Habitat Conservation Plan
For Bosque Canyon Ranch

Prepared for:

Bosque Canyon Ranch

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EXECUTIVE SUMMARY

The Bosque Canyon Ranch (Ranch) is located approximately eight miles southeast of Meridian, Texas (approximately 80 miles south of Fort Worth) near the intersection of State Highway 22 and County Road 1070 (see Exhibit A). The Ranch consists of roughly 3,745 acres located in the Lampasas Cut Plain vegetation area of Texas as described in Shinners and Mahler's Flora of North Central Texas (Diggs et al 1999). Approximately half of the Ranch is comprised of open grassland areas and the other half is comprised of wooded areas with various tree and shrub species, with numerous canyons spread throughout.

The Ranch was designed as a private ranch, owned by two partnerships, Bosque Canyon Ranch, L.P. and BC Ranch II, L.P. (collectively, BCR or Applicant), who have already conveyed to the North American Land Trust two conservation easements that permanently protect approximately 93 percent of the Ranch (Conservation Easements) (see Exhibit B). BCR has designated 48, 5-acre home sites (Homesteads), which are owned by individual BCR partners (Partners), and one additional 5-acre parcel for certain common improvements, in the remaining seven percent of the land not covered by a Conservation Easement (see Exhibit B). Within each Homestead, the Partner is restricted to placing structures within a 2-acre building envelope designated by BCR, with potential direct impacts being less than one acre. BCR's very low intensity, designed development of the Ranch preserves the Ranch's unique natural resources and is an excellent example of voluntary conservation development.

The construction of the proposed houses and associated infrastructure may cause the loss or degradation of habitat for the federally listed golden-cheeked warbler (*Setophaga chrysoparia*, GCWA), which may result in "take" within portions of approximately 35 of the 48 Homesteads: 26 Homesteads are entirely located within GCWA habitat, 3 Homesteads are partially located within GCWA habitat, and 6 Homesteads are located adjacent to GCWA habitat. The 26 Homesteads located entirely within GCWA habitat will result in 26 acres of direct impacts (on average, overall 1 acre of potential direct impact per Homestead). The 3 Homesteads that are located partially within the GCWA habitat will result in approximately 2.21 acres of direct impacts. The building envelopes for the remaining 6 Homesteads are located outside of, but adjacent to GCWA habitat and therefore, no direct impacts are anticipated for these Homesteads. Therefore, the anticipated total direct impact to GCWA habitat is 28.21 acres. Using the Service standard of a 300 foot zone of indirect effects from cleared habitat, in addition to indirect effects from fragmentation, up to 293.63 acres of indirect impacts are

expected to occur in areas between and around Homesteads (areas directly impacted and areas indirectly impacted comprise the "Permit Area" – see Exhibit C).
Through coordination with the U.S. Fish and Wildlife Service (Service), BCR has decided to apply for a Section 10 (a)(1)(B) permit (Permit) under the U.S. Endangered Species Act (ESA) that would authorize the incidental take of the GCWA that could occur during construction, maintenance, and occupation within the Homesteads. This Habitat Conservation Plan (HCP) has been prepared in support of the Permit application and covers only those lands within the Homesteads that are in or adjacent to habitat for the GCWA, which are outside of the areas covered by the Conservation Easements (the remaining 3,500 acres of the Ranch – see Exhibit B, which depicts previously conserved areas, potential GCWA habitat, the Homesteads, and the roads).

The 28.21 acres of direct impacts to GCWA habitat will result from the clearing and construction that occurs within the Permit Area. This estimate of the potential upper limit of direct impacts resulting from the proposed development has been calculated through a combination of using aerial photography, survey files, data collected in the field, and limitations on the size of the structures contained in BCR's Design Rules and Guidelines (DRG), which are enforced by the BCR Design Review Committee (DRC) and the Ranch's homeowners association, the Bosque Canyon Ranch Association, Inc., a Texas Nonprofit Corporation (hereinafter HOA) pursuant to the covenants, conditions, and restrictions (CC&R) on the Homesteads (see Exhibit D for a summary of relevant DRG and CC&R provisions).[1] The individual Homestead shapes and sizes are known, but the 2-acre building envelopes within each Homestead could shift slightly depending on the size of the house and site specific conditions (e.g., location of existing trees that the owner wants to keep, screening, drainage), which may alter the precise areas of direct impacts. The direct impacts within each building envelope are not anticipated to be greater than one acre. In actuality, BCR does not expect the combined square footage of the house, garage/barn, porch and driveways on any Homestead to exceed 16,000 square feet (approximately 1/3rd of an acre) per Homestead and the DRG imposes a maximum square footage of 5,500 square feet of air conditioned space per building envelope (see Exhibit D). So while the actual potentially affected areas on each Homestead will each be substantially less than one acre, a conservative estimate (1 acre) will nevertheless show minimal potential impacts given the overall scale of the Ranch and GCWA habitat areas. These 1-acre estimates

[1] Bosque Canyon Ranch Declaration of Covenants, Conditions and Restrictions (April 3, 2006), Doc. No. 2006-00004466, BK-OPR, VL-638, PG-868, Recorded Sept. 12, 2006 at the Bosque County Clerk Office, Meridian, TX; Supplementary Declaration to Bosque Canyon Ranch Declaration of Covenants, Conditions and Restrictions (Oct. 15, 2007), Doc. No. 2007-00004399, Recorded Oct. 19, 2007 at the Bosque County Clerk Office, Meridian, TX.

assume a maximization of allowable building footprints plus an area around structures cleared for construction purposes and/or sight corridors and a contingency. The estimated impacts are also considered conservative because some Partners may never build on their Homesteads and others are not expected to maximize their footprints. Smaller structures would likely result in less clearing, which in turn would reduce the potential impacts. However, for the purposes of this HCP, we are assuming that the entire 1-acre potentially affected area will be directly impacted. In addition, since Homesteads are predominately used for weekend or vacation homes, most of the Homesteads will be occupied for only a fraction of the GCWA breeding season. This is in contrast to a continuously occupied community more frequently the subject of take permitting for the GCWA.

The impacts will be tempered and minimized through the DRG, which regulates many aspects of site clearing and construction (see Exhibit D). For example, in areas of mature juniper forests (as determined by the DRC and the most recent GCWA habitat assessment), clearing of sites outside of the Conservation Easements for construction can only occur during the period beginning September 1 of each year and ending on March 15 of the following year. Outdoor construction activities are required to be very limited by the existing DRGs, which are enforced by the DRC and HOA and were drafted with an intent to avoid and minimize GCWA impacts during the period of March 15 to April 30 of each year. Finally, during the period of April 30 to September 1 of each year, limited construction activities (but not clearing of the Ranch Homestead) are permitted by the DRGs. The CC&R require that no trees with a caliper in excess of two inches on any Homestead shall be removed, trimmed, or modified without the prior written consent of the DRC. Outside of the building envelope, no trees or shrubs of any kind shall be cut, trimmed, or removed without the prior written consent of the DRC. Furthermore, by a letter emailed to all Partners each year, which is enforced by the DRC, HOA, and Ranch Manager, BCR requires that loud and disruptive sounds are not allowed from sunrise until four hours after sunrise (approximately 7 am to 11 am) from March 15 to May 15. A copy of this letter was previously submitted to the Service.

The Conservation Easements permanently preserve 3,500 acres on the Ranch, including 924.35 acres of GCWA habitat and approximately 227.6 additional acres of GCWA supporting habitat (young oak-juniper forest/shrubland) (Exhibit B). BCR believes that the Service should consider these prior beneficial actions in the context of this HCP because BCR has voluntarily made conservation of the GCWA a priority and is a model of development within GCWA habitat. While the Conservation Easements have significantly protected the Ranch and the GCWA habitat, BCR also proposes to place additional restrictive covenants on portions of the Ranch

covered by the Conservation Easements as part of the HCP (hereinafter "HCP Restrictive Covenants") to include terms aimed at GCWA conservation and habitat management.

Section 1.
Introduction and Background

1.1 Overview and Background

This HCP has been prepared pursuant to the requirements of Section 10(a) of the ESA, for the proposed conservation development of up to one acre within each of 35 five-acre Homesteads (so, up to 35 acres of total development, which includes 28.21 acres of GCWA habitat and up to 293.63 acres of indirect effects), which comprise a very small portion of the 3,745 acre Ranch located in Bosque County, Texas (see Exhibit A and Exhibit C). Bosque Canyon Ranch, L.P. and BC Ranch II, L.P. (collectively, BCR or Applicant) has proved itself to be an exemplary steward of the Ranch's natural resources by making conservation a priority. The Ranch was purchased in 2003 with the intent of potentially developing the property. However, after performing analysis of the various development plans, BCR decided to preserve the majority of the land and create a conservation community on a very small portion of the Ranch. This strictly limited residential development focuses on preservation and conservation of GCWA habitat, open space, natural features, view corridors, and other plants and animals. The existing plan has been dramatically scaled back from early concept plans developed for the Ranch, which included hundreds of home sites. The alternative consideration process is discussed in detail in Section 8.

Although the Ranch includes 48 Homesteads that are approximately 5 acres in size each, and one approximately 5-acre parcel used for common improvements (see Exhibit B), only twenty-six have potentially affected areas that are located entirely within GCWA habitat, three Homesteads have potentially affected areas located partially within GCWA habitat, and six Homesteads have potentially affected areas adjacent to GCWA habitat (see Exhibit C). The Homestead locations were carefully selected to avoid compromising the Ranch's many conservation values and to maintain the integrity of the natural setting.

After determining the magnitude of development that could occur on the Ranch, BCR began consultation with the North American Land Trust ("NALT") in 2004 to discuss conservation of the Ranch. During NALT's initial site visit, their biologist observed numerous (i.e., at least 10) male GCWAs. Upon learning about the presence of the GCWA, BCR contracted with a local, reputable consulting firm, which included an ornithologist and a biologist familiar with the GCWA and its habitat requirements. These biologists

performed a site visit on April 29th 2004 and prepared a habitat assessment for the Ranch in March of 2005.

Over a 3-year period (i.e., 2005-2007) BCR was able to donate two separate Conservation Easements to NALT; each being approximately 1,750 acres in size (see Exhibit B). This resulted in approximately 3,500 acres of contiguous Conservation Easement Area (93% of the Ranch) containing approximately 924.35 acres of GCWA habitat (according to the 2012 Habitat Assessment) and 227.6 additional acres of GCWA supporting habitat (young oak-juniper forest/shrubland that is not yet suitable breeding habitat). This is probably the most significant conservation action for the GCWA ever undertaken in Bosque County. The remaining approximately 245 acres (7% of the Ranch) are Homesteads. While the Homesteads are not governed by the terms of the Conservation Easements, they are subject to other covenants and restrictions benefitting the GCWA, including measures that limit the construction footprint/building envelope, the timing of construction, and the amount of clearing, among other things, all of which were designed to protect the conservation values of the Ranch as a whole (See Exhibit D). Per the Design Rules and Guidelines (DRG), in areas of mature juniper forests (as determined by the BCR Design Review Committee (DRC) and based on the most recent GCWA habitat assessment), clearing of sites outside of the Conservation Easements for construction can only occur during the period beginning September 1 of each year and ending on March 15 of the following year. Outdoor construction activities are required by the DRG to be very limited during the period of March 15 to April 30 of each year. Finally, the DRG also require that during the period of April 30 to September 1 of each year, limited construction activities (but not clearing of the Ranch Homestead) are permitted. The CC&R require that no trees with a caliper (as described in the CC&R) in excess of two inches on any Homestead shall be removed, trimmed, or modified without the prior written consent of the DRC. Outside of the building envelope, no trees or shrubs of any kind shall be cut, trimmed, or removed without the prior written consent of the DRC. Furthermore, by a letter emailed to all Partners each year, which is enforced by the DRC, HOA, and Ranch Manager, BCR requires that loud and disruptive sounds are not allowed from sunrise until four hours after sunrise (approximately 7 am to 11 am) from March 15 to May 15.

