornwell | | Natural and Community Resources Administrator | Florida Department of Transportation | State Environmental Management Office | 605 Suwannee Street | Tallahassee | FL | Florid | 32399 | |
| Mr. | Mr. | Timothy | Parsons | Ph.D. | Interim Director and State Historic Preservation Officer | Florida Division of Historical Resources | R.A. Gray Building | 500 South Bronough Street | Tallahassee | FL | Florid | 32399-0250 | |
| Ms. | Ms. | Sarah | Liko | Ph.D. | Program Administrator | Florida Division of Historical Resources | R.A. Gray Building | 500 South Bronough Street | Tallahassee | FL | Florid | 32399-0250 | |
| Mr. | Mr. | Michael | Anderson | | Regional Willdlife Administrator | Florida Fish and Wildlife Conservation Commission | Habitat and Species Conservation Division | 8535 Northlake Boulevard | West Palm Beach | FL | Florid | 33412 | |
| Mr. | Mr. | Darrell | Land | | Florida Panther Team Leader | Florida Fish and Wildlife Conservation Commission | | 298 Sabal Palm Road | Naples | FL | Florid | 34114 | |
| Dr. | Dr. | Thomas | Reinert | | Regional Director | Florida Fish and Wildlife Conservation Commission | South Florida Regional Office | 8535 Northlake Boulevard | West Palm Beach | FL | Florid | 33412 | |
| Mr. | Mr. | Kipp | Frohlich | | Director, Habitat and Species Conservation Division | Florida Fish and Wildlife Conservation Commission | Habitat and Species Conservation Division | 620 South Meridian Street | Tallahassee | FL | Florid | 32399 | |
| Ms. | Ms. | Robin | Boughton | | Leader, Wildlife Research | Florida Fish and Wildlife Conservation Commission | | 1105 Southwest Williston Road | Gainesville | FL | Florid | 32601 | |
| Mr. | Mr. | Brad | Gruver | | Leader, Species Conservation Planning | Florida Fish and Wildlife Conservation Commission | | 1320 Executive Center Drive | Tallahassee | FL | Florid | 32301 | |
| Mr. | Mr. | Scott | Sanders | | Director, Office of Conservation Planning Services | Florida Fish and Wildlife Conservation Commission | | 620 South Meridian Street | Tallahassee | FL | Florid | 32399 | |
| Mr. | Mr. | Michael | Brooks | | Leader, Wildlife and Habitat Management | Florida Fish and Wildlife Conservation Commission | | 620 South Meridian Street | Tallahassee | FL | Florid | 32399 | |
| Ms. | Ms. | Carol | Knox | | Leader, Imperiled Species Management | Florida Fish and Wildlife Conservation Commission | | 1320 Executive Center Drive | Tallahassee | FL | Florid | 32301 | |
| Mr. | Mr. | Brien | Culhane | | Chief, Planning and Compliance | National Park Service | Everglades National Park | 40001 State Road 9336 | Homestead | FL | Florid | 33034 | |
| Dr. | Dr. | Roy | Crabtree | | Regional Administrator | NOAA - National Marine Fisheries Service | Southeast Regional Office | 263 13th Avenue South | St. Petersburg | FL | Florid | 33701 | |
| Ms. | Ms. | Lisa | Koehler | | Administrator | South Florida Water Management District | Big Cypress Basin Service Center | 2660 Horseshoe Drive North, Suite 101 | Naples | FL | Florid | 34104 | |
| Mr. | Mr. | Ernie | Marks | | Executive Director | South Florida Water Management District | | 3301 Gun Club Road | West Palm Beach | FL | Florid | 33406 | |
| Ms. | Ms. | Margaret | Wuerstle | | Executive Director | Southwest Florida Regional Planning Council | | 1400 Colonial Blvd, Suite 1 | Fort Myers | FL | Florid | 33907 | |
| Mr. | Mr. | Tunis | McElwain | | | U.S. Army Corps of Engineers | Fort Myers Regulatory Office | 1520 Royal Palm Square Boulevard #310 | Fort Myers | FL | Florid | 33919 | |
| Colonel | Colonel | Andrew | Kelly | | District Commander | U.S. Army Corps of Engineers | Jacksonville District | P.O. Box 4970 | Jacksonville | FL | Florid | 33232-0019 | |
| Lieutenant Colo | Lieutenant Colonel | Jennifer | Reynolds | | Deputy District Commander, South Florida | U.S. Army Corps of Engineers | Jacksonville District | 1400 Centrepark Boulevard | West Palm Beach | FL | Florid | 33401-7402 | |
| Mr. | Mr. | Jason | Spinning | | Acting Chief | U.S. Army Corps of Engineers | Environmental Protection Branch, Planning Division<br>Jacksonville District | 10117 Princess Palm Avenue, Suite 120 | Tampa | FL | Florid | 33610-8302 | |
| Mr. | Mr. | Trey | Glenn | | Regional Administrator | U.S. Environmental Protection Agency - Region 4 | Sam Nunn Atlanta Federal Center | 61 Forsyth Street SW | Atlanta | GA | Georgi | 30303 | |
| Mr. | Mr. | | | | Regional Director | Florida Fish and Wildlife Conservation Commission | Dinner Island Ranch Wildlife Management Area | 8235 Northlake Boulevard | West Palm Beach | FL | Florid | 33412 | |
| Mr. | Mr. | Clark | Ryals | | Collier County Forester | Florida Forest Service | Picyune Strand State Forest | 10941 Palm Beach Boulevard | Fort Myers | FL | Florid | 33905-5904 | |
| | | | | | Collier County Forest Area Supervisor | Florida Forest Service | Picyune Strand State Forest | 710 Randall Boulevard | Naples | FL | Florid | 34120-3311 | |
| Ms. | Ms. | Tamara | Whittington | | Superintendent | Big Cypress National Preserve | | 33100 Tamiami Trail East | Ochopee | FL | Florid | 34141 | |
| Mr. | Mr. | Ron | Clark | | | Big Cypress National Preserve | | 33100 Tamiami Trail East | Ochopee | FL | Florid | 34141 | |
| Mr. | Mr. | David | Weeks | AICP | Growth Management Manager | Collier County Comprehensive Planning Department | | 2800 North Horseshoe Drive | Naples | FL | Florid | 34104 | |
| Mr. | Mr. | Eric | Draper | | Director | Florida Department of Environmental Protection | Florida Park Service | 3900 Commonwealth Boulevard., MS 500 | Tallahassee | FL | Florid | 32399 | |
| | | | | | State Environmental Process Administrator | Florida Department of Transportation | State Environmental Management Office | 605 Suwannee Street, MS 37 | Tallahassee | FL | Florid | 32399 | |
| Mr. | Mr. | Jennifer | Goff | | Director, Office of Conservation Planning Services | Florida Fish and Wildlife Conservation Commission | | 620 South Meridian Street | Tallahassee | FL | Florid | 32399 | |
| Mr. | Mr. | David | Johnson | | Leader, Wildlife and Habitat Management | Florida Fish and Wildlife Conservation Commission | | 620 South Meridian Street | Tallahassee | FL | Florid | 32399 | |

