



United States Department of the Interior

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02ETAR00-2014-F-0029

Memorandum

To: Assistant Regional Director, Ecological Services, Albuquerque, NM
(Attn: M. Tuegel)

From: Field Supervisor, Arlington Ecological Services Field Office, TX

Subject: Intra-Service Draft Biological Opinion for the Issuance of a Section 10(a)(1)(B) Permit for Incidental Take associated with the Bosque Canyon Ranch Habitat Conservation Plan – Permit TE-21506B-0

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed issuance of a Section 10(a)(1)(B) permit for the Bosque Canyon Ranch Low-effect Habitat Conservation Plan (HCP) located in Bosque County, Texas, and its effects on golden-cheeked warblers (GCWA) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The proposed permit and Habitat Conservation Plan would cover a 50-year period.

This biological opinion is based on information provided in the October 31, 2013 HCP, Service files, published and unpublished literature on the affected species and potential impacts, previous conversations with the Bosque Canyon Ranch project proponents and their representatives and other sources of information in our files. A complete record of this consultation is on file at the Arlington, Texas, Ecological Services Field Office.

BIOLOGICAL OPINION

This document transmits our biological opinion for the issuance of a U.S. Fish and Wildlife Service (Service) 10(a)(1)(B) permit for the Bosque Canyon Ranch (BCR) in Bosque County, Texas. The proposed BCR is a low-density residential community over roughly 3,745 acres. It is anticipated that 321.84 acres of the 924.35 acres of current GCWA habitat will be directly (28.21 acres) or indirectly (293.63 acres) affected by Covered Activities on the BCR over the 50 year permit period. BCR has already implemented two conservation easements that permanently protect approximately 93 percent of the Ranch. Approximately 770 acres of golden-cheeked warbler (GCWA) breeding habitat not affected directly or indirectly by the development will be conserved in perpetuity. Another 227.6 acres of young oak-juniper forest/shrubland (GCWA supporting habitat not quite mature enough to be breeding habitat) will be perpetually conserved and managed in a manner to allow it to likely grow into breeding habitat by the end of the 50-year permit duration. BCR is also implementing a number of minimization and avoidance measures to reduce negative impacts to GCWAs.

Consultation History

November 2011	The Arlington, Texas Ecological Services Field Office received initial contact from the Bosque Canyon Ranch indicating they would be pursuing an HCP to cover expected impacts to the GCWA from their proposed residential development.
January 2013	Bosque Canyon Ranch submitted a draft HCP for review.
November 2013	Bosque Canyon Ranch submitted an application and revised draft HCP.
January 2014	Notice of availability of draft HCP and low effect screening document published in the Federal Register (79 FR 1387).

Definitions

Direct effect – Those effects that are direct or immediate effects of the project on the species or its habitat (Service 1998).

Effect – The direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action. These effects are considered along with the environmental baseline and the predicted cumulative effects to determine the overall effects to the species for purposes of preparing a biological opinion on the proposed action (50 CFR §402.02).

Habitat Conservation Plan – A Habitat Conservation Plan is a document that describes, among other things required under the Act, the minimization and mitigation measures the applicant has agreed to implement that must accompany a request for a permit (pursuant to 10(a)(1)(B) of the Act) to take listed species while ensuring their long-term survival and enhancement. The purposes of the permit and accompanying HCP are to: (1) reduce conflicts between endangered or threatened species and economic activity, and (2) develop partnerships between the public and private sectors. A permit will not be issued unless the HCP specifies: (i) the impact which will likely result from such taking; (ii) what steps the applicant will take to minimize and mitigate such impacts, and the funding that will be available to implement such steps; (iii) what alternative actions to such taking the applicant considered and the reasons why such alternatives are not being utilized; and (iv) such other measures that the Secretary may require as being necessary or appropriate for purposes of the plan. Take authorized pursuant to a 10(a)(1)(B) permit is incidental to, and not the purpose of, the proposed activity.

Indirect Effect – Those effects that are caused by, or will result from, the proposed action and are later in time, but are still reasonably certain to occur (50 CFR §402.02).

Take – To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct (16 USC §1532). *Harm* is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. *Harass* is also further defined as actions that create the likelihood of injury to listed species 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).