The construction within the Homestead building envelopes may cause the loss or degradation of GCWA habitat. Consequently, BCR has decided it would be prudent to apply to the Service for a Permit to authorize the incidental take, as the term is defined below, of the GCWA potentially resulting from clearing, construction, operation, maintenance, occupation and repair of the proposed structures. These activities are

hereafter referred to collectively as the "Covered Activities" and are described in greater detail in section 2.2 below.

The term "incidental take" is defined as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity" (16 USC § 1539(a)(1)(B); 50 CFR § 402.02). The term "take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" (16 USC § 1532(3)(19)). The term "harm" is defined in regulations to include any act "which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." The term "harass" is also defined in regulations as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering" (50 CFR § 17.3).

1.2 Purpose and Need

The primary purpose of this HCP is to ensure compliance with the ESA and its implementing regulations by satisfying issuance criteria for the desired Permit, and contribute to the conservation of the GCWA. Pursuant to the ESA and Service regulations and guidance, this HCP describes the following:

- The amount of listed species habitat that may be directly and indirectly impacted by the Covered Activities;
- The amount of incidental take of the GCWA requested to be authorized by the requested Permit;
- The conservation measures that will be implemented to minimize and mitigate to the maximum extent practicable the impacts of the authorized taking of the GCWA;
- The measures that will be implemented to avoid and minimize potential impacts to the GCWA;
- The biological goals and objectives of the HCP;
- How the proposed elements of the HCP would be funded;
- Adaptive management measures and how the HCP would accommodate changed and unforeseen circumstances;

- Proposed monitoring programs;
- Public participation in development of the HCP; and
- Permit duration.

1.3 Permit Holder/Permit Duration

BCR will be the original Permit holder (i.e., permittee). If BCR transfers the portions of the Ranch subject to the Conservation Easements to the HOA, pursuant to 50 CFR § 13.25, the Service will amend the Permit to replace BCR with the HOA as the permittee, in which event the HOA will be solely responsible for permit implementation and compliance subsequent to such amendment (see Exhibit D for a description of HOA enforcement authority pursuant to the CC&R). Partners will not be listed on the permit, but may request certificates of inclusion in a form acceptable to BCR and the Service.

In order to allow for the substantial completion of the project, the desired term of this Permit is fifty (50) years. This term also accounts for the uncertainty of when the Partners will actually build on the Homesteads, if they ever choose to build. Pursuant to 50 CFR § 13.25, the individual Partners in the BCR owning the Homesteads covered by this HCP will be considered as parties authorized to carry out the activities covered by the Permit.

1.4 Permit Boundary/Covered lands

The BCR HCP boundary encompasses the Permit Area, which is made up of the covered Homesteads and zone of indirect effects. The Plan Area covers those portions of the Ranch that contain current and potential GCWA habitat, as depicted in Exhibit C.

1.5 Species to be Covered by Permit

The following species are referred to as "covered species" related to the Permit.

Covered Species	Federal Status/State Status
Golden-cheeked Warbler (*Setophaga chrysoparia*)	*Endangered/Endangered*

See Section 3.2 for information on the GCWA.

Section 2.
Project Description/Activities Covered by Permit

2.1 Project Description

The BCR project entails the development and phased construction of up to 48 Homesteads and associated infrastructure. Of the 48 Homesteads, 35 would be subject to the terms of the permit (see Exhibit C). The activities associated with site preparation include: 1) the clearing/removal of select trees within each building envelope and grading; and 2) the installation of underground utilities, water wells, and individual septic systems. The building envelopes are approximately 2 acres in size and allow for the construction of up to three structures (i.e., a house and no more than two out buildings (i.e., shed, shop, barn, garage, etc). The potentially affected area within each building envelope is not anticipated to be greater than one acre. In actuality, BCR does not expect the combined square footage of the house, garage/barn, porch and driveways on any Homestead to exceed 16,000 square feet (approximately 1/3rd of an acre) per Homestead and the DRG imposes a maximum square footage of 5,500 square feet of air conditioned space per building envelope. So while the actual potentially affected areas on each Homestead will each be substantially less than one acre, a conservative estimate (1 acre) will nevertheless show minimal potential impacts given the overall scale of the Ranch and GCWA habitat areas. Each structure must meet the strict DRG and CC&R requirements, which are implemented and enforced by the DRC and HOA. A summary of the DRG and CC&R requirements is included at Exhibit D.

2.2 Activities Covered by Permit

The covered activities in this HCP are intended to be as comprehensive as practicable and constitute the basis for determining the levels of take that will be authorized to occur over the life of the Permit.

Covered Activities include:

- Removal/Clearing of Trees and Vegetations
- Ground Disturbing Activities
- Construction
- Maintenance and Repair
- Homeowner Occupation and Activities
- Periodic Hand Clearing of Dead Trees for Fire Prevention Purposes

Section 3.
Environmental Setting/Biological Resources

3.1 Environmental Setting

3.1.1 Climate

Bosque County is hot in summer but cool in winter when an occasional surge of cold air causes a sharp drop in otherwise mild temperatures. Rainfall is uniformly distributed throughout the year reaching a slight peak in spring. Snowfalls are infrequent. Annual total precipitation is normally adequate for cotton, feed grains, and small grains (Soil Conservation Service 1980).

The area receives approximately 30 inches of rainfall annually but regularly experiences drought conditions. Of the total annual precipitation, 19 inches, or 60 percent, usually falls in April through September, which includes the growing season for most crops (Soil Conservation Service 1980).

3.1.2 Topography/Geology

The Ranch is located in central Texas and lies within the Edwards Plateau (Bureau of Economic Geology 1996). The Edwards Plateau is a region in central Texas defined by very thick, mostly flat layers of bedrock composed primarily of hard early Cretaceous limestone. The Edwards Plateau mostly lacks deep soils suitable for farming and primarily is associated with thin soils and rough terrain that is used for grazing. The elevation range on the Ranch is 680 feet above mean sea level (msl) to 903 feet msl (Exhibit E).

The Ranch is dominated by very shallow to deep, well drained soils that are underlain by limestone. Two general soil groups divide the Ranch: 1) Eckrant-Brackett-Cranfill and 2) Purves-Maloterre (USDA 1980). The Eckrant-Brackett-Cranfill soil group is located along the northern half of the Ranch. This group consists of gently sloping to steep soils located on plateaus and flat topped mesas and along drainage ways. This soil group typically consists of clayey and loamy soils that are cobbly or gravelly. The Purves-Maloterre soil group is located along the southern half of the Ranch. This group consists of gently sloping soils located on broad limestone ridges and slopes that have a benched or stair step appearance. This soil group typically consists of undulating clayey and loamy soils that are gravelly.

3.1.3 Hydrology/Streams, Rivers, Drainages

The Ranch is located within the Middle Brazos-Lake Whitney watershed (HUC 12060202). Cedron Creek flows just to the north of the Ranch. The majority of the property and its associated tributaries drain into Cedron Creek. Cedron Creek flows to the east into Lake Whitney. The Ranch is underlain by the Trinity Aquifer, which extends across much of central and northeastern Texas. It is composed of several smaller aquifers that include the Antlers, Glen Rose, Paluxy, Twin Mountains, Travis Peak, Hensell, and Hosston aquifers. These aquifers consist of limestones, sands, clays, gravels, and conglomerates. This aquifer is one of the most extensive and highly used groundwater resources in Texas. Its primary use is for municipalities and it also used for irrigation, livestock, and other domestic purposes.

3.1.4 Existing Land Use

The Ranch is currently used for limited grazing and recreational purposes, although livestock are not allowed in GCWA habitat between February and October. The Ranch was once part of a much larger ranch known as the Powell Ranch. The Powell Ranch and the other adjacent ranches are used primarily for agricultural and recreational purposes.

3.1.5 Vegetation Communities

The plant communities and ecological functions within the Ranch are primarily a factor of the edaphic/geology and position in the landscape. In addition to this, the secondary factors affecting the plant communities and ecological functions are the agricultural practices (both past and present) implemented on the Ranch. The Ranch is located in the Cross Timbers and Prairies Region of Texas. Approximately half of the ranch is open rangeland/grassland and the other half is comprised of moderately to densely covered juniper – oak woodlands.

Vegetation observed within the wooded areas of the ranch is characteristic of what would be found in most mature juniper–oak woodlands with a closed canopy. The dominant species found consisted of Ashe's juniper, Spanish oak (*Quercus buckleyi*), shin oak (*Quercus mohriana*), escarpment live oak (*Quercus fusiroms*), red bud (*Cercis canadensis*), Texas ash (*Fraxinus texensis*), cedar elm (*Ulmus crassifolia*), and elbowbush (*Foresteria pubescens*). Vegetation observed within the herbaceous layer included cedar sedge (*Carex planostachys*), Curlymesquite (*Hilaria swallenii*), seep muhly (*Muhlenbergia reverchonii*, shunkbush (*Rhus aromatica*), elbowbush (*Foresteria pubescens*), and Texas wintergrass

(*Stipa leucotricha*). Canopy cover for the woodland communities ranged from 70-90% canopy cover. There are numerous old-growth junipers and mature second-growth junipers in these woodlands.

Two additional plant communities which would be classified as GCWA supporting habitat occur on the Ranch but do not meet the Texas Parks and Wildlife Guidelines of prime habitat. One of these habitat types is made up of riparian bottomlands. Dominant tree species in these areas included cedar elm, Spanish oak, American elm, and pecan (*Carya illinoinesis*). These riparian areas are likely used as travel corridors, which allow GCWA's to move between patches of prime habitat. The other supporting habitat is made up of patches of juniper-dominated woodlands which connect or buffer GCWA habitat. These areas are dominated by second-growth Ashe's Juniper, with live oak and cedar elm being the most dominant deciduous trees. These patches of woodlands do not meet the deciduous diversity requirements needed to be considered prime GCWA habitat. However, because of their close proximity to higher quality habitat, it is likely they are used occasionally by GCWAs.