# Eastern Collier MSHCP EIS, Mailing List

## ELECTED AND APPOINTED OFFICIALS

| Sal. | Name | Title | Organization Name | Address 1 | Address 2 | City | State | Zip |
|---|---|---|---|---|---|---|---|---|
| **FEDERAL ELECTED OFFICAILS** | | | | | | | | |
| The Honorable | Marco Rubio | US Senator | United States Senate | | 3299 Tamiami Trail East, Suite 106 | Naples | FL | 34112 |
| The Honorable | Bill Nelson | US Senator | United States Senate | Justice Center Annex Building | 200 Main Street, Suite 801 | Ft. Myers | FL | 33901 |
| The Honorable | Francis Rooney | US Congressman, Florida District 19 | United States Congress | | 3299 Tamiami Trail East, Suite 105 | Naples | FL | 34112 |
| The Honorable | Mario Diaz-Balart | US Congressman, Florida District 25 | United States Congress | | 4715 Golden Gate Parkway, Suite 1 | Naples | FL | 34116 |
| The Honorable | Carlos Curbelo | US Congressman, Florida District 26 | United States Congress | | 404 West Palm Dr | Florida City | FL | 33034 |
| **STATE ELECTED OFFICIALS** | | | | | | | | |
| The Honorable | Kathleen Passidomo | Florida State Senator, District 28 | The Florida Senate | | 3299 East Tamiami Trail, Suite 203 | Naples | FL | 34112 |
| The Honorable | Byron Donalds | Florida State Representative, District 80 | The Florida House | Harmon Turner Building | 3299 Tamiami Trail East, Suite 212 | Naples | FL | 34112 |
| The Honorable | | Florida State Representative, District 105 | The Florida House | | 2500 Northwest 107th Avenue, Suite 204 | Doral | FL | 33172 |
| The Honorable | Heather Fitzenhagen | Florida State Representative, District 78 | The Florida House | | 2120 Main Street, Suite 208 | Fort Myers | FL | 33901 |
| **COLLIER COUNTY OFFICALS** | | | | | | | | |
| The Honorable | Donna Fiaia | County Commissioner, District 1 | Collier County BOCC | | 3299 Tamiami Trail East, Suite 303 | Naples | FL | 34112 |
| The Honorable | Andy Solis, Esq. | County Commissioner, District 2, Chairman | Collier County BOCC | | 2335 Orange Blossom Drive | Naples | FL | 34109 |
| The Honorable | Burt L. Saunders | County Commissioner, District 3 | Collier County BOCC | | 3299 Tamiami Trail East, Suite 303 | Naples | FL | 34112 |
| The Honorable | Penny Taylor | County Commissioner, District 4 | Collier County BOCC | | 3299 Tamiami Trail East, Suite 303 | Naples | FL | 34112 |
| The Honorable | William L. McDaniel, Jr. | County Commissioner, District 5, Vice Chairman | Collier County BOCC | | 3299 Tamiami Trail East, Suite 303 | Naples | FL | 34112 |
| Mr. | Leo E. Ochs, Jr. | County Manager | Collier County | County Manager's Office | 3299 Tamiami Trail East, Suite 202 | Naples | FL | 34112 |
| Sheriff | Kevin J. Rambosk | Sheriff | Collier County Sheriff's Department | Collier County Government Center, Bldg J | 3319 East Tamiami Trail | Naples | FL | 34112 |
| Mr. | Abe Skinner, CFA | Collier County Property Appraiser | Collier County | Collier County Government Center | 3950 Radio Road | Naples | FL | 34104 |
| Mr. | Larry H. Ray | Tax Collector | Collier County | Courthouse Building, C-1 Rm. 310 | 3291 Tamiami Trail East | Naples | FL | 34112 |
| Dr. | Kamela Patton | Superintendent | Collier County District School Board | Dr. Martin Luther King, Jr. Administrative Center | 5775 Osceola Trail | Naples | FL | 34109 |
| The Honorable | Jennifer J. Edwards | Supervisor of Elections | Collier County | | 3750 Enterprise Ave | Naples | FL | 34104 |
| **LEE COUNTY OFFICIALS** | | | | | | | | |
| The Honorable | John Manning | County Commissioner, District 1 | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | 33902 |
| The Honorable | Cecil Pendergrass | County Commissioner, District 2, Chairman | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | 33902 |
| The Honorable | Larry Kiker | County Commissioner, District 3, Vice Chairman | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | 33902 |
| The Honorable | Brian Hamman | County Commissioner, District 4 | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | 33902 |
| The Honorable | Frank Mann | County Commissioner, District 5 | Lee County BOCC | Old Lee County Courthouse | P.O. Box 398 | Fort Myers | FL | 33902 |
| Mr. | Roger Desjarlais | County Manager | Lee County | | P.O. Box 398 | Fort Myers | FL | 33902 |
| Sheriff | Mike Scott | Sheriff | Lee County Sheriff's Department | | 14750 Six Mile Cypress Pkwy | Fort Myers | FL | 33912 |
| Mr. | Kenneth M. Wilkinson, CFA | Lee County Property Appraiser | Lee County | | P.O. Box 1546 | Fort Myers | FL | 33902 |
| Mr. | Larry D. Hart | Tax Collector | Lee County | Lee County Tax Collector | 2480 Thompson St | Fort Myers | FL | 33901 |
| Mr. | Gregory Adkins, Ed.D. | Superintendent | Lee County District School Board | Lee County Public Education Center | 2855 Colonial Blvd. | Fort Myers | FL | 33966 |
| The Honorable | Tommy Doyle | Supervisor of Elections | Lee County | | PO BOX 2545 | Fort Myers | FL | 33902 |
| **HENDRY COUNTY OFFICIALS** | | | | | | | | |
| The Honorable | Emma Byrd | County Commissioner, District 1, Vice Chair | Hendry County BOCC | | PO Box 1760 | LaBelle | FL | 33975 |
| The Honorable | Darrell Harris | County Commissioner, District 2 | Hendry County BOCC | | PO Box 1760 | LaBelle | FL | 33975 |
| The Honorable | Mitchell Wills | County Commissioner, District 3, Chairperson | Hendry County BOCC | | PO Box 1760 | LaBelle | FL | 33975 |
| The Honorable | Michael Swindle | County Commissioner, District 4 | Hendry County BOCC | | PO Box 1760 | LaBelle | FL | 33975 |
| The Honorable | Karson Turner | County Commissioner, District 5 | Hendry County BOCC | | PO Box 1760 | LaBelle | FL | 33975 |
| Mr. | Charles T. Chapman IV | County Administrator | Hendry County | | PO Box 2340 | LaBelle | FL | 33975 |
| Sheriff | Steve Whidden | Sheriff | Hendry County Sheriff's Department | West District - Main Headquarters Office | 101 S. Bridge Street | LaBelle | FL | 33935 |
| Ms. | Dena R. Pittman, CFA | Hendry County Property Appraiser | Hendry County | | PO Box 1840 | LaBelle | FL | 33975 |
| Mr. | Patrick B. Langford | Tax Collector | Hendry County | | 25 E. Hickpochee<br>PO BOX 1780 | LaBelle | FL | 33935 |
| Mr. | Paul K. Puletti | Superintendent | Hendry County District School Board | | PO BOX 1980 | LaBelle | FL | 33975 |
| Ms. | Brenda Hoots | Supervisor of Elections | Hendry County | | PO BOX 174 | LaBelle | FL | 33975 |

