



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
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Memorandum

To: File (S:\T&E\ESA Section 7\IPaC\Determination Keys\ARLES DKey Finals)

From: Omar Bocanegra, Supervisory Fish & Wildlife Biologist, Arlington, Texas

Through: Debra Bills, Field Supervisor, Arlington, Texas; Chris Harper, Austin ES Office

Subject: Golden-cheeked Warbler Determination Key

This memo is a record of the rationale behind the determination key section for the golden-cheeked warbler within the 112 counties covered by the Arlington Ecological Services Office (ARLES). This determination key is a logically structured set of questions to assist a user in determining whether a proposed project qualifies for a predetermined consultation outcome based on USFWS standing analysis. General biology and other information is included to support the standing analysis and key. This key is intended to be delivered through the USFWS' Information for Planning and Consultation (IPaC) web application.

The golden-cheeked warbler 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.

Historic and Current Distribution

The golden-cheeked warbler is a small, insectivorous migratory songbird breeding exclusively in the mixed Ashe juniper/deciduous woodlands in central Texas west and north of the Balcones Fault (Pulich 1976). General information on the biology and habitat of these species can be found at:

https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_w7000_0013_golden_cheeked_warbler.pdf.

Golden-cheeked warblers require the shredding bark produced by mature Ashe junipers (*Juniperus ashei*) for nest material. The golden-cheeked warbler's entire breeding range occurs on the Edwards Plateau and Lampasas Cut Plain of central Texas. Golden-cheeked warbler occurrence has been confirmed in 39 counties in Texas. In the Arlington ESFO area of

responsibility, golden-cheeked warblers are known to occur in Bosque, Dallas, Eastland, Erath, Hill, Hood, Jack, Johnson, Palo Pinto, Somervell, Stephens, and Young counties (USFWS 2020).

Male golden-cheeked warblers arrive in central Texas around March 1st and begin to establish breeding territories while females arrive a few days later, but are more difficult to detect in the dense woodland habitat (Pulich 1976). By late July, golden-cheeked warblers begin their migration southward to their wintering habitat in the highland pine-oak woodlands of southern Mexico and northern Central America (Chapman 1907, Simmons 1924, Kroll 1980).

Reasons for Decline and Threats to Survival

The primary threat to the golden-cheeked warbler is habitat destruction and fragmentation resulting in overall losses of available habitat throughout its breeding range (USFWS 2014). Ashe juniper/deciduous woodland habitat is slow-growing and therefore slow to regenerate once it has been altered. Other threats to golden-cheeked warblers include the clearing of deciduous oaks upon which the golden-cheeked warbler forage, oak wilt infection in trees, nest parasitism by brown-headed cowbirds (Engels and Sexton 1994), nest predation (Stake et al. 2004, Reidy et al. 2008), drought, fire, stress associated with migration, and competition with other avian species. Loss of habitat from urbanization and other development activities results in the greatest threat to golden-cheeked warblers (Ladd and Gass 1999).

Fragmentation is the reduction of large blocks of habitat into several smaller patches. While golden-cheeked warblers have been found to be reproductively successful in small patches of habitat (less than 50 acres), there is an increased likelihood of occupancy (Collier et al. 2010, Collier et al. 2012) 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 golden-cheeked warblers, their long-term survival and recovery is dependent on maintaining the larger patches (Coldren 1998, Peterson 2001, TNC 2002). Further, the presence of edges negatively affects warbler nest survival (Peak 2007, Reidy et al. 2009, Peak and Thompson 2013).

As golden-cheeked warbler habitat fragmentation increases the amount of golden-cheeked warbler habitat edge, where two or more different vegetation types meet, also increases. For the golden-cheeked warbler, a habitat edge is where woodland becomes shrubland, grassland, a subdivision, or other land use type, and depending on the type of edge, it can act as a barrier for dispersal; act as a territory boundary; favor certain predators (i.e., rat snakes Sperry et al. 2009); 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 golden-cheeked warbler movement (Coldren 1998). Studies have shown that avian predation is greatest within 300 feet of the edge of occupied habitat patches, therefore maintaining a 300 ft. minimum buffer of woodland vegetation adjacent to and around golden-cheeked warbler habitat is considered beneficial (Arnold et al. 1996).

Golden-cheeked warblers are highly territorial and show strong fidelity to breeding sites (Grzybowski 1995, Campbell 2003), that is, birds often return to their previous breeding territory after the winter season. Thus, habitat that is used by these species during the breeding season is still considered occupied when the species is on the wintering grounds. The removal of suitable breeding habitat for these species is a direct effect if the species is seasonally occupying the habitat.

Proposed activities may occur without adverse effects to the warbler if the project area does not contain these species' preferred habitat and is located at least 300 feet from habitat, or if suitable habitat occurs within 300 feet of a project, but no suitable habitat would be removed or degraded and the action would be scheduled outside of the species' breeding season (March 1 through August 31). For projects that are anticipated to remove or degrade the species' habitat or are located within 300 feet of habitat and would be constructed during the breeding season, we recommend surveys for the presence of birds be conducted prior to any disturbance activities. If the results of the survey indicate "absence" of golden-cheeked warblers, no further coordination would be necessary, provided construction was implemented and completed prior to the beginning of the breeding season immediately following the survey year (i.e., an "absence" determination may only be applied to the year of the survey).

Key for evaluating potential impacts to the golden-cheeked warbler within the ARLES area of responsibility.

If the project is found to intersect golden-cheeked warbler Area of Influence (determined through IPaC), the Key for evaluating effects follows:

- A. Does the action area (including all temporary rights-of-way, storage spaces, borrow areas, etc.) encompass or overlap with oak-juniper woodland habitat as defined in Management Guidelines for the Golden-cheeked Warblers ?
 - a. If yes..... go to C
 - b. If no.....go to B
- B. Is the project area (including all temporary rights-of-way, storage spaces, borrow areas, etc.) located within 300 feet of oak-juniper woodland habitat?
 - a. If yes.....go to C
 - b. If no..... no effect
- C. Would the project involve the removal, modification, or degradation of oak-juniper woodland habitat?
 - a. If yes..... go to E
 - b. If no.....go to D
- D. Would the proposed action be scheduled outside of golden-cheeked warbler breeding season (March 1 through August 31)?
 - a. If yes.....not likely to adversely affect
 - b. If no.....go to E

- E. Has a presence/absence survey been conducted to determine whether golden-cheeked warblers are found in or likely to occur in the project area or adjacent habitat (within 300 feet)?
 - a. If yes..... go to F
 - b. If no.....may affect, conduct presence/absence survey using USFWS protocol or contact field office for additional assistance

- F. Do the results of the presence/absence survey indicate that golden-cheeked warblers are present in the proposed project area or adjacent area (within 300 feet)?
 - a. If yes.....May affect, likely to adversely affect
 - b. If no.....not likely to adversely affect, provided that project implementation is completed prior to the beginning of the breeding season immediately following the year the survey was performed (i.e., survey is good for one year).

END KEY

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