The grasslands located on the Ranch are dominated by early successional species. Natural succession was apparent in some areas as honey mesquite, western soapberry (*Sapindus saponaria*), and cedar elm shrubs were present in various densities. The herbaceous community includes little bluestem (*Schizachyrium scoparium*), silver bluestem (*Bothriochloa laguroides*), yellow Indiangrass (*Sorghastrum nutans*), buffalo grass (*Buckloe dactyloides*), Bermudagrass (*Cynodon dactylon*), Johnsongrass (*Sorghum halepense*), doveweed (*Croton monanthogynus*), meadow dropseed (*Sporobolus cryptandrus*), Texas wintergrass (*Stipa leucotricha*), and western ragweed (*Ambrosia psilostachya*). Herbaceous ground cover ranges from 60 to 90 percent across the majority of the Ranch.

3.1.6 Observed Wildlife

Numerous wildlife species inhabit the Ranch year-round while many others take refuge seasonally. Species observed on the Ranch include white-tailed deer (*Odocoileus virginianus)*, Rio Grande turkey (*Meleagris gallopavo*), Eastern Fox Squirrel (*Sciurus niger*), Eastern cottontail (*Sylvilagus floridanus*), bobcat (*Lynx rufus*), and feral hogs (*Sus scrofa*). Some of the bird species observed include: Northern Mocking Bird (*Mimus polyglottos*), Northern Cardinal (*Cardinalis cardinalis*), Eastern Bluebird (*Sialia sialis*), Scissor-tailed Flycatcher (*Tyrannus forficatusI*), American Robin (*Turdus migratoriusI*), Western Meadowlark (*Sturnella neglecta*), White-winged dove (*Zenaida asiatica*), Brown-headed

cowbird (*Molothrus ater*) Loggerhead Shrike (*Lanius ludovicianus*), Ruby-throated Hummingbird (*Archilochus colubris*), and the GCWA.

3.2 Covered Species

Golden-Cheeked Warbler (*Setophaga chrysoparia*)

GCWA presence-absence surveys have taken place at the ranch since 2010. Numerous GCWA encounters have been recorded as shown on Exhibit F.

Status: Endangered (55 FR 18844, 4 May 1990, emergency rule; 55 FR 53153, 27 December 1990, final rule) without critical habitat. The Service is currently in the process of undertaking a 5-year status review of the species and the Recovery Plan is in revision.

Description: The GCWA is a small (about 5 inches [13 centimeters] in length) insectivorous (feeding on insects) bird. The wings are black with two white wing bars and the cheeks are a bright golden-yellow with a black eye line. The underparts are white, streaked with black on the flanks. Adult males have black on the crown, nape, back, throat, and upper breast. Adult females are similar but duller in color; the crown and back are olive-green, with some black streaking (Farrand 1983, Oberholser 1974).

Habitat: From March to mid-summer, the GCWA inhabits juniper-oak woodlands in the Edwards Plateau, Lampasas Cut-Plain, and Llano Uplift regions of Texas. Ashe juniper and various oaks are the dominant tree species required for breeding habitat. The bark of mature Ashe junipers is essential for nest building, while deciduous trees, including Texas oak (*Quercus buckleyi*), Lacey oak (*Q. glaucoides*), live oak (*Q. fusiformis*), Texas ash (*Frazinus texensis*), cedar elm (*Ulmus crassifolia*), hackberry (*Celtis occidentalis*), bigtooth maple (*Acer grandidentatum*), sycamore (*Platanus occidentalis*), Arizona walnut (*Juglans major*), and pecan (*Carya illinoinensis*), are important for foraging. This habitat type is typically found in areas of steep slopes, canyon heads, draws, and adjacent ridge tops. Prime habitat consists of old growth juniper, oaks and other hardwoods, and a nearly closed canopy. Minimum patch size for successful reproduction ranges from 37 to 57 acres (15 to 23 hectares) (Arnold et al. 1996, Butcher 2008, Ladd 1985, Ladd and Gass 1999, Pulich 1976, USFWS 1992, Wahl et al. 1990).

Range: Of all the bird species known to occur in Texas, only the GCWA nests exclusively within the State's boundaries (Ladd and Gass 1999). The golden-cheeked warbler historically nested in 41 of Texas' 254 counties (Pulich 1976, USFWS 1996). Current confirmed breeding records exist from 28 Texas counties: Bandera, Bell, Bexar, Blanco, Bosque, Burnet, Comal, Coryell, Dallas, Edwards, Erath, Gillespie, Hays, Jack, Johnson, Kendall, Kerr, Kimble, Lampasas, Llano, Medina, Palo Pinto, Real, San Saba, Somervell, Travis, Uvalde, and Williamson (Ladd and Gass 1999, Lasley et al. 1997, Lockwood and Freeman 2004, USFWS 1996).

The GCWA migrates between its wintering grounds in southern Mexico and Central America to its breeding grounds in central Texas. During the winter, the species occurs in woodlands of mountainous areas of southern Mexico (Braun et al. 1986) and east central Guatemala through Honduras, Nicaragua, and possibly Belize (Pulich 1976, USFWS 1990).

Life History: Males arrive in central Texas around March 1st and begin to establish breeding territories, which they defend against other males by singing from visible perches within their territories. Females arrive a few days later, but are more difficult to detect in the dense woodland habitat (Pulich 1976). Nesting is typically completed by the end of July, and most golden-cheeked warblers have left central Texas by early to mid-August (Ladd and Gass 1999, Wahl et al. 1990).

Nests, composed of shredded, mature Ashe juniper bark bound with spider webs, are typically well camouflaged and located high in the nest tree, making them difficult to find. The female is thought to select the nesting site and build the nest. One clutch of three to four eggs is generally produced in April of each year. Additional nesting attempts are rare and occur only if the first clutch is lost to predation or parasitism. Incubation is typically 10 to 12 days. The young fledge after 9 to 12 days and are fed by both parents for another month after leaving the nest. The GCWA feeds on insects, spiders and other arthropods (Campbell 2003, City of Austin 2007, Holimon and Craft 2000, Jette et al. 1998, Ladd and Gass 1999, Peak 2007, Pulich 1976, USFWS 1992, Travis County 2007, Wahl et al. 1990).

Reasons for Decline: Most recent researchers have indicated that the population decline of the GCWA is a result of various factors related to destruction and fragmentation of quality habitat in the species' breeding and wintering ranges (Ladd and Gass 1999, USFWS 1992, 1995, Wahl et al. 1990). Among the major causes for the

decline in the amount of contiguous, suitable habitat are land clearing for agricultural use, land development (urban encroachment), and highway and reservoir construction (Oberholser 1974). Reduction in habitat quality can be traced to the suppression of natural fires in the Hill Country and overgrazing, which result in a reduction of hardwoods present in juniper-oak communities (Campbell 2003).

Habitat loss and fragmentation have also indirectly contributed to reduced survival in the species by increasing edge habitat, resulting in greater vulnerability to nest parasitism and predation. The brown headed cowbird (*Molothrus ater*), which is an edge species, will lay its eggs in golden-cheeked warbler nests, often after removing golden-cheeked warbler eggs from the nest. GCWAs will then either abandon the nest, sometimes to renest elsewhere, or will continue to brood and fledge cowbird young, thus reducing survival of their own offspring (Campbell 2003). Ratsnakes (*Pantherophis* spp.), feral cats and dogs, opossums (*Didelphis spp.*), raccoons (*Procyon lotor*), and other bird species are common predators of golden-cheeked warbler eggs. Other factors include loss of deciduous oaks, used for foraging, to oak wilt (*Ceratocystis fagacearum*), and predation and completion by the blue jay (*Cyanocitta cristata*) and other urban avian species (USFWS 1992).

Section 4.
Potential Biological Impacts/Take Assessment

4.1 Direct and Indirect Impacts

For the purpose of this HCP, while actual development is expected to be substantially less, it is assumed that the proposed development activities within the Permit Area will require the clearing and grading of the entire 1-acre potentially affected area for each of the 29 Homesteads located within or partially within GCWA habitat. The 26 Homesteads located entirely within GCWA habitat will result in 26 acres of direct impacts (on average, overall 1 acre of potential direct impact per Homestead). The 3 Homesteads that are located partially within the GCWA habitat will result in approximately 2.21 acres of direct impacts. The building envelopes for the remaining 6 Homesteads are located outside of, but adjacent to GCWA habitat and therefore, no direct impacts are anticipated for these Homesteads. Therefore, the anticipated total direct impact to GCWA habitat is 28.21 acres (see Exhibit C). Impacts include the removal of vegetation, grading of proposed house and out-building footprints and driveways, installation of a septic system, and installation of underground utilities. Per the DRG, which are enforced by the DRC and HOA and drafted with an intent to avoid and minimize GCWA impacts, in areas of mature juniper forests (as determined by the DRC and the most recent GCWA habitat assessment), clearing of sites for construction can only occur during the period beginning September 1 of each year and ending on March 15 of the following year (i.e., outside the breeding and nesting seasons). The DRGs also require outdoor construction activities to "be very limited during the period of March 15 to April 30 of each year." Also, during the period of April 30 to September 1 of each year, limited construction activities (but not clearing of the Ranch Homestead) are permitted. The remaining acreage of each Homestead will remain in a natural state and will be subject to the limitations set forth in the DRG. All construction plans must be reviewed and approved by the DRC before construction can commence. See Exhibit D for a summary of relevant DRG and CC&R provisions.

Using the Service standard of a 300 foot zone of indirect effects from cleared habitat, up to 293.63 acres of indirect take (primarily by harassment and degradation of habitat by fragmentation) is expected to occur in areas between and around Homesteads (see Exhibit C). Degradation of surrounding habitat is expected to result in decreased use of the area for breeding, feeding, and sheltering and may reduce reproductive output, although complete abandonment may not occur. Although lethal take by cat depredation and window strikes may occur, it is adequately covered by the calculated indirect loss of habitat in surrounding areas (up to 293.63 acres). In addition, since BCR Homesteads are predominately used for vacation

homes, most of the homes will be occupied only for a fraction of any given year. Unlike regular developments, since the Partners have no obligation to build and may build at their leisure (within the confines of the CC&R and DRG), few homes will be constructed in any given year, if in fact the Partners exercise their right to build at all.

4.2 Anticipated Incidental Take of the Golden-cheeked Warbler

Proposed incidental take levels can be determined in two ways. The first of which would be to quantify the number of animals to be "killed, harmed, or harassed" if those numbers are known or can be determined. The second method would be to determine the potential impacts in terms of habitat acres or square footage that would likely be affected by a proposed activity.

BCR has elected to determine the impacts based on loss of GCWA habitat as a proxy for non-lethal impacts to individuals because all of the potential impacts are expected to be in the form of harm and harassment resulting from direct loss of GCWA habitat and potential indirect effects of the improvements from their use and occupation. In other words, the only expected incidental take of GCWAs is the possibility that the Covered Activities will result in the elimination or degradation of GCWA habitat in such a way as to significantly impair the ability of unidentified GCWAs individuals to breed, feed, and seek shelter in the future. Using habitat as a proxy for take of individual GCWAs as well as for designing mitigation measures is consistent with longstanding Service practice. Indeed, this approach has been utilized in *all* incidental take permits and ESA Section 7 consultations the agency has issued and conducted with respect to the GCWA.