## ORGANIZATIONS

| Sal. | First | Last | Title | Organization | Address 1 | Address 2 | City | St | Zip |
|---|---|---|---|---|---|---|---|---|---|
| Mr. | Paul | Owens | President | 1000 Friends of Florida | 1000 Friends of Florida | P.O. Box 5948 | Tallahassee | FL | 32314-5948 |
| Dr. | Hilary | Swain | Sr. Research Program Director | Archbold Biological Station | | 123 Main Drive | Venus | FL | 33960-2039 |
| Mr. | Jason | Lauritsen | Sanctuary Director | Audubon of Florida | Corkscrew Swamp Sanctuary & Blair Audobon Center | 375 Sanctuary Road West | Naples | FL | 34120 |
| Ms. | Julie | Wraithmell | Executive Director | Audubon of Florida | Florida State office | 4500 Biscayne Blvd., Suite 350 | Miami | FL | 33137 |
| Mr. | Brad | Cornell | Southwest Florida Policy Associate | Audubon of the Western Everglades | Audubon of Florida | PO BOX 1738 | Naples | FL | 34106 |
| Ms. | Eileen | Arsenault | President | Audubon of the Western Everglades | Audubon of Florida | PO BOX 1738 | Naples | FL | 34106 |
| Mr. | Dan | VanNorman | President | Audubon of Southwest Florida | Audubon of Florida | PO Box 61041 | Fort Myers | FL | 33906-1041 |
| Mr. | Brent | Klein | Assistant Principal | Beacon High School Immokalee | Bethune Education Center | 620 South 5th Street | Immokalee | FL | 34142 |
| Mr. | Gene | Lollis | Ranch Manager | Buck Island Ranch | | 300 Buck Island Ranch Road | Lake Placid | FL | 33852 |
| Ms. | Julia | Perkins | | Coalition of Immokalee Workers | | P.O. Box 603 | Immokalee | FL | 34143 |
| Dr. | Daniel | Smith | Research Associate | College of Sciences, Department of Biology | University of Central Florida | 4110 Libra Drive | Orlando | FL | 32816-2368 |
| Ms. | Anne | McLaughlin | Executive Director | Collier County MPO | Collier County Metropolitan Planning Organization | 2885 S. Horseshoe Drive | Naples | FL | 34104 |
| Ms. | Brenda | Brooks | Executive Director | CREW Land & Water Trust | | 23998 Corkscrew Road | Estero | FL | 33928 |
| Ms. | Elizabeth | Fleming | Senior Florida Representative | Defenders of Wildlife | | 3637 Fourth Street, North, Suite 230 | St. Petersburg | FL | 33704 |
| Dr. | Elizabeth | Pienaar | Florida Policy Specialist | Department of Wildlife Ecology & Conservation | University of Florida | 316 Newins-Ziegler Hall, PO Box 110430 | Gainesville | FL | 32611 |
| Ms. | Shirley | Calhoun | President | East Naples Civic Association | | PMB #49 8595 Collier Blvd., Suite 107 | Naples | FL | 34114-3556 |
| | | | | Everglades Coordinating Council | | 14775 SW 18 Court | Davie | FL | 33325 |
| Mr. | Jim | Gross | Executive Director | Florida Defenders of the Environment | | P.O. Box 357086 | Gainesville | FL | 32635 |
| Mr. | Leslie | Alderman | | Florida Panther Conservation Bank | | 6118 DEER RUN | Ft Myers | FL | 33908 |
| Mr. | Stephen | Williams | President | Florida Panther Society | | P.O. Box 358683 | Gainesville | FL | 32635 |
| Mr. | Todd | Hallman | | Florida Sportsmen Conservation Association | | 15287 99 St North | West Palm Beach | FL | 33412 |
| Ms. | Meredith | Barnard | Southwest Florida Field Representative | Florida Wildlife Federation | | 2590 Golden Gate Parkway, Suite 105 | Naples | FL | 34105 |
| Mr. | Philip | Kushlan | President | Friends of the Everglades | | 11767 South Dixie Hwy #232 | Miami | FL | 33156 |