I. Description of Proposed Action

The Service proposes to issue a 10(a)(1)(B) incidental take permit to the Bosque Canyon Ranch in Bosque County, Texas. The Bosque Canyon 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). BCR has designated 48, 5-acre home sites (Homesteads), which are owned by individual BCR 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. Within each Homestead, the Partner is restricted to placing structures within a 2-acre building envelope (with only 1-acre of land clearing allowed) designated by BCR, with potential direct effects being 1-acre or less. BCR's very low intensity, designed development of the Ranch preserves the Ranch's unique natural resources. The proposed HCP establishes a conservation program that minimizes and mitigates, to the maximum extent practicable, the adverse effects of authorized take of GCWA (Covered Species) on the Bosque Canyon Ranch's Permit Area. The proposed HCP is anticipated to provide benefits to the GCWA by conserving habitat to support GCWA

populations in Bosque County in perpetuity.

II. Status of the Species/Critical Habitat

The current list of federally listed endangered species that are known to occur, or have been documented in Bosque County is presented in Table 1.

Table 1. Federally listed species known to occur in Bosque County, Texas.		
Common Name	Scientific Name	Status
black-capped vireo	<i>Vireo atricapilla</i>	Endangered
golden-cheeked warbler	<i>Setophaga [=Dendroica] chrysoparia</i>	Endangered
whooping crane	<i>Grus americana</i>	Endangered

Whooping cranes are transient in Bosque County. Observations of whooping cranes are uncommon in Bosque County, last occurring in 1992 and not located near the Bosque Canyon Ranch. The Bosque Canyon Ranch does not contain suitable stopover habitat for the endangered whooping crane and thus, there will be no effects to whooping cranes. For this reason, this species is not considered further in this biological opinion. Surveys of the project area indicate there is no black-capped vireo habitat on the property and multiple years of bird surveys on the property have not identified the area is used by this species. For this reason, there will be no effects to black-capped vireo and this species is not considered further in this biological opinion. The GCWA does occur in the action area and may be affected by the proposed action.

Golden-cheeked Warbler

Species Description and Life History

The GCWA was emergency listed as endangered on May 4, 1990, (55 FR 18844). The final rule listing the species was published on December 27, 1990, (55 FR 53160). No critical habitat is designated for this species. The recovery plan for the GCWA was finalized on September 30, 1992.

The GCWA is a small, insectivorous songbird, 11.4 to 12.6 centimeters (4.5 to 5 inches) long with a wingspan of approximately 20 centimeters (8 inches). Average breeding weight is 10.2 grams (0.36 ounces) for adult males and 9.4 grams (0.33 ounces) for adult females. Wings are black with two distinct white wing-bars. Both males and females have yellow cheeks and a thin black eye line. The back feathers of older males have large, distinct black centers while the back feather of females and younger males have smaller, less distinct black centers (Pyle *et al.* 1997). The chin and throat of older males is black while the center of the chin of females and younger males is yellow or white with variable amounts of black along the side of the throat. Breast and

abdomen of both sexes are white with black streaking along the flanks (Pyle *et al.* 1997). GCWAs breed exclusively in the mixed Ashe juniper/deciduous woodlands of the central Texas Hill Country west and north of the Balcones Fault (Pulich 1976). GCWAs require the shredding bark produced by mature Ashe junipers for nest material. Typical deciduous woody species include Texas oak (*Quercus buckleyi*), Lacey oak (*Q. glaucoides*), live oak, 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 illinoensis*) (Pulich 1976, Wahl *et al.* 1990). Breeding and nesting GCWAs feed primarily on insects, spiders, and other arthropods found in Ashe junipers and associated deciduous tree species (Pulich 1976).

Males arrive in central Texas in early March and begin to establish breeding territories, which they defend against other males by singing from visible perches within their territories. Females begin arriving a few days later (Pulich 1976). Females begin construction of open-cup nests in mid-March and will make up to five nesting attempts throughout the breeding season when a previous attempt is not successful (Peak *et al.* 2010). Females usually lay three or four eggs per clutch, but occasionally will lay five eggs (Pulich 1976). By late July, GCWAs have begun their migration south (Chapman 1907, Simmons 1924). Individuals have been recorded at wintering sites as early July and as late as April (Alliance for the Conservation of Mesoamerican Pine-Oak Forests 2007). GCWAs winter in the Central American pine-oak forest (*Pinus spp.-Quercus spp.*) region, which is located throughout the highlands of the Sierra Madre extending from southern Mexico to northwestern Nicaragua (Alliance for the Conservation of Mesoamerican Pine-Oak Forests 2007).