The proposed impacts have been calculated based on the assumption that each Homestead will be completely developed to the maximum extent permitted and allowable under the DRG. However, it is unlikely that every Partner will actually build on their Homestead. Some may choose simply to enjoy their joint partnership of this exceptional property. Even if Partners elect to construct a dwelling, the chances of many of them constructing dwellings that approach the maximum allowable square footage of air conditioned space (i.e., 5,500 sf) is also unlikely, as most of these parcels have been purchased with the intent of being vacation or weekend homes.

While the potentially affected areas within each building envelopes are typically 1-acre in size, three of the 1-acre envelopes are located on the edge of GCWA habitat and only impact a portion of the GCWA habitat. Therefore, the impacts associated with these potentially affected areas were calculated based on the actual impact of the footprint of the potentially affected

area within habitat. The anticipated incidental take from direct impacts of the Covered Activities in the Permit Area total 28.21 acres (see Exhibit C). While it is highly unlikely that each Homestead will utilize its entire potentially affected area, incidental take has been calculated at the maximum amount anticipated and assumes that each potentially affected area will be fully utilized. Up to 293.63 acres of incidental take from indirect impacts are expected to occur in areas between and around Homesteads (see Exhibit C).

4.3 Anticipated Impacts on Plant Species

According to both Service and TPWD databases, there are no rare, threatened, and endangered plant species listed for Bosque County.

4.4 Effects on Critical Habitat (if applicable)

The Service has not designated critical habitat for the GCWA. Therefore, there will be no effects on GCWA critical habitat. Pursuant to the Service's Environmental Conservation Online System, no critical habitat exists for any listed species on or adjacent to the Ranch.

4.5 Cumulative Impacts

The BCR project entails the development of 35 Homesteads: 26 Homesteads that are located entirely within GCWA habitat, three Homesteads that are partially located within GCWA habitat, and six additional Homesteads that are located outside of, but adjacent to GCWA habitat (see Exhibit C). These Homesteads are located in a rural setting with very little development. Although the Homesteads are primarily for weekend and vacation purposes, the project will result in a moderate increase in the level of residential occupation and use. The primary environmental impact of the proposed project will be the destruction of GCWA habitat in areas that were identified as containing nesting habitat. Considered alone or together with potential future projects that might take place on adjacent ranches, the BCR development is expected to result in negligible cumulative environmental effects.

4.6 Anticipated Impacts of the Potential Taking

It is anticipated that potential take of GCWA resulting from the Covered Activities will have negligible effects on the overall survival and recovery of the species. No GCWAs are expected to be taken during construction because per the DRGs, clearing will occur off-season (September 1 through March 15), outdoor construction activities will be very limited from March 15 through September 1, and the impacts associated with clearing vegetation to allow

for construction of the proposed development are expected to be much lower than the total impacts for which the BCR will mitigate, which is the maximum amount allowed under this HCP (see Exhibit D). For these reasons, the level of take of the GCWA that would result from the proposed development is considered negligible and includes impacts up to approximately 28.21 acres of GCWA habitat (and likely less, as previously described) at scattered locations across the 3,745 acre Ranch and up to 293.63 acres of indirect impacts are expected to occur in areas between and around Homesteads (see Exhibit C). Furthermore, the Conservation Easements, which the Service should consider to be prior beneficial actions, cover 3,500 acres of the Ranch and have the effect of compensating in significant excess of the typical GCWA mitigation ratios of 2:1 for direct impacts and .5:1 for indirect impacts.

Section 5.
Conservation Program/Measures to Minimize and Mitigate for Impacts

5.1 Biological Goals

As part of the "Five Point" Policy adopted by the Services in 2000, HCPs must establish biological goals and objectives (65 FR 35242, June 1, 2000). The purpose of the biological goals is to ensure that the operating conservation program in the HCP is consistent with the conservation and recovery goals established for the species. The goals are also intended to provide to the applicant an understanding of why these actions are necessary. These goals are developed based upon the species' biology, threats to the species, the potential effects of the Covered Activities, and the scope of the HCP.

The biological goals for the BCR HCP are as follows:

1. Minimize, to the extent practicable, the taking of the GCWA resulting from the impacts associated with the proposed development.

2. Implement management actions specific to the GCWA and its habitat on approximately 924.35 acres of GCWA breeding habitat within the Conservation Easements, and through passive management, foster the development of approximately 227.6 acres of GCWA supporting habitat (young oak-juniper forest/shrubland) until it becomes occupied breeding habitat.

5.2 Biological Objectives

The biological objectives for the BCR HCP are:

1. Implement all take minimization measures outlined in the DRG and CC&R during site preparation and construction activities.

2. Place the HCP Restrictive Covenants on portions of the Ranch covered by the Conservation Easements to include terms aimed at GCWA conservation and habitat management.

3. Continue the existing program to raise awareness about the GCWA and its habitat on the entire Ranch, including the already-existing Conservation Easements for contractors/construction personnel and Partners through a combination of information sharing, worker training, and signage to promote onsite GCWA conservation and Partner support for GCWA conservation in general.

4. Through passive management, foster the development of 227.6 acres of supporting GCWA habitat into breeding habitat.

5.3 Avoidance, Minimization, and Mitigation Measures

Under Section 10(a)(2)(A) of the ESA and the ESA implementing regulations (50 CFR §§ 17.22(b)(1), 17.32(b)(1), and 222.22), an HCP must detail "what steps the applicant will take to minimize and mitigate to the maximum extent practicable the impacts of the taking of any federally listed animal species as a result of activities addressed by the plan." Even though there are no specific rules or regulations for developing a mitigation and monitoring plan, the HCP Handbook provides the following guidance:

1. Avoiding the impacts to the extent practicable
2. Minimizing the impact
3. Rectifying the impact
4. Reducing or eliminating the impact over time
5. Compensating for the impact

BCR's conservation strategies involve conservation of GCWA habitat through the on-site Conservation Easements. The Conservation Easements permanently conserve 3,500 acres of the Ranch, including 924.35 acres of GCWA habitat and 227.6 acres of GCWA supporting habitat (young oak-juniper forest/shrubland) (see Exhibit B). The Service should consider these prior beneficial actions because BCR has voluntarily made conservation of the GCWA a priority and is a model of development within GCWA habitat, which is in line with Service policy. Service policy also encourages voluntary conservation of endangered species and their habitat, and the Conservation Easements are an excellent example of such voluntary conservation.[2]

[2] *See* U.S. Fish and Wildlife Service, Endangered and Threatened Wildlife and Plants; Expanding Incentives for Voluntary Conservation Actions Under the Endangered Species Act, 77 FR 15352 (March 15, 2012) (requesting public comment to "help us identify potential changes to our regulations that would create incentives for landowners and others to take voluntary conservation actions.").

Furthermore, while the proposed Covered Activities may create patches of habitat, there will be a substantial amount of habitat left intact on each Homestead that will be surrounded by areas covered by the Conservation Easements and conserved in perpetuity. The Conservation Easements also have the effect of compensating in significant excess of the typical GCWA mitigation ratios of 2:1 for direct impacts and .5:1 for indirect impacts.

As an additional conservation measure under this HCP, BCR proposes to place the HCP Restrictive Covenants on the portions of the Ranch covered by the Conservation Easements, which specifically address the GCWA and its habitat. A conservation easement is "a deed or similar instrument conveyed by the owner of land to the holder of the easement that restricts the development and use of the land to achieve certain conservation objectives, such as the preservation of open space, wildlife habitat, agricultural land, or a historic site."[3] A restrictive covenant, which would be used in combination with the Conservation Easements already in place, is "a private agreement, usually in a deed or lease, that restricts the use or occupancy of real property, especially by specifying lot sizes, building lines, architectural styles, and the uses to which the property may be put."[4] Restrictive covenants run with the land and any person entitled to benefit under a restrictive covenant is entitled to enforce it.[5] In the event the GCWA is delisted pursuant to the ESA, the HCP and HCP Restrictive Covenants shall continue in perpetuity, unless the Service approves otherwise through a Permit amendment.

Here, the Service will be listed as a third party beneficiary of the HCP Restrictive Covenants. The HCP Restrictive Covenants will become perpetual obligations that run with the land and will provide the Partners, the HOA, BCR, and the Service each with enforcement rights. BCR will provide the Service with a copy of the HCP Restrictive Covenants recorded in the real property records of Bosque County, Texas as part of the implementation of the HCP. The HCP Restrictive Covenants will include the following terms aimed at GCWA conservation and habitat management, which derive from other recent Service-approved HCPs for the GCWA:

- Right of ingress, egress, and access given to the Service for compliance monitoring, subject to reasonable prior notice (i.e., 3-day notice).

[3] Nancy McLaughlin, *Conservation Easements: Federal Tax Incentives and the Meaning of Perpetuity*, American Law Institute – American Bar Association Continuing Legal Education, SR013ALI-ABA 345 at 351 (2009).

[4] Texas Practice Series TM, Land Titles and Title Examination, *Restrictive Covenants in Texas Lands*, § 3B.1 (updated June 2013).

[5] *Id.* at 3b.3, 3b27.

- No hunting in GCWA habitat areas during the GCWA breeding season (March 1 – September 30).
- Recreational activities within GCWA habitat limited to existing cleared ranch roads and established trails during the GCWA breeding season (March 1 – September 30) and in groups of no more than 10.
- BCR will perform a GCWA presence/absence survey once every three years, beginning in the breeding season immediately following permit issuance and continuing in perpetuity. Areas to be surveyed include all GCWA habitat within the easements. When GCWA supporting habitat attains a maturity to be suitable for GCWA nesting, it should also be surveyed for GCWA occupation every three years. If after 19 years, survey data is reasonably consistent or shows an increase in GCWA population numbers, a GCWA presence/absence survey will be performed once every five years in perpetuity. See the adaptive management section for additional details.
- BCR will monitor for signs of trespass and erect appropriate signage to discourage trespass if it is occurring. Existing cross fencing is effective in keeping cattle out of GCWA habitat during the GCWA nesting season and will be regularly maintained.
- White-tailed deer, goat, sheep, and exotic ungulates will be managed to minimize grazing and browsing pressure. Goats and sheep are not permitted within GCWA habitat. The goal for exotic ungulate management is complete eradication from GCWA habitat, although if not possible exotic ungulate abundance should not exceed one animal per 100 acres of GCWA habitat. The HCP will detail deer and exotic ungulate survey techniques and the method proposed to monitor browsing pressure (at least once every five years). If browsing pressure from deer or other ungulates is determined to negatively affect GCWA habitat, additional hunting pressure will be implemented. Deer feeding will not occur from February 1 through September 31 within GCWA habitat.
- Feral hogs will be controlled year-round using traps and hunting with the goal of minimizing destructive browsing.
- Cowbird trapping will be conducted between March 1 and May 31 following TPWD guidelines during the first full year after permit issuance. BCR and the Service will review the results to determine whether cowbird trapping needs to be conducted in subsequent years. See the adaptive management section for additional details.
- Vegetation monitoring to determine species composition, canopy cover, and monitoring for the spread of oak wilt will be conducted once every five years.