| Mr. | Tom | Trotta | | Friends of the Florida Panther Refuge, Inc. | c/o U.S. Fish and Wildlife Service | 12085 SR 29 South | Immokalee | FL | 34142 |
| Mr. | Danny | Gonzalez | President | Immokalee Chamber of Commerce | | 1300 N 15th St #2 | Immokalee | FL | 34142 |
| Mr. | Leo | Rodgers | President | Immokalee Civic Association | | 502 E. New Market Street | Immokalee | FL | 34142 |
| Ms. | Debrah | Forester | Director | Immokalee Community Redevelopment Agency | | 750 South 5th Street | Immokalee | FL | 34142 |
| Mr. | Don | Scott, AICP | Executive Director | Lee County MPO | Lee County Metropolitan Planning Organization | 815 Nicholas Parkway E | Cape Coral | FL | 33915-0045 |
| Mr. | Jack | Mulvena | President & CEO | Naples Zoo | | 1590 Goodlette-Frank Rd | Naples | FL | 34102 |
| Ms. | Jessica | Bibza | Florida Policy Specialist | National Wildlife Federation | | 600 W Peachtree St NW, suite 1860 | Atlanta | GA | 30308 |
| Ms. | Susan | Kaderka | Director | National Wildlife Federation | | 505 East Huntland Drive, Suite 485 | Austin | TX | 78752 |
| Mr. | Desmond | Duke | | Ecoresolve | | 21346 Saint Andrews Blvd., Suite 434 | Boca Raton | FL | 33433 |
| Ms. | Isabel | Garcia | Executive Director | Redlands Christian Migrant Association | | 402 W. Main St. | Immokalee | FL | 34142 |
| Ms. | Connie | Langmann | President | Responsible Growth Management Coalition | | P.O. Box 1826 | Fort Myers | FL | 33902 |
| Ms. | Amelia | Horadam | Environmental Manager | Rookery Bay National Estuarine Research Reserve | | 300 Tower Rd | Naples | FL | 34113 |
| | Cris | Costello | Organizing Representative | Sierra Club | | PO BOX 3485 | Sarasota | FL | 34236 |
| Mr. | Frank | Jakalone | Senior Organizing Manager | Sierra Club | Florida Regional Field Office | 1990 Central Avenue | St. Petersburg | FL | 33712 |
| Mr. | Marty | Daltry | | Sierra Club | Fort Myers Regional Office | 1415 Dean Street Suite 100 | Fort Myers | FL | 33901 |
| Mr. | Jonathan | Ullman | | Sierra Club | South Florida Regional Office | 300 Aragon Avenue, Suite 360 | Coral Gabels | FL | 33134 |
| Mr. | Matthew | Schwartz | Executive Director | South Florida Wildlands Association | | PO Box 30211 | Ft. Lauderdale | FL | 33303 |
| Ms. | Jennyfer | Torres | Board Chair | Southwest Florida Hispanic Chamber of Commerce | | 1400 Colonial Blvd., Suite 250 | Fort Myers | FL | 33907 |
| Ms. | Margaret | Wuerstle | Executive Director | Southwest Florida Regional Planning Council | | 1400 Colonial Blvd, Ste 1 | Ft Myers | FL | 33907 |
| Dr. | Kelly | Morgan | Center Director | Southwest Florida Research and Education Center | | 2685 SR 29 North, RM # 7712-18 | Immokalee | FL | 34142 |
| Mr. | Rob | Moher | President and CEO | The Conservancy of Southwest Florida | | 1495 Smith Preserve Way | Naples | FL | 34102 |
| Ms. | Amber | Crooks | Environmental Policy Manager | The Conservancy of Southwest Florida | | 1495 Smith Preserve Way | Naples | FL | 34102 |
| Ms. | Tiffany A | Esposito | Chief of Staff | The Greater Naples Chamber of Commerce | | 2390 Tamiami Trl. N., Ste. 210 | Naples | FL | 34103 |
| Ms. | Lisa | Duncan-Pullen | Office Manager | The Nature Conservancy | Florida Field Office | 2500 Maitland Center Parkway, Suit 311 | Maitland | FL | 32715 |
| Ms. | Ricky | Pires | Director | Wings of Hope | Wings of Hope Florida Gulf Coast University | 10501 FGCU Blvd. | South Ft. Myers | FL | 33965 |