Historical and Current Distribution

The GCWA's entire breeding range occurs on the Edwards Plateau and Lampasas Cut Plain of central Texas. Golden-cheeked warblers have been confirmed in 39 counties: Bandera, Bell, Bexar, Blanco, Bosque, Burnet, Comal, Coryell, Dallas, Eastland, Edwards, Erath, Gillespie, Hamilton, Hays, Hill, Hood, Jack, Johnson, Kendall, Kerr, Kimble, Kinney, Lampasas, Llano, Mason, McLennan, Medina, Menard, Palo Pinto, Real, San Saba, Somervell, Stephens, Tom Green, Travis, Uvalde, Williamson, and Young. However, many of the counties where it is known to occur, now or in the past, have only small amounts of suitable habitat (Pulich 1976, Service 1996b, Lasley *et al.* 1997). Diamond (2007) estimated that the amount of suitable GCWA habitat across the species' range was approximately 4.2 million acres, much of this habitat occurring on private lands. As a result, the population status for the GCWA on private lands remains undocumented throughout major portions of the breeding range.

Reasons for Decline and Threats to Survival

Before 1990, the primary reason for GCWA habitat loss was juniper clearing to improve conditions for livestock grazing. Since then, habitat loss has occurred as suburban developments

spread into prime GCWA habitat. Groce *et al.* (2010) summarized the rates of expected human population growth within the range of the GCWA and found by 2030 the growth rate ranges from 17 percent around the Dallas-Fort Worth area to over 164 percent around San Antonio. As the human population continues to increase, so do associated roads, single and multi-family residences, and infrastructure, resulting in continued habitat loss, fragmentation, and increased edge effects (Groce *et al.* 2010).

Fragmentation is the reduction of large blocks of habitat into several smaller patches. While GCWAs have been found to be reproductively successful in small patches of habitat (<50 acres), there is an increased likelihood of occupancy and abundance as patch size increases (Coldren 1998, Butcher *et al.* 2010, DeBoer and Diamond 2006). Increases in pairing and territory success are also correlated with increasing patch size (Arnold *et al.* 1996, Coldren 1998, Butcher *et al.* 2010). In addition, while some studies have suggested that small patches that occur close to larger patches are likely to be occupied by GCWAs, the long-term survival and recovery of the GCWA is dependent on maintaining the larger patches (Coldren 1998, Peterson 2001, The Nature Conservancy 2002).

As GCWA habitat fragmentation increases the amount of GCWA habitat edge, where two or more different vegetation types meet, also increases. For the GCWA, edge is where woodland becomes shrubland, grassland, a subdivision, etc., and depending on the type of edge, it can act as a barrier for dispersal; act as a territory boundary; favor certain predators; increase nest predation; and/or reduce reproductive output (Johnston 2006, Arnold *et al.* 1996). Canopy breaks (the distance from the top of one tree to another) as little as 36 feet have been shown to be barriers to GCWA movement (Coldren 1998). Territory boundaries have not only been shown to stop at edges, but GCWAs are more often farther from habitat edges (Beardmore 1994, DeBoer and Diamond 2006, Sperry 2007).

Other threats to GCWAs include the clearing of deciduous oaks upon which the GCWA forage, oak wilt infection in trees, nest parasitism by brown headed cowbirds (Engels and Sexton 1994), drought, fire, stress associated with migration, competition with other avian species, and particularly, loss of habitat from urbanization (Ladd and Gass 1999). Human activities have eliminated large areas of GCWA habitat throughout their range, particularly areas associated with the I-35 corridor between the Austin and San Antonio metropolitan areas.

Range-wide Survival and Recovery Needs

The recovery strategy outlined in the Golden-cheeked Warbler Recovery Plan (Service 1992) divides the breeding range of the GCWA into eight regions, or units, and calls for the protection of sufficient habitat to support at least one self-sustaining population in each unit. These recovery units were delineated based primarily on watershed, vegetational, and geologic boundaries (Service 1992).