BCR also proposes to amend the DRGs to include the following requirement on all Homesteads:

- BCR will encourage Partners to aggressively control fire ants within their Homestead at least annually.

5.3.1 Measures to Avoid and Minimize Impacts

As mentioned previously, the DRG and CC&R, which are enforced by the DRC and HOA, include many provisions that were designed to avoid and minimize impacts to the GCWA and its habitat (see Exhibit D). In areas of mature juniper forests (as determined by the DRC and the most recent GCWA habitat assessment), clearing of sites outside of the Conservation Easement for construction can only take place during the period beginning September 1 of each year and ending on March 15 of the following year. Outdoor construction activities are required by the DRG to be very limited during the period of March 15 to April 30 of each year. Also, during the period of April 30 to September 1 of each year, limited construction activities (but not clearing of the Ranch Homestead) are permitted. Other DRG measures include: restricting construction of structures within 20 feet of the drip line of specimen trees (a landscaping term of art loosely defined as large, desirable trees), or double the size of the drip line, whichever is greater; restricting parking and placement of construction equipment and materials to the construction area; and protection of specimen trees. The CC&R also require that no trees with a caliper in excess of two inches on any Homestead shall be removed, trimmed, or modified without the prior written consent of the DRC. Outside of the building envelope, no trees or shrubs of any kind shall be cut, trimmed, or removed without the prior written consent of the DRC. Furthermore, by a letter emailed to all Partners each year, which is enforced by the DRC, HOA, and Ranch Manager, BCR requires that loud and disruptive sounds are not allowed from sunrise until four hours after sunrise (approximately 7 am to 11 am) from March 15 to May 15.

5.3.2 Measures to Mitigate Unavoidable Impacts

As explained in Section 5.3, BCR proposes to place the HCP Restrictive Covenants on the portions of the Ranch covered by the Conservation Easements, which specifically address the GCWA and its habitat. The Conservation Easements already permanently preserve 3,500 acres on the Ranch, including 924.35 acres of GCWA habitat and 227.6 acres of GCWA supporting habitat (young oak-juniper forest/shrubland) (see Exhibit B).

Table 5-1. Summary of minimization and mitigation measures and corresponding biological goals and objectives based on the level of impacts resulting from Covered Activities.

Covered Activity	Species Affected	Type of Impact	Quantity of Impact	Avoidance, Minimization, & Mitigation Measures	Biological Goals and Objectives met
Direct and indirect Impacts to GCWA Habitat (Covered Activities)	GCWA	Removal of Habitat	Up to 28.21 acres of direct effects Up to 293.63 acres of indirect effects	HCP and HCP Restrictive Covenants	1 and 2

5.4 Monitoring

The proposed monitoring measures that will be implemented in the Permit Area include DRG compliance monitoring, GCWA presence-absence surveys conducted by a biologist with an ESA 10(a)(1)(A) permit for the GCWA, deer and exotic ungulate surveys, vegetation monitoring, and monitoring for the spread of oak wilt. The DRG compliance monitoring will be conducted by the DRC in accordance with the DRG. The presence-absence surveys would be conducted within the habitat areas covered by the Conservation Easements following the Service's GCWA survey protocol beginning with the first full season after Permit issuance and then according to the monitoring plan outlined in the adaptive management section.

The deer and exotic ungulate surveys will be conducted as suggested by the National Resource Conservation Service of Bosque County, which is similar to the Texas Parks and Wildlife method. Generally, there will be 2 surveys done, beginning September 1 through the end of October. Each survey will be done at night usually an hour after dark and will take a predetermined route, which will be repeated through the Ranch. BCR will utilize 3 surveyors: a driver, two spotters with lights on either side of the vehicle, one of which will also act as a counter. The surveyors will count any deer seen along the route and record whether they are a buck, doe, fawn, or unknown. The route is usually traveled at a speed of 5 mph with the duration contingent upon various factors.

Vegetation monitoring and oak wilt monitoring will be conducted every five years. Random line transects will be set up in areas designated as GCWA habitat as well as areas considered to be supporting GCWA habitat. A point intercept method will be used to document woody species

composition, ground cover, and the percent canopy intercept by woody species in two height classes (0-3 m and >3 m). The line transects will be 10 meters in length and recordings of canopy intercept will take place at 2.5 m, 5 m, and 7.5 m. A visual assessment method will also be used to monitor browsing impacts/conditions. Any incident of oak wilt will be noted and recorded with a gps.

Cowbird trapping will be implemented according to the plan outlined in the adaptive management section. Trapping will adhere to TPWD guidelines and only take place from March 1 to May 31. Traps should be located in an accessible location that is preferably in proximity to grazing operations, or in open pasture away from brush. Traps will be equipped with water, a limb for perching, and some form of shade. An attractant (i.e., grain sorghum, bird seed, etc) will also be used to entice birds to enter the trap. Traps will be checked daily (when active) and any non-target species will be released immediately. All euthanization practices will adhere to TPWD guidelines.

A report will be submitted to the Service documenting the monitoring results every year that surveys are performed. A more detailed description of the content of the report is provided in Section 5.7.

5.5 Adaptive Management Strategy

According to Service policy (see 65 FR 35242), adaptive management is defined as a formal, structured approach to dealing with uncertainty in natural resources management, using the experience of management and the results of research as an ongoing feedback loop for continuous improvement. Adaptive approaches to management recognize that the answers to all management questions are not known and that the information necessary to formulate answers is often unavailable. Adaptive management also includes, by definition, a commitment to change management practices when determined appropriate.

To produce an efficient and effective management process, BCR will review the annual report and, in coordination with the Service, recommend specific changes in management directions. Issues BCR may address include thoroughness of the annual report and implications of the monitoring efforts relating to the need for management changes. If a determination is made by BCR that the biological goals or objectives are not being met, or management and/or monitoring activity is determined to be ineffective in conserving endangered species, then adjustments to the management program may be warranted. The annual report submitted to the Service will directly address the adaptive management issue, and a statement will be made

that management should or should not change. Based on research and monitoring findings, BCR, in coordination with the Service, may recommend that the specific management or monitoring actions be changed. In addition to other potential adaptive management strategies, two plans are specifically developed for species monitoring and cowbird trapping below.

5.5.1 GCWA Monitoring

Due to the expected low impact to existing GCWAs and their habitat, GCWA monitoring every three years in perpetuity, as suggested by the Service's draft GCWA mitigation land guidance, may not be appropriate. Therefore, in conjunction with the Service's Arlington, Texas Ecological Services Field Office the following adaptive GCWA monitoring plan is proposed. GCWA presence/absence surveys will be conducted in a manner to cover all GCWA nesting habitat present within the Conservation Easements to determine the estimated number of territorial males (or breeding pairs) on the property. The first survey will be conducted the first breeding season following Permit issuance. GCWA monitoring surveys will then be conducted every three years until the nineteenth year of the permit (years 1, 4, 7, 10, 13, 16, 19). After the seventh survey (on year 19 of the permit) the survey data will be assessed to determine if it is appropriate to begin conducting GCWA monitoring surveys every five years. If the estimated number of breeding pairs has remained stable or are increasing surveys may begin being conducted every fifth year. If the estimated number of breeding pairs appears to be in decline (the last three or more consecutive surveys indicate a downward trend), surveys should continue to be (or revert back to being) conducted every three years and the Service's Arlington ESFO will be contacted. Arlington ESFO staff may choose to maintain the three year survey schedule (in writing) if it is deemed appropriate given a lack of severity in the downtrend or a current population estimates. Arlington ESFO staff and BCR personnel may mutually develop a plan to improve GCWA presence if appropriate and feasible.

5.5.2 Cowbird Trapping

Due to the expected low impact to existing GCWAs and their habitat, and the expected low-density use of the BCR for cattle grazing, it may not be appropriate to conduct brown-headed cowbird (BHCO) trapping every year as suggested by the Service's draft GCWA mitigation land guidance. Therefore, in conjunction with the Arlington ESFO, the following cowbird trapping strategy has been developed. The first year after Permit issuance a single cowbird trap will be appropriately placed on the property from March 1st through May 31st. If fewer than 50 BHCOs are captured during that time, a single BHCO trap should be

implemented once every fifth year. If 25 or fewer BHCO are captured within a single trap within two successive trapping seasons, trapping events may be discontinued assuming the number of cattle on the property and adjacent properties remain constant. If a significant increase in cattle grazing on or adjacent to the Ranch has occurred, trapping should resume to determine if BHCO occupancy has increased. If greater than 50 BHCO are caught in a single trap (over the trapping season), an addition trap should be constructed and trapping should be implemented every three years. If more than 50 BHCOs are caught in each trap, an additional trap should be constructed for each successive trapping season until less than 50 are caught per trap. If at any time the number of BHCO drops below 50 per trap in two consecutive trapping seasons, the number of traps may be reduced by one. If the number of traps is reduced back to one trap per season by this methodology the trapping cycle will reset to every fifth year and begin anew. Any deviation from this adaptive management strategy will be coordinated with the Arlington ESFO.

5.6 Reporting

Annual reports to the Service will include:

1. Brief summary or list of Covered Activities accomplished during the reporting year
2. Project impacts (e.g., number of acres graded, number of buildings constructed, etc.)
3. Monitoring results (compliance and effectiveness monitoring) and survey information (if applicable)
4. Description of circumstances that made adaptive management necessary and how it was implemented. Description of any changed or unforeseen circumstances that occurred and how they were dealt with
5. Description of any minor or major amendments

Section 6.
Plan Implementation

6.1 Changed Circumstances

Section 10 regulations [(69 FR 71723, December 10, 2004 as codified in 50 CFR Sections 17.22(b)(2) and 17.32(b)(2))] require that an HCP specify the procedures to be used for dealing with changed and unforeseen circumstances that may arise during the implementation of the HCP. In addition, the HCP No Surprises Rule (50 CFR § 17.22 (b)(5) and 17.32 (b)(5)) describes the obligations of the permittee and the Service. The purpose of the No Surprises Rule is to provide assurance to the non-Federal landowners participating in habitat conservation planning under the ESA that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

Changed circumstances are defined in 50 CFR § 17.3 as changes in circumstances affecting a species or geographic area covered by an HCP that can reasonably be anticipated by plan developers and the Service and for which contingency plans can be prepared (e.g., the new listing of species, a fire, or other natural catastrophic event in areas prone to such event). If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances and these additional measures were already provided for in the plan's operating conservation program (e.g., the conservation management activities or mitigation measures expressly agreed to in the HCP), then the permittee will implement those measures as specified in the plan. However, if additional conservation, management and mitigation measures are deemed necessary to respond to changed circumstances and such measures were not provided for in the plan's operating conservation program, the Service cannot require these additional measures absent the consent of the permittee, provided that the HCP is being "properly implemented" (properly implemented means the commitments and the provisions of the HCP have been or are fully implemented). Adaptive changes to address changed circumstances must be economically reasonable and feasible within the context of the HOA regime and must be accomplished within the projected budget.

