

2016 Golden-cheeked Warbler Report

Westcave Preserve
Travis County, Texas

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Prepared for: LCRA Natural Resource Conservation

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Introduction

Westcave Preserve is a 76-acre preserve owned by the Lower Colorado River Authority (LCRA) and operated by the non-profit Westcave Outdoor Discovery Center. A portion of Westcave Preserve is part of the greater Balcones Canyonlands Preserve System, which was established and is operated by the Balcones Canyonlands Conservation Plan (BCCP), a regional multispecies habitat conservation plan, involving multiple governing entities, including LCRA. The BCCP also serves as a vehicle for U.S. Fish and Wildlife Service (USFWS) to issue permits to these entities under Section 10(a)(1)(B) of the Endangered Species Act.

Westcave Preserve is located near the western boundary of Travis County on Hamilton Pool Road, along the western bank of the Pedernales River. Originally, the preserve consisted of the 28.85 acres of high quality breeding habitat for the endangered Golden-cheeked Warbler (*Setophaga chrysoparia*) (GCWA). In 2008 and 2011, additional acreage surrounding the original property was purchased to serve as a buffer to protect water quality and expand the area of the preserve.

Purpose

The purpose of this report is to present the findings of the 2016 Golden-cheeked Warbler survey at Westcave Preserve. The overall goal of this effort is to track the status of GCWA over time with specific goals to determine density and productivity for each survey year.

Territory mapping surveys were conducted encompassing the entire preserve as one survey unit, allowing a continuum of habitat use designation. LCRA previously conducted presence/absence surveys, dividing the original portion of the property, designated as the “preserve” and the recently acquired tract, designated as the “uplands”.

Survey methodology followed territory mapping protocol (Williamson 1964; Marchant 1983; Bibby, et al. 2000) where all breeding GCWA males were identified and territory boundaries were determined. This survey methodology adheres to and surpasses the USFWS recommended minimum procedures for determining the presence/absence of Golden-cheeked Warblers outlined in LCRAs federal Fish and Wildlife permit (Permit No. TE800900-0, issued 5 April 2011) and USFWS Section 10(a)(1)(A) Scientific Permit Requirements for Conducting Presence/Absence Surveys and Habitat Assessments for Endangered Golden-cheeked Warblers (FWS 2010). Territory mapping will enable Westcave Preserve to monitor populations long-term and provide guidance for future land management decisions.

Golden-cheeked Warbler Life History Summary

Description: The GCWA is a medium-sized (approx. 12-13 centimeters [cm] length) insectivorous passerine. Breeding adult males have black on the forehead, crown,

nape, and back. The cheeks are a bright golden yellow, interrupted by a black eyeline. The throat and upper breast are black, which continues as streaking along the sides and flanks. The remaining underparts are white. The wings are black with two distinct white wing-bars. Adult females are similar in coloration, but are comparatively duller; the crown and back are olive-green with some black streaking (Oberholser 1974, Pulich 1976, Ladd and Gass 1999).

Range: The GCWA is the only bird species with a breeding range confined to Texas, specifically isolated to south-central areas of the state. Historically, this species nested in approximately 41 of Texas' 254 counties; however, current confirmed breeding records are restricted to 33 Texas counties (Pulich 1976, USFWS 1995, Ladd and Gass 1999, Lockwood and Freeman 2014). Currently, the species is found from Young and Palo Pinto counties, south through the eastern and south-central parts of the Edwards Plateau to Edwards and Kinney counties, and Val Verde County (Lockwood and Freeman 2014, USFWS 2013). GCWAs winter in pine and pine-oak woodlands in the highlands of southern Mexico, Guatemala, Honduras, Nicaragua and is a rare visitor to Costa Rica, Panama, and the western edge of Belize (Ladd and Gass 1999, James and Komar 2006, avibase 2016).

Habitat: GCWA habitat consists of old-growth and mature regrowth juniper-oak woodlands with a high percentage of canopy cover in limestone hills and canyons on Central Texas (Pulich 1976, Ladd 1985, Wahlet al. 1990, USFWS 1992).

An essential component for GCWA breeding habitat, however, is Ashe Juniper. When mature, Ashe Junipers develop shredding strips of bark used by GCWA's as the primary nesting substrate (Pulich 1976, Kroll 1980 and Gass 1999).