Based on the Golden-cheeked Warbler Recovery Plan (Service 1992; currently under revision),

protection and management of occupied habitat and minimization of the degradation, development, or environmental modification of unoccupied habitat is necessary for the survival and recovery of the species. Habitat protection must include elements of both breeding and non-breeding habitat, (i.e., associated uplands and migration corridors). Efforts to create new and protect existing habitat will enhance the GCWA's ability to expand in distribution and numbers. Efforts to increase numbers of existing viable populations is critical to the survival and recovery of this species, particularly when rapidly expanding urbanization continues to result in the loss of prime breeding habitat.

According to the Golden-cheeked Warbler Population and Habitat Viability Assessment Report (Service 1996) (Golden-cheeked warbler PHVA) a viable population needs to consist of at least 3,000 breeding pairs. This and other population viability assessments on GCWAs have indicated the most sensitive factors affecting their continued existence are population size per patch, fecundity (productivity or number of young per adult), and fledgling survival (Service 1996, Alldredge *et al.* 2002). These assessments estimated one viable population will need a minimum of 32,500 acres of prime unfragmented habitat to reduce the possibility of extinction of that population to less than five percent over 100 years (Service 1996b). Further, this minimum carrying capacity threshold estimate increases with poorer quality habitat (e.g., patchy habitat resulting from fragmentation).

Several State and federally owned lands occur within the breeding range of the GCWA, but the overriding majority of the species' breeding range occurs on private lands that have been either occasionally or never surveyed (Service 1992). Currently there are four large GCWA populations receiving some degree of protection: those at the Balcones Canyonlands Preserve in Travis County; the nearby Balcones Canyonlands National Wildlife Refuge in Travis, Burnet, and Williamson Counties; Camp Bullis Military Installation in Bexar County; and the Fort Hood Military Reservation in Coryell and Bell counties. There are also several conservation banks (CB) whose goal is to protect GCWA habitat (acreages represent the total if the entire bank of credits are sold): Clearwater Ranch CB (2,774 acres) and Hickory Pass CB (3,003 acres) in Burnet County, Majestic Ranch CB (495 acres) in Kendall County, and Bandera Canyonlands CB (4,363 acres) in Bandera and Real Counties.

III. Environmental Baseline

A. Description of the action area

The Bosque Canyon Ranch (BCR or 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. BCR consists of roughly 3,745 acres located in the Lampasas Cut Plain vegetation area of Texas as described in Shinnery 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.

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 growing season for most crops (Soil Conservation Service 1980).

B. Status of the species within the action area

The GCWA population has been monitored through presence/absence surveys and its habitat mapped on Bosque Canyon Ranch for several years by a third-party consulting group. Approximately 924.35 acres of GCWA breeding habitat (mature oak-juniper forest) are present on the property and approximately 227.6 additional acres of GCWA supporting habitat (young oak-juniper forest/shrubland) are also present. Multiple years of species surveys have shown that a majority of the mature breeding habitat is occupied by GCWA. There are no estimates of abundance or species productivity due to the lack of intensive nest monitoring and territory mapping surveys.

IV. Effects of the Action

Under section 7(a)(2) “effects of the action” refers to the direct and indirect effects of an action on a species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action. The effects of the proposed action are added to the environmental baseline to determine the future baseline that serves as the basis for the determination in this biological opinion. The impacts discussed below are the Service’s evaluation of the direct and indirect effects of the proposed action. Indirect effects are those caused by the proposed action that occur later in time, but are still reasonably certain to occur (50 CFR 402.02).

a. Factors to be considered

The issuance of an Incidental Take Permit (ITP) by the Service will not directly affect the GCWA. However, the interrelated actions of the BCR residential development’s construction, maintenance, and operation to be carried out under the ITP are likely to adversely affect the GCWA. The permit duration will be 50 years to allow individual stakeholders to construct their homesteads at their own pace. Clearing of GCWA breeding habitat for homestead construction is source of direct effects to the GCWA. The Service utilizes a standard 300-ft buffer around habitat removal to determine the extent of indirect

effects from proposed actions. Due to the layout of the homesteads, habitat fragments between buffered areas isolated from remaining GCWA breeding habitat and too small to support GCWAs on their own will also be analyzed as take. The loss of habitat acres will be used as a surrogate to actual bird losses to estimate take due to the lack of knowledge regarding bird densities in the permit area. The HCP is mitigating onsite through the conservation of GCWA habitat in permanent conservation easements.