## NATIVE AMERICAN TRIBES

| Sal. | First | Last | Title | Organization | Address 1 | Address 2 | City | St | Zip | Email |
|---|---|---|---|---|---|---|---|---|---|---|
| Mr. | Billy | Cypress | Chairman | Miccosukee Tribe of Indians of Florida | | Tamiami Station P.O. Bosx 440021 | Miami | FL | 33144 | |
| Mr. | Fred | Dayhoff | Section 106 and NAGPRA Coordinator | Miccosukee Tribe of Indians of Florida | | HC 61 SR Box 68 Old Loop Road | Ochopee | FL | 34141 | |
| Mr. | James | Floyd | Principle Chief | Muscogee (Creek) Nation | Office of Administration | P.O. Box 580 | Okmulgee | OK | 74447 | |
| Ms. | Corain | Lowe-Zepeda | Tribal Historic Preservation Officer | Muscogee (Creek) Nation | Cultural Preservation | P.O. Box 580 | Okmulgee | OK | 74447 | |
| Ms. | Stephanie A. | Bryan | Tribal Chair | Poarch Band of Creek Indians | | 5811 Jack Spring Road | Almore | AL | 36502 | |
| Ms. | Carolyn M. | White | Acting Tribal Historic Preservation Officer | Poarch Band of Creek Indians | | 5811 Jack Spring Road | Almore | AL | 36502 | THPO@pci-nsn.gov |
| Mr. | Marcellus W. | Osceola | Chairman | Seminole Tribes of Florida | | 6300 Stirling Road | Hollywood | FL | 33024 | |
| Dr. | Paul | Backhouse, Ph.D. | Tribal Historic Preservation Officer | Seminole Tribes of Florida | Tribal Historic Presrvation Office | 30290 Josie Billie Highway, PMB 1004 | Clewiston | FL | 33440 | |
| Mr. | Bradley | Mueller | Compliance Review Supervisor | Seminole Tribes of Florida | Tribal Historic Presrvation Office | 30290 Josie Billie Highway, PMB 1004 | Clewiston | FL | 33440 | THPOCompliance@semtri |
| Ms. | Victoria | Menchaca, MA | Compliance Review Specialist | Seminole Tribe of Florida | Tribal Historic Preservation Office | 30291 Josie Billie Highway, PMB 1004 | Clewiston | FL | 33440 | VictoriaMenchaca@sen |
| Mr. | Gregory | Chilcoat | Principle Chief | Seminole Nation of Oklahoma | | P.O. Box 1498 | Wewoka | OK | 74884 | |
| Mr. | Theodore | Isham | Tribal Historic Preservation Officer | Seminole Nation of Oklahoma | | P.O. Box 1498 | Wewoka | OK | 74884 | isham.t@sno-nsn.gov |