The woodlands also consist of various species of oaks (*Quercus* spp.), such as Texas red oak (*Quercus buckleyi*) and plateau live oak (*Quercus fusiformis*). Other common tree species throughout nesting range include cedar elm (*Ulmus crassifolia*), walnut (*Juglans* spp.), hackberry (*Celtis* spp.), and Texas ash (*Fraxinus texensis*); less common tree species are escarpment black cherry (*Prunus serotina*), sycamore (*Platanus occidentalis*), American elm (*U. americana*), coma (*Bumelia lanuginosa*), redbud (*Cercis canadensis*), and rough-leaf dogwood (*Cornus drummondii*). Common undergrowth shrubs are Texas persimmon (*Diospyros texana*), agarito (*Berberis trifoliolata*), elbow bush (*Forestiera pubescens*), Texas mountain laurel (*Sophora secundiflora*), possum-haw (*Ilex decidua*), evergreen sumac (*Rhus virens*), and polecat bush (*R. aromatic* (Ladd 1985, Sexton 1987, Bearmore 1994).

On wintering grounds, GCWAs select for pine-oak woodlands that are ≥1,100 m in elevation. (Monroe 1968, Rappole et al. 2000).

Status: On 4 May 1990, USFWS published an emergency listing of the GCWA as endangered (55 FR 18844), as well as a proposed rule to formally list the GCWA as endangered. On 27 December 1990, the USFWS published the final rule for listing as

endangered (55 FR 53153). In 2015 a petition was submitted to USFWS to delist the GCWA from the Endangered Species Act. USFWS found the petition did not present substantial information that warranted delisting the GCWA and declared it would take no further action on the petition. The Texas Parks and Wildlife Department (TPWD) also lists the species as endangered. No critical habitat has been designated for the species.

Threats: Species endemism and habitat loss due to agricultural use, brush control and land development are the primary threats to GCWA viability and have been the major factors attributed to population declines (Wahl et al. 1990, FWS 1992, Ladd and Gass 1999). Indirect effects of habitat disturbance, such as Brown-headed Cowbird parasitism and increased predator populations, have further negatively impacted populations (Wahl et al 1990). Environmental factors such as climate change and drought may contribute to Ashe juniper die-off effecting essential breeding habitat components.

Study Area

Due to the relatively small size of Westcave Preserve, the survey area includes the entire preserve with emphasize placed on breeding habitat along canyon slopes, adjacent woodlands and the abutting uplands.

Description: Westcave Preserve is comprised of a unique matrix of habitats found on the Edwards Plateau, supporting a diversity of native and endemic plant and animal species. The Preserve contains native grass and forb prairie, live oak savannah and old growth Ashe juniper-live oak woodlands and features a spring fed creek with a grotto and cave.

Riparian habitat is found surrounding the grotto and along the creek bottom with mesic woodlands on adjacent slopes leading to the Pedernales River and following along the river edge. Mature hardwoods such as Bald cypress (*Taxodium distichum*), Sycamore (*Platanus occidentalis*), cedar elm (*Ulmus crassifolia*) and a various oak sp. (*Quercus sp*.) are found in this area while midstory species consists of Ashe Juniper (*Juniper ashei*), Mountain Laurel (*Sophora secundiflora*), Mexican buckeye (*Ungnadia speciosa)* and oak species. Understory species consists of a diverse plant community, which include, silk tassel (*Garrya ovate)*, American beautyberry (*Callicarpa Americana*) spicebush (*Lindera* benzoin) and redbay (*Persea borbonia*). Extending out from the canyon rims toward the upland area, dense stands of woodlands dominate with mature Ashe Juniper and Escarpment live oak.

The upland portion of the preserve consists of grassland savannah and native grassland/forb prairie. In the grassland savannah areas, Escarpment live oaks (*Quercus fuisformis*) are interspersed with native grasses such as little blue stem (*Schizachyrium scoparium*) and grama species (*Bouteloua sp*). Wildflowers, forbs, yucca species and prickly pear (*Opuntia sp.*) are also found in the open grassy areas. Prairie restoration efforts are currently underway in the upland grassland area south of the creek to promote a diverse growth of native grasses and forbs. In

winter of 2016, brush management, prescribed fire and reseeding measures were employed for this project.

Methods

Territory mapping surveys for GCWAs were performed by avian researcher, Dawn Houston, following the protocol as described in Bibby *et. al*. 2000. All surveys were completed within the GCWA survey season, 15 March to 1 June, adhering to USFWS survey guidelines. Ten site visits were completed to designate GCWA territories and determine nest success. All areas of the preserve were surveyed with an emphasis placed on canyon slopes and adjacent woodlands in the uplands area. All GCWA detections were recorded and corresponding behavior was noted.

Results

Observations: Sixty-seven observations were recorded during 10 site visits from 27 March to 28 May 2016. Additional data were collected with each observation including, date/time of detection, type of observation, sex and coordinates. Survey efforts hours totaled approximately 36.5 hours.