b. Analyses for effects of the action

It is anticipated that up to 28.21 acres of GCWA breeding habitat will be cleared for homestead construction (direct effects) and that 293.63 acres of GCWA breeding habitat will be indirectly affected primarily by harassment. Clearing of GCWA habitat will not result in lethal take of GCWA because clearing will be performed outside of the bird's breeding season. Therefore, all take associated with habitat clearing is expected to be in the form of harm. Degradation of surrounding habitat on the 293.63 acres 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.

The loss of GCWAs through lethal window strikes is likely to be rare and calculating the number of GCWAs potentially killed over the permit duration or life of the development is virtually impossible. Therefore, it is the Service's belief that any strikes that do occur will be adequately included in the estimated take of individuals associated with the loss of habitat. As described later in this section, the Service has calculated a liberal estimate of the amount of indirect take expected by including fragmented and isolated habitat acres outside the direct effects (the building envelopes) and the 300-ft harassment buffers. Although lethal take by window strikes may occur, take of individual birds are anticipated and mitigated through the calculated direct and indirect loss of habitat in surrounding areas (28.21 acres and 293.63 acres, respectively).

Most of the homesteads are not expected to be occupied year-round and it is unlikely each homestead will have domesticated indoor/outdoor cats it is believed that the effect from cat predation will be low, although it may potentially occur. In a study of indoor/outdoor cats in a suburban area surrounded by woodlands, Kays and DeWan (2004) found that the home range of individual cats averaged 0.24 ha (0.59 acres), which falls well within the area covered by the 300-ft buffer. The authors also found that indoor/outdoor cats rarely leave the developed area and enter forests (Kays and DeWan 2004). The authors also found that these cats average 1.67 kills per month during the summer and that only 13.6% of those kills are birds (Kays and DeWan 2004). Given the GCWA's proclivity to nest high in oak trees in forested areas it is likely hunting cats will find easier prey and GCWA may be infrequently captured. In any case, given the few number of cats expected to occur on the property, the likelihood that many cats will be indoor only, the limited home range of suburban cats surrounded by forest which is less than the 300-ft buffer used to measure indirect effects, the

proclivity of indoor/outdoor cats to avoid forested areas, the low capture rate of birds by indoor/outdoor cats, the possibility of outdoor cats being depredated by other wildlife, and the likelihood GCWAs will not be the easiest birds to capture all suggest our estimation of take through indirect effects will more than adequately cover any possible cat predation effects to the GCWA.

The 300-ft buffer surrounding each homestead's 1-acre disturbance limit is approximately 13.2 acres. We find the applicant's liberal estimate of take (321.84 acres including the areas of direct effects, the 300-ft buffers, isolated fragments between the 300-ft buffer zones, and a patch of GCWA habitat (approx. 57 acres) in the southeast corner that would be at least partially isolated by the development area) adequately covers any anticipated take that may result from window strikes or cat depredation.

The BCR has already implemented conservation easements on the property surrounding the homesteads. Approximately 770 acres of GCWA breeding habitat not affected directly or indirectly by the development will be conserved in perpetuity. Another 227.6 acres of young oak-juniper forest/shrubland (GCWA supporting habitat not quite mature enough to be breeding habitat) will be perpetually conserved and managed in a manner to allow it to likely grow into breeding habitat by the end of the 50-year permit duration. Normally the Service requires a 2:1 mitigation ratio for direct effects and a 0.5:1 ratio for indirect effects to GCWA habitat. This requires the permanent conservation of 56.54 acres of GCWA breeding habitat for direct effects and 146.8 acres for indirect effects for a total of 203 acres. Assuming the supporting habitat develops into mature GCWA breeding habitat, BCR will be permanently conserving 997.6 acres of GCWA habitat, nearly five times more than is generally required by the Service. This permanently conserved area is more than adequate to support the GCWA population inhabiting the Bosque Canyon Ranch property. GCWA losses from direct and indirect take (including window strikes and cat depredation) are adequately mitigated as described above.