6.1.1 Summary of Circumstances

Wildfire is a reasonably foreseeable circumstance that could affect the GCWA on the Ranch. In the event of a wildfire at the Ranch, portions of the GCWA habitat could be affected. The range of effects of the fire could be minimal if the fire is a relatively "cool" fire that creeps along the ground and burns mainly groundcover (grasses, other low-growing vegetation, and downed trees). However, if the fire burns everything, including the large, older trees, the effects on the burned habitat could be significant. In either event, habitat protections would remain in place (as long as the GCWA is federally protected) and efforts could be undertaken to ensure that natural succession trends toward eventual reestablishment of GCWA habitat (e.g., continued protection of the areas covered by the Conservation Easements). In the short-term, it would be reasonable to expect that other nearby GCWA habitat, both on the Ranch and off the Ranch, will remain intact and unburned. It is assumed that GCWAs would utilize these nearby unburned habitats until the habitat on the Ranch reestablishes as viable GCWA nesting habitat, which depending on the severity of the event may be as brief as a year or as long as several decades. If greater than 100 acres of GCWA habitat is affected by wildfire on the Ranch, BCR will notify the Service within 30 days and discuss possible management changes focused on regenerating suitable GCWA habitat.

If other catastrophic events such as tornadoes, floods, prolonged periods of severe drought, and similar events remove greater than 100 acres of GCWA habitat, BCR will notify the Service within 30 days and discuss possible management changes focused on regenerating suitable GCWA habitat.

It is possible that large scale changes to vegetation communities or species distributions due to global climate change could cause the permanent loss of habitat for the GCWA on the Ranch. Unlike habitat lost due to reasonably foreseeable catastrophic events, it is possible that global climate change could irreparably change the vegetative conditions of the Ranch and prevent the regeneration of suitable habitat for the GCWA. There is currently insufficient knowledge upon which to base a projection of the potential for the Ranch to increase or decrease in value to the GCWA over the next 50 years as a result of climate change. Nor is there sufficient knowledge at present upon which to design alternative or additional mitigation measures that would compensate for any adverse effects of climate change on GCWA habitat at the Ranch. Accordingly, if global climate change causes the Ranch to incrase or decrease significantly in relative value with regard to the continued survival of the GCWA, BCR will consult with the Service to determine whether any changes in management practices are appropriate to respond to the effects of climate change.

However, any changes to the management program agreed to be appropriate for addressing the impacts of climate change will not require the acquisition or management of additional land.

The goal of the ESA is to conserve endangered and threatened species to ensure their long-term survival in the wild. At that point species are "recovered" and protection of the ESA is no longer necessary. Conservation programs like the HCP may contribute to the recovery to the GCWA. If the GCWA becomes delisted due to recovery, BCR may discuss with the Service any potential changes or amendments to the HCP or Permit conditions that may be appropriate under this changed circumstance.

6.2 Unforeseen Circumstances

Unforeseen circumstances are defined in 50 CFR § 17.3 as changes in circumstances that affect a species or geographic area covered by the HCP that could not reasonably be anticipated by plan developers and the Service at the time of the HCP's negotiation and development and that result in a substantial and adverse change in status of the covered species. The purpose of the No Surprises Rule is to provide assurances to non-Federal landowners participating in habitat conservation planning under the ESA that no additional land restrictions or financial compensation will be required for species adequately covered by a properly implemented HCP, in light of unforeseen circumstances, without the consent of the permittee.

In case of an unforeseen event, the permittee shall immediately notify the Service staff that has functioned as the principal contacts for the proposed action. In determining whether such an event constitutes an unforeseen circumstance, the Service shall consider, but not be limited to, the following factors: size of the current range of the affected species; percentage of range adversely affected by the HCP; percentage of range conserved by the HCP; ecological significance of that portion of the range affected by the HCP; level of knowledge about the affected species and the degree of specificity of the species' conservation program under the HCP; and whether failure to adopt additional conservation measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild.

If the Service determines that additional conservation and mitigation measures are necessary to respond to the unforeseen circumstances where the HCP is being properly implemented, the additional measures required of the permittee must be as close as possible to the terms of the original HCP and must be limited to modifications within any conserved habitat area or to

adjustments within lands or waters that already set-aside in the HCP's operating conservation program. Additional conservation and mitigation measures shall involve the commitment of additional land or financial compensation or restrictions on the use of land or other natural resources otherwise available for development or use under original terms of the HCP only with the consent of the permittee.

6.3 Amendments

6.3.1 Minor Amendments

Minor amendments are changes that do not affect the scope of the HCP's impact and conservation strategy, change amount of take, add new species, and change significantly the boundaries of the HCP. Examples of minor amendments include correction of spelling errors or minor corrections in boundary descriptions. The minor amendment process is accomplished through an exchange of letters between the permit holder and the Service's Field Office.

6.3.2 Major Amendments

Major amendments to the HCP and permit are changes that do affect the scope of the HCP and conservation strategy, increase the amount of take, add new species, and change significantly the boundaries of the HCP. Major amendments often require amendments to the Service's decision documents, including the NEPA document, the biological opinion, and findings and recommendations document. Major amendments may require additional public review and comment.

Section 7.
Funding

7.1 Costs of HCP Implementation

The costs to implement the HCP are relatively low given that BCR already owns the land that is being conserved and already has a professional ranch management staff on duty to implement the HCP.

The table below lists approximate costs associated with implementing this HCP.

Table 7-1. Approximate costs of implementing the HCP.

Item/Activity	Frequency	Unit Cost	Total
Conservation Strategy			
Development of Design Rules and Guidelines (DRG)		$0*	$0*
Development of GCWA brochure	Once	$1,500	$1,500
Creation and installation of signage	Once	$1,000	$1,000
		Subtotal	**$2,500**
Monitoring			
Compliance Monitoring[8]	Annually for 50 years	$100	$5,000
Compliance Reporting	Annually for 50 years	$100	$5,000
Deer/Ungulate Surveys	Annually for 50 years	$250	$12,500
GCWA Presence-Absence Surveys[9]	Every 3 years in perpetuity	$4,000	$64,000
Vegetation Monitoring & Oak Wilt Monitoring[10]	Every 5 years in perpetuity	$2,500	$25,000
Cow Bird Trapping[11]	As needed (Assumed every 5 years for 50 years)	$3,000	$30,000
		Subtotal	**$141,500**
		GRAND TOTAL	**$144,000**

*Item already completed – no cost associated with this item

[8]Compliance monitoring would be conducted annually during the Permit term.

[9]Presence-absence surveys for the GCWA would be conducted every three years starting with the first full breeding season after Permit issuance for the first 19 years. If after 19 years, survey data is reasonably consistent or shows an increase in GCWA population numbers, a GCWA presence/absence survey will be performed once every five years in perpetuity.

[10]Vegetation monitoring and oak wilt monitoring would be conducted every five years after Permit issuance.

[11]Cowbird trapping will be conducted following TPWD guidelines during the first full year after permit issuance. BCR and the Service will review the results to determine whether cowbird trapping needs to be conducted in subsequent years.

7.2 Funding Source(s)

The sources of the funds to implement the HCP are the dues required to be paid by each Partner under the CC&R (see Exhibit D). Dues are collected and enforced by the HOA, and secured by lien rights against the Homesteads under the CCRs. Each year the HOA will include

costs to implement the HCP for the ensuing year in its annual budget and lot assessments will be established based on that budget. To the extent the budgeted amounts are exceeded, the HOA shall be required to levy special assessments to cover such excess, provided, however, that in no event shall the HOA be required to expend or levy assessments for an amount greater than 20% in excess of the current year's budget or the prior year's actual expenditure for implementation of the HCP. All records maintained by the HOA relating to performance of operation, maintenance, and monitoring pursuant to this HCP shall be maintained by the HOA and be made available to the Service for its review at any time upon request. The HOA may elect to operate on a 3 to 5-year budget cycle in order to smooth the amount charged for dues over a longer period of time.

Section 8.
Alternatives Considered

8.1 No Action Alternative

The no action alternative means that a Permit would not be issued. The project would likely move forward without a Permit and accept the potential risks associated with that action. This alternative was not chosen as it would not allow the Partners to voluntarily obtain the assurances offered by a permit.

8.2 Various Denser Land Plans

BCR considered a number of more dense land plans for the Ranch, ranging from traditional development to low density development, albeit somewhat more dense than the preferred alternative. Among these alternatives was a layout with 281 five-acre parcels. For the purposes of this HCP, this 281-lot layout is referred to as the Original Land Plan (Exhibit G).

Although this Original Land Plan layout would have resulted in a very profitable project, the proponents ultimately decided upon an even lower density alternative that left substantially all of the Ranch available for permanent preservation.

8.3 Proposed Conservation Development– 48 Homesteads (Proposed Alternative)

The proposed alternative has been discussed in detail in previous sections. It includes 48 Homesteads that are approximately 5 acres in size each, and one approximately 5-acre parcel used for common improvements (see Exhibit B). The Permit Area would include 35 Homesteads and result in a total impact of up to 28.21 acres of GCWA habitat (see Exhibit C). Under this land plan, the bulk of development would be along three ridges in the northeast corner of the Ranch.

8.4 Sale of the Ranch

BCR considered selling the entire Ranch without the Conservation Easements or other restrictions, but ultimately decided to pursue a conservation development.

Section 9.
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EXHIBIT A

GRAPHIC SCALE

0 10,000 Feet

1 inch = 10,000 feet

Bosque Canyon Ranch

Local Area Exhibit

Bosque County, Texas

Source: ESRI (2010)

Prepared For:

Sedgwick LLP

919 Congress Ave., Ste. 1250
Austin, TX 78701

Date: January 2013

Prepared By:

PELOTON LAND SOLUTIONS

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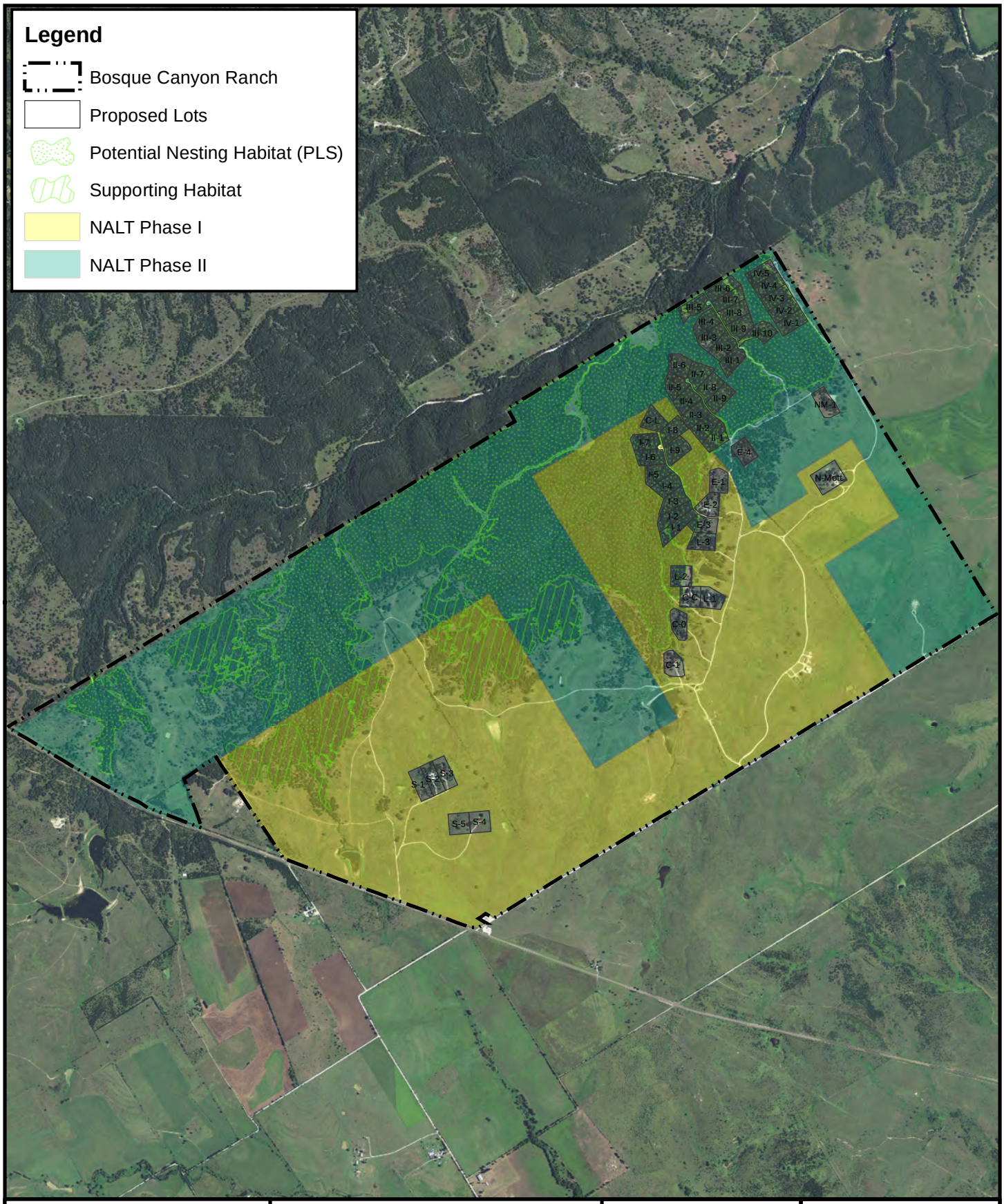

EXHIBIT B

GRAPHIC SCALE

N W E S

0 3,000 Feet

1 inch = 3,000 feet

Bosque Canyon Ranch

NALT Conservation Easements and Potential GCWA Habitat

Bosque County, Texas

Source: TNRIS (2010)

Prepared For:

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Date: January 2013

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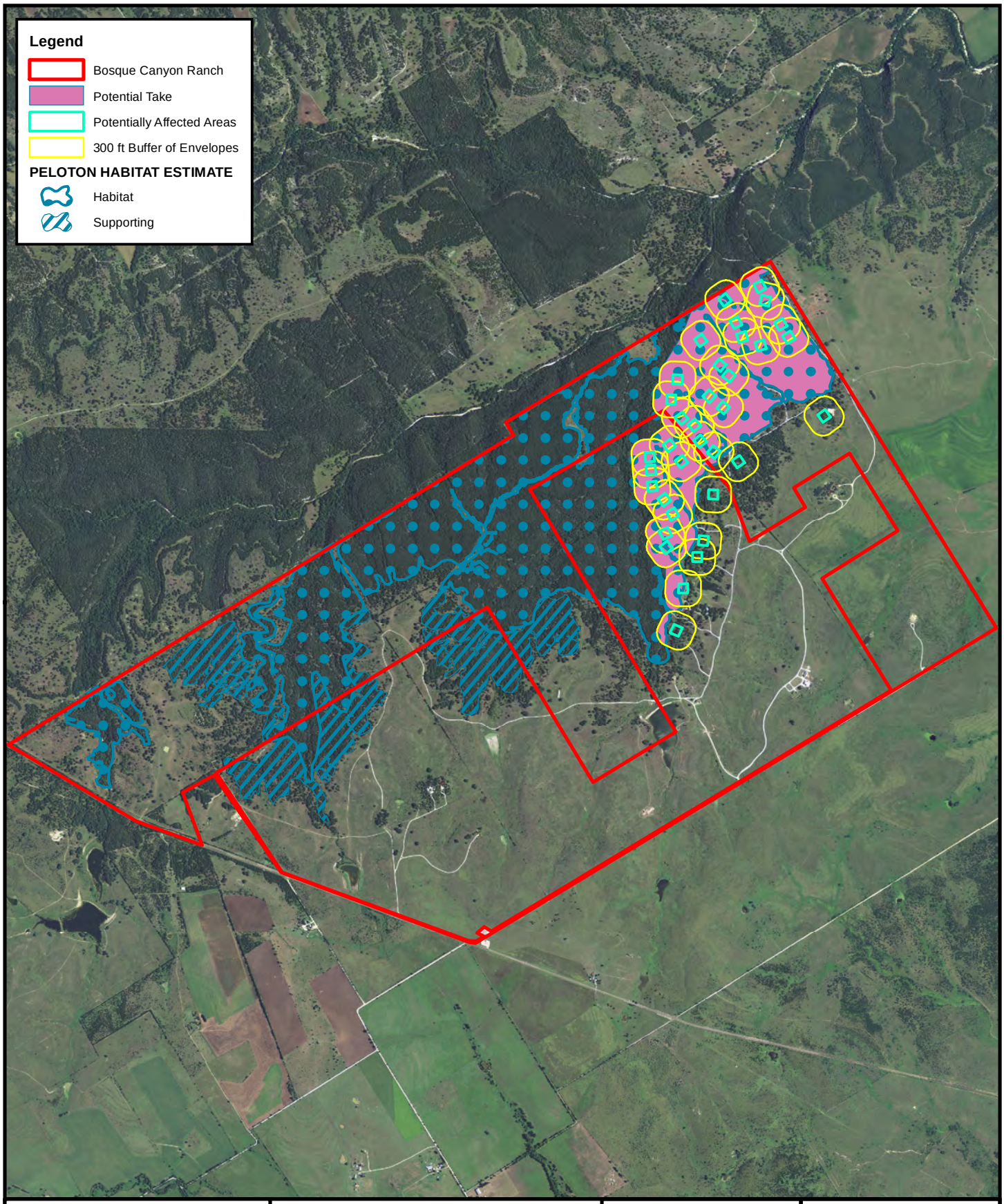

EXHIBIT C

GRAPHIC SCALE

N W E S

0 3,000 Feet

1 inch = 3,000 feet

Bosque Canyon Ranch

Proposed Alternative: Potentially Affected Area and Area Defined as Take

Bosque County, Texas

Source: TNRIS (2010)

Prepared For:

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Date: January 2013

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Exhibit D: Highlights of BCR's Design Rules and Guidelines and Covenants, Conditions, and Restrictions

Design Rules and Guidelines (DRGs)

- The DRGs were created to ensure that all improvements at Bosque Canyon Ranch preserve its natural beauty and environment, to provide harmonious residential design, and to protect and enhance property values.

- The DRGs are intended for use by all persons involved in any new buildings or landscapes, as well as any subsequent additions or alterations to any property at Bosque Canyon Ranch.

- The DRGs are administered and enforced by the Design Review Committee ("DRC") in accordance with procedures set forth in the DRGs and the Covenants, Conditions and Restrictions for Bosque Canyon Ranch ("CC&R's").

- Buildings need to be residential in scale, with the heated and cooled square footage (excluding outside decks) not to exceed 5,500 square feet.

- Buildings and decks are to follow topographic changes through the use of stepped floor levels.

- Exterior lighting is only permitted as subtle, concealed lights sources within the landscape to the extent required for safety, but kept to a minimum. Lighting shall be low level, with the light source not visible. No exposed bulbs or vapor lights are permitted.

- No more than one-fourth (1/4) of an acre of a Ranch Homestead may be irrigated. Specimen trees must be protected. No structures may be built closer than twenty (20) feet from the drip line of a specimen tree, or double the size of the drip line, whichever is greater, without prior written approval from the DRC.

- Bosque Canyon Ranch has implemented rules to be followed regarding construction activities on Ranch Homesteads. In areas of mature juniper forests (as determined by the DRC), clearing of sites for construction should only occur during the period beginning September 1 of each year and ending on March 15 of the following year. Outside construction activities should be very limited during the period of March 15-April 30 of each year (interior construction activities and hiking, biking and other recreational uses are not restricted during this period). During the period of April 30 to September 1 of each year, limited construction activities (but not clearing of the Ranch Homestead) are permitted.

- The Builder/Contractor will take extreme care during construction to assure that trees not authorized for removal are not damaged. All trees remaining within the approved Construction Area must be properly tagged and protected prior to the commencement of any grading operations. Every effort must be made to reduce compaction and/or disturbance within the drip line of all trees located within and outside an approved Construction Area.

- All topsoil disturbed by grading operations must be stock-piled within the Construction Area and reused as part of the site restoration/landscaping plans, or removed to an approved off-site location.

Covenants, Conditions, and Restrictions (CC&Rs)

- No trees with a caliper in excess of two (2) inches on any Ranch Homestead may be removed or trimmed or modified without the prior written consent of the DRC. Outside of the Building Envelope, no trees or shrubs of any nature shall be cut, trimmed or removed without the prior written consent of the DRC. The intent of this provision is to ensure proper preservation of a precious resource and maintenance of a given view shed. Removal or trimming of trees may be further restricted based on established conservation guidelines to preserve natural habitats.

- Irrigation on landscaping maintained within the Building Envelope may be further restricted (such as number of days usage and time of day) by the Association for water conservation purposes.