## FEDERAL AND STATE AGENCIES

| Sal. | First | Last | Title | Organization | Address 1 | Address 2 | City | St | Zip |
|---|---|---|---|---|---|---|---|---|---|
| Ms. | Mary | Glowacki, Ph.D | Chief and State Archaeologist | Bureau of Archaeological Research | B. Calvin Jones Center for Archaeology at the Governor Martin House | 1001 DeSoto Park Drive | Tallahassee | FL | 32301 |
| Ms. | Alissa | Slade Lotane | Bureau Chief | Bureau of Historic Preservation | R.A. Gray Building | 500 S. Bronough Street | Tallahassee | FL | 32399-0250 |
| Mr. | Justin | Lobb | Airport Manager | Collier County Airport Authority | Immokalee Regional Airport (IMM) | 165 Airpark Blvd. | Immokalee | FL | 34142 |
| | Renee | Rau | Park Manager | Fakahatchee Strand Preserve State Park | | P.O. Box 548 | Copeland | FL | 34137 |
| Mr. | Chris | Stahl | Clearinghouse Coordinator | Florida Department of Environmental Protection | Florida State Clearinghouse Division | 3900 Commonwealth Blvd., MS 47 | Tallahassee | FL | 32399-3000 |
| Mr. | Donald | Forgione | Director | Florida Department of Environmental Protection | Florida Park Service | 3900 Commonwealth Boulevard | Tallahassee | FL | 32399 |
| Ms. | Gwen | Pipkin | Environmental Administrator | Florida Department of Transportation | District 1 | 801 N. Broadway Ave | Bartow | FL | 33830 |
| Mr. | Brent | Setchell | District Environmental Permitting Engineer | Florida Department of Transportation | District 1 | 801 N. Broadway Ave | Bartow | FL | 33830 |
| Mr. | Marlon | Bizerra | Planning and Environmental Manager | Florida Department of Transportation | District 1 | 801 N. Broadway Ave | Bartow | FL | 33830 |
| Mr. | Xavier | Pagan | Natural and Community Resources Administrator | Florida Department of Transportation | State Environmental Management Office | 605 Suwannee Street | Tallahassee | FL | 32399 |
| Ms. | Katasha | Cornwell | State Environmental Process Administrator | Florida Department of Transportation | State Environmental Management Office | 605 Suwannee Street | Tallahassee | FL | 32399 |
| Mr. | Timothy | Parsons, Ph.D | Interim Director and State Historic Preservation Of | Florida Division of Historical Resources | R.A. Gray Building | 500 S. Bronough Street | Tallahassee | FL | 32399-0250 |
| Ms. | Sarah | Liko, Ph.D. | Program Administrator | Florida Division of Historical Resources | R.A. Gray Building | 500 S. Bronough Street | Tallahassee | FL | 32399-0250 |
| Mr. | Michael | Anderson | Regional Wildlife Administrator | Florida Fish and Wildlife Conservation Commission | Habitat and Species Conservation Division | 8535 Northlake Boulevard | West Palm Beach | FL | 33412 |
| Mr. | Darrell | Land | Florida Panther Team Leader | Florida Fish and Wildlife Conservation Commission | | 298 Sabal Palm Road | Naples | FL | 34114 |
| Dr. | Thomas | Reinert | Regional Director | Florida Fish and Wildlife Conservation Commission | South Florida Regional Office | 8535 Northlake Boulevard | West Palm Beach | FL | 33412 |
| Mr. | Kipp | Frohlich | Director, Habitat and Species Conservation Divisio | Florida Fish and Wildlife Conservation Commission | Habitat and Species Conservation Division | 620 S Meridian Street | Tallahassee | FL | 32399 |
| Ms. | Robin | Boughton | Leader, Wildlife Research | Florida Fish and Wildlife Conservation Commission | | 1105 Southwest Williston Road | Gainesville | FL | 32601 |