c. Species' response to a proposed action

It is expected that 28.21 acres of direct effects (vegetation clearing) to GCWA breeding habitat will result in take from harm. It is also expected that degradation of surrounding habitat due to take from harassment on 293.63 acres 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. The Home Owners Association has also implemented noise and lighting measures to protect GCWA during the breeding season. Lethal take from window strikes and cat depredation is incalculable and adequately covered by the calculated loss of habitat both directly and indirectly as discussed above.

V. Cumulative Effects

Cumulative effects include the effects of future State, tribal, local or private actions that are

reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

At this time, no future state, tribal, local or private actions are known to be planned within the action area.

VI. Conclusion

After reviewing the current status of the GCWA, the environmental baseline for the action area, the effects of the proposed development, the cumulative effects, and the conservation benefit from the HCP, it is the Service's biological opinion that the issuance of a 10(a)(1)(B) permit for Bosque Canyon Ranch development is not likely to jeopardize the continued existence of the GCWA. The expected complete loss or reduction in biological function of 321.84 acres of GCWA breeding habitat will not appreciably reduce the likelihood of both the survival and recovery of the GCWA. No critical habitat has been designated for this species; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

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

The measures described below are non-discretionary, and must be undertaken by the Service so that they become binding conditions of any permit issued to Bosque Canyon Ranch, as appropriate, for the exemption in section 7(o)(2) to apply. The Service has a continuing duty to regulate the activity covered by this incidental take statement. If the Service (1) fails to assume and implement the terms and conditions, or (2) fails to require the (applicant) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to

monitor the impact of incidental take, BCR must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement and their incidental take permit. [50 CFR §402.14(i)(3)]

Amount or Extent of Take Anticipated

It is expected that 28.21 acres of direct effects (vegetation clearing) to GCWA breeding habitat will result in take from harm. It is also expected that degradation of surrounding habitat due to take from harassment on 293.63 acres 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. Lethal take from window strikes and cat depredation is incalculable and will be ongoing throughout the life of the development; however, we believe that these losses are adequately mitigated through the mitigation for the take as discussed above.

Effect of the take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize impacts of incidental take of GCWA:

1. The Service shall require the applicant to fully implement their HCP and comply with the conditions of 10(a)(1)(B) permit.

Terms and conditions

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

1. The conditions of Bosque Canyon Ranch's HCP must be followed and properly enforced.

It is expected that 28.21 acres of direct effects (vegetation clearing) to GCWA breeding habitat will result in take from harm. It is also expected that degradation of surrounding habitat due to take from harassment on 293.63 acres 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. The reasonable and prudent measures, with their implementing

terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided.

The Fish and Wildlife Service will not refer the incidental take of any migratory bird for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712) if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

Monitoring and Reporting

Monitoring and reporting will be accomplished per the terms of the HCP and accompanying Incidental Take Statement.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

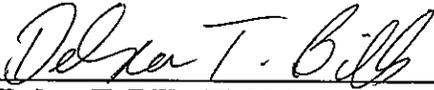
The Bosque Canyon Ranch HCP permanently conserves a large area of GCWA breeding habitat along the northernmost extreme portion of its range, which may be important to GCWA recovery. No additional conservation recommendations are necessary.

Reinitiation Notice

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

We appreciate your coordination on this conservation effort. If further assistance or information is required, please contact Mr. John Morse, or myself at (817) 277-1100.

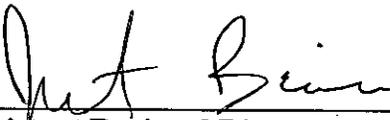
Approved:



Debra T. Bills, Field Supervisor
Arlington Ecological Services Field Office

5/7/14
Date

Concur:



Assistant Regional Director
Ecological Services, Region 2

6/26/14
Date

Non-concur:

Assistant Regional Director
Ecological Services, Region 2

Date

cc: Regional Director, USFWS, Albuquerque, NM (Attn: ARD-ES)

Literature Cited

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