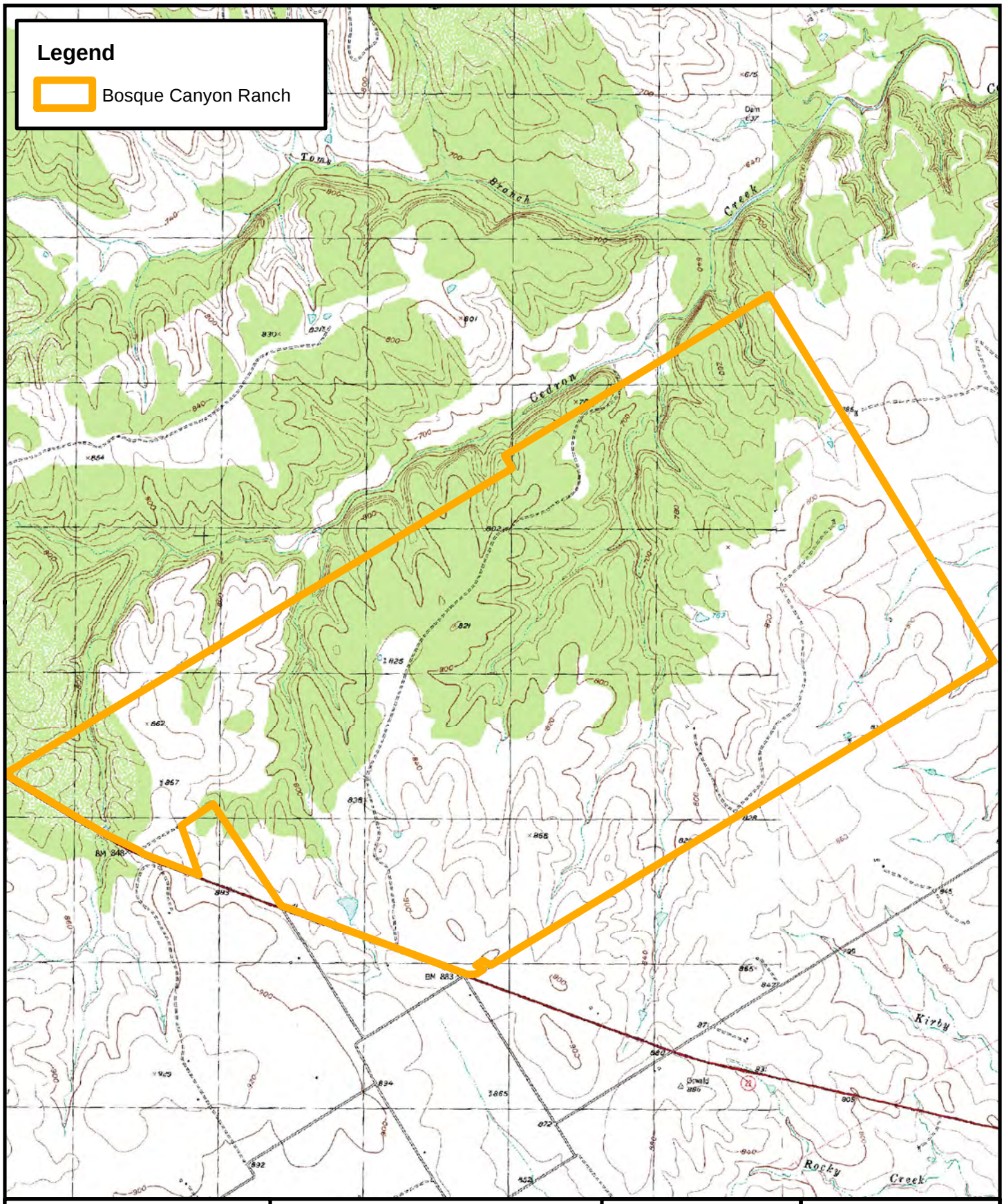

EXHIBIT E

GRAPHIC SCALE

0 3,000 Feet

1 inch = 3,000 feet

Bosque Canyon Ranch

USGS Topographic Map

Bosque County, Texas

Source: TNRIS/USGS Pilot Knob Quadrangle (1976)

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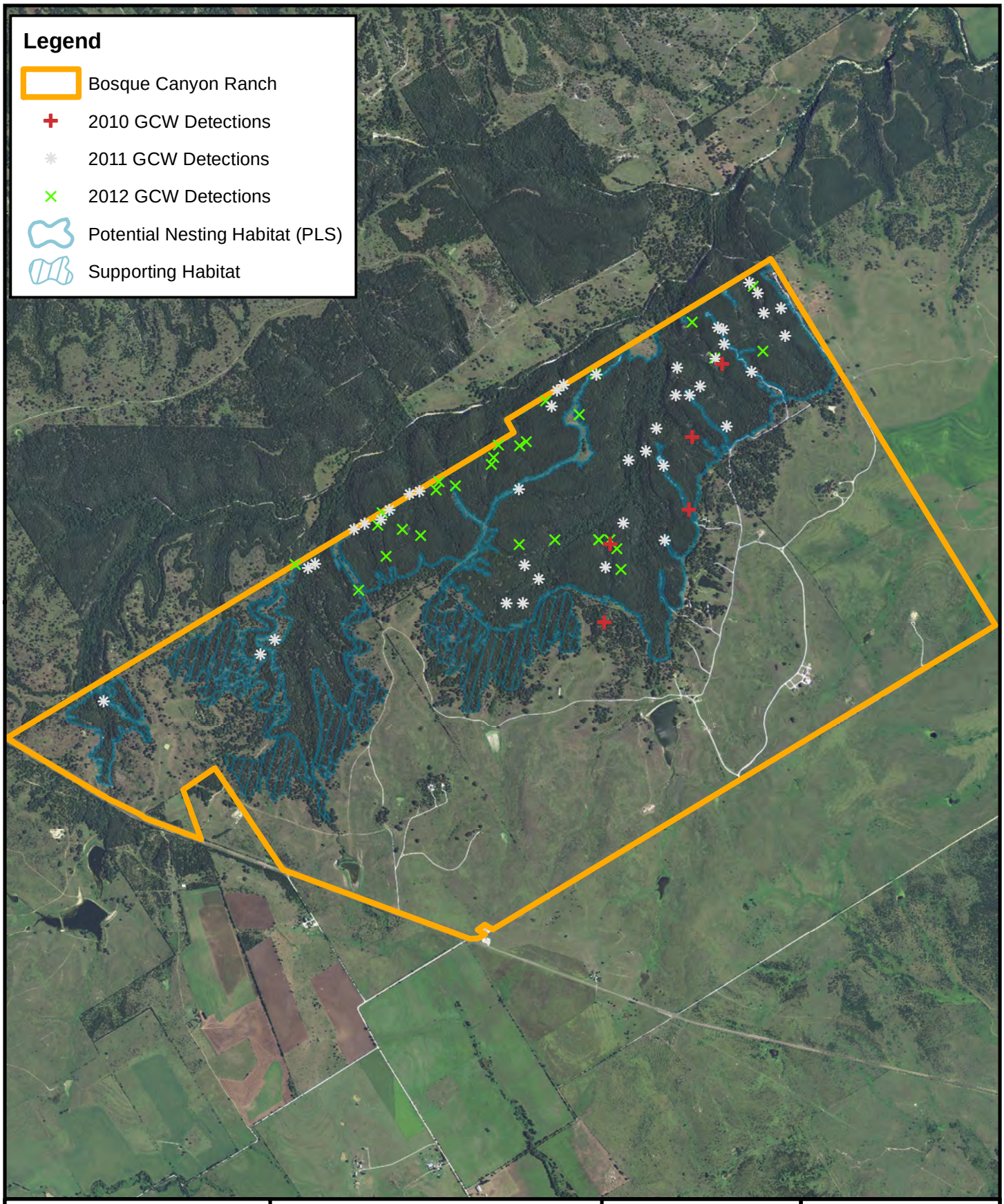

EXHIBIT F

GRAPHIC SCALE

0 3,000 Feet

1 inch = 3,000 feet

Bosque Canyon Ranch

2010 - 2012 GCWA Detections

Bosque County, Texas

Source: TNRIS (2010)

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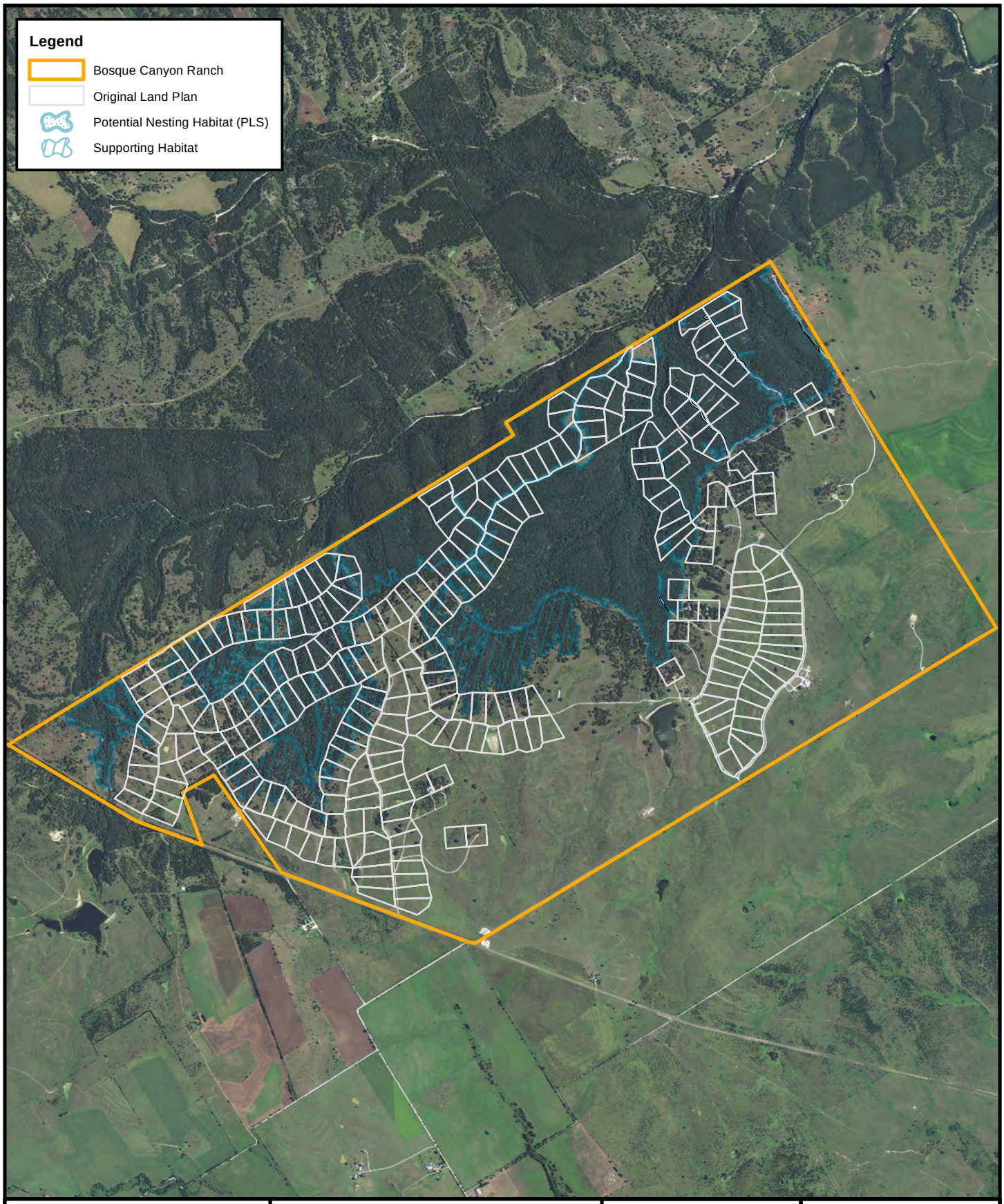

EXHIBIT G

GRAPHIC SCALE

N W E S

0 3,000 Feet

1 inch = 3,000 feet

Bosque Canyon Ranch

Original Land Plan
(281 Lots)

Bosque County, Texas

Source: TNRIS (2010)

Prepared For:

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