| Mr. | Brad | Gruver | Leader, Species Conservation Planning | Florida Fish and Wildlife Conservation Commission | | 1320 Executive Center Drive | Tallahassee | FL | 32301 |
| Mr. | Scott | Sanders | Director, Office of Conservation Planning Services | Florida Fish and Wildlife Conservation Commission | | 620 Meridian Street | Tallahassee | FL | 32399 |
| Mr. | Michael | Brooks | Leader, Wildlife and Habitat Management | Florida Fish and Wildlife Conservation Commission | | 620 Meridian Street | Tallahassee | FL | 32399 |
| Ms. | Carol | Knox | Leader, Imperiled Species Management | Florida Fish and Wildlife Conservation Commission | | 1320 Executive Center Drive | Tallahassee | FL | 32301 |
| Mr. | Brien | Culhane | Chief, Planning and Compliance | National Park Service | Everglades National Park | 40001 State Road 9336 | Homestead | FL | 33034 |
| Dr. | Roy | Crabtree | Regional Administrator | NOAA - National Marine Fisheries Service | Southeast Regional Office | 263 13th Avenue South | St. Petersburg | FL | 33701 |
| Ms. | Lisa | Koehler | Administrator | South Florida Water Management District | Big Cypress Basin Service Center | 2660 Horseshoe Drive N., Suite 101 | Naples | FL | 34104 |
| Mr. | Ernie | Marks | Executive Director | South Florida Water Management District | | 3301 Gun Club Road | West Palm Beach | FL | 33406 |
| Ms. | Margaret | Wuerstle | Executive Director | Southwest Florida Regional Planning Council | | 1400 Colonial Blvd, Ste 1 | Fort Myers | FL | 33907 |
| Mr. | Tunis | McElwain | | US Army Corps of Engineers | Fort Myers Regulatory Office | 1520 Royal Palm Square Blvd #310 | Fort Myers | FL | 33919 |
| Colonel | Andrew | Kelly | District Commander | US Army Corps of Engineers | Jacksonville District | PO BOX 4970 | Jacksonville | FL | 33232-0019 |
| Lieutenant C | Jennifer | Reynolds | Deputy District Commander, South Florida | US Army Corps of Engineers | Jacksonville District | 1400 Centrepark Boulevard | West Palm Beach | FL | 33401-7402 |
| Mr. | Jason | Spinning | Acting Chief | US Army Corps of Engineers | Environmental Protection Branch, Planning Division<br>Jacksonville District | 10117 Princess Palm Ave., Suite 120 | Tampa | FL | 33610-8302 |
| Mr. | Trey | Glenn | Regional Administrator | US Environmental Protection Agency - Region 4 | Sam Nunn Atlanta Federal Center | 61 Forsyth Street SW | Atlanta | GA | 30303 |
| Mr. | | | Regional Director | Florida Fish and Wildlife Conservation Commission | Dinner Island Ranch Wildlife Management Area | 8235 Northlake Boulevard | West Palm Beach | FL | 33412 |
| Mr. | Clark | Ryals | Collier County Forester | Florida Forest Service | Picyune Strand State Forest | 10941 Palm Beach Blvd. | Fort Myers | FL | 33905-5904 |
| | | | Collier County Forest Area Supervisor | Florida Forest Service | Picyune Strand State Forest | 710 Randall Blvd. | Naples | FL | 34120-3311 |
| Ms. | Tamara | Whittington | Superintendent | Big Cypress National Preserve | | 33100 Tamiami Trail East | Ochopee | FL | 34141 |
| Mr. | Ron | Clark | | Big Cypress National Preserve | | 33100 Tamiami Trail East | Ochopee | FL | 34141 |
| Mr. | David | Weeks, AICP | Growth Management Manager | Collier County Comprehensive Planning Department | | 2800 North Horseshoe Drive | Naples | FL | 34104 |

## LAND OWNERS

| Sal. | First | Last | Title | Organization | Address 1 | Address 2 | City | St | Zip |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Alico | | 10070 Daniels Interstate Court, Suite 100 | Fort Myers | FL | 33913 |
| | | | | Barron Collier Investment, Ltd | | | | | |
| | | | | Collier Enterprise Management, Inc. | | | | | |
| | | | | Consolidated Citrus Limited Partnership | | | | | |
| | | | | English Brothers partnership | | | | | |
| | | | | Half Circle L Ranch, LLP | | | | | |
| | | | | Heller Bros. Packing corp. | | | | | |
| | | | | John E. Prince, Jr. Trust | | | | | |
| | | | | Pacific land, Ltd. | | | | | |
| | | | | Sunniland Family Limited partnership | | | | | |

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| Colonel |

Lieutenant Colonel

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# United States Department of the Interior

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

October 18, 2018

Dear Conservation Partner;

The U.S. Fish and Wildlife Service (Service) is announcing the availability of our draft environmental impact statement (dEIS) and a habitat conservation plan (HCP) associated with the incidental take permit (ITP) applications of eleven Collier County landowners under the Endangered Species Act of 1973, as amended. Each of the landowners, collectively known as the Eastern Collier Property Owners, LLC, requests a 50-year ITP for the Florida panther and 18 other Federal or State-listed species for take incidental to residential and commercial development, earth mining, and low-intensity rural-land activities in a defined portion of Collier County, Florida.

The Service invites you to provide comments regarding the dEIS during the 45-day public comment period from October 19, 2018, through December 3, 2018. Your comments can be submitted electronically at http://www.regulations.gov and must be received by 11:59 p.m. Eastern Time on the closing date. Any comments received after the closing date may not be considered in the final decision on these actions.

A Notice of Availability for the dEIS will be published in the *Federal Register* under Docket Number FWS-R4-ES-2018-0079. You may obtain copies of the dEIS and HCP from the internet at the following location: http://www.regulations.gov (search for Docket Number FWS-R4-ES-2018-0079). You may submit written comments by one of the following methods:

- Internet: http://www.regulations.gov. Follow the instructions for submitting comments on Docket No. FWS-R4-ES-2018-0079; or
- Hard Copy: Via U.S. mail or hand-delivery to Public Comments Processing, Attn: FWS-R4-ES-2018-0079; U.S. Fish and Wildlife Service Headquarters, MS: BPHC; 5275 Leesburg Pike, Falls Church, VA 22041-3803.

We look forward to your participation in the EIS process.

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services Office