Table 1: Number of Detections per Site Visit

Site Visit Date	27 March	4 April	12 April	19 April	22 April	27 April	4 May	10 May	20 May	29 May
Number of Detections	2	3	12	4	6	9	10	10	5	6

Territories: Two breeding pairs of GCWAs were detected within the study site along the Pedernales River (see Figure 1). The northern territory is designated as A while the southern territory is designated as B. Territory size for Territory A and B were calculated as 3.01 and 2.31 hectares, respectfully.

On 12 April, the male from Territory A was observed countering with a male GCWA north of the creek, indicating a third male present on the preserve. This, however, was an isolated event with no further detection of a third male.

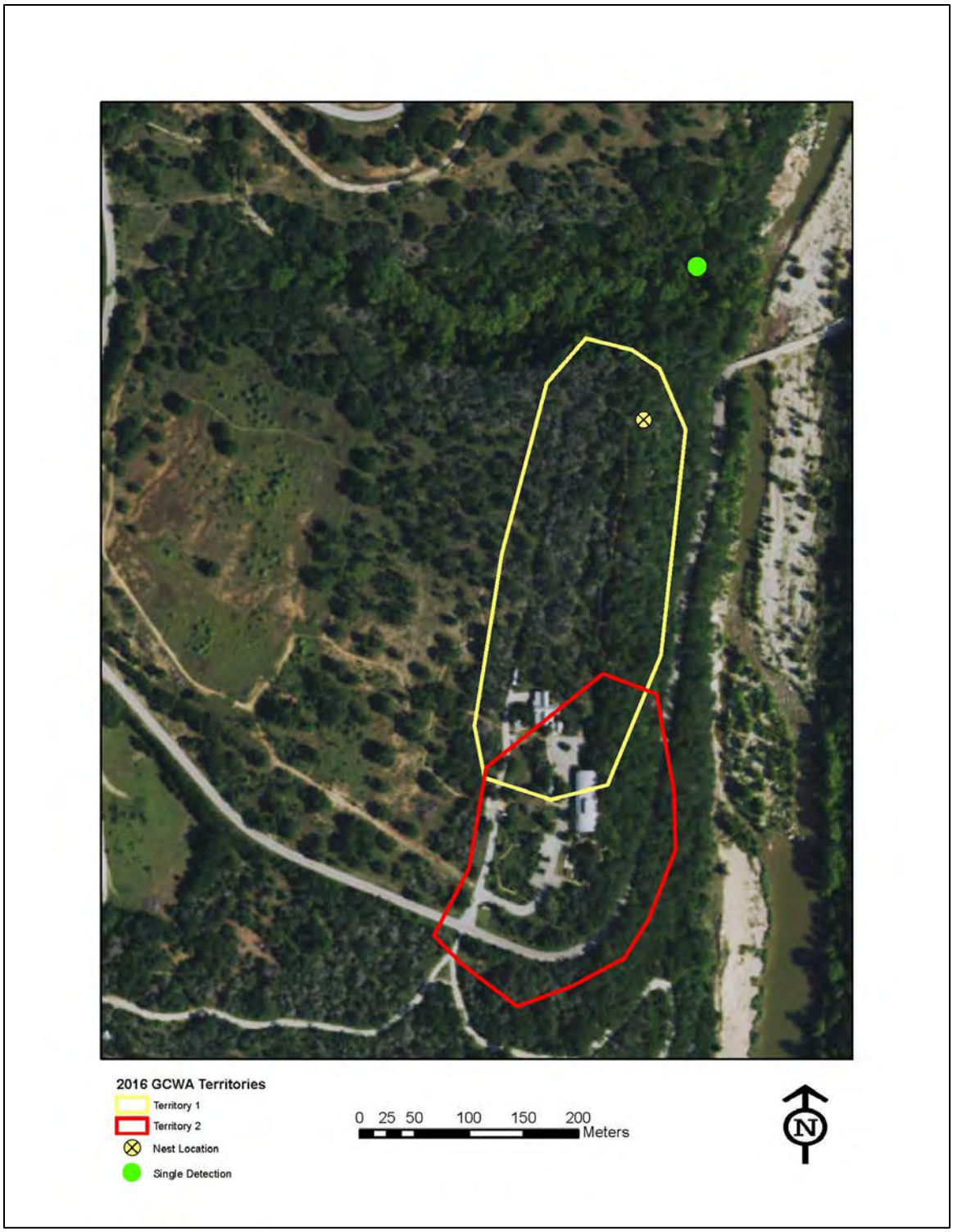


Figure 1: Territories and Nest Location Observed During 2016 Surveys

Nests: On 12 April, Territory A female GCWA was observed completing the construction of a nest along the creek canyon slope close to the confluence of the Pedernales River. The nest was located approximately 6.5 meters high in a cedar elm (10m).

Fledglings: Territory A and B both successfully produced at least 1 fledgling. On 20 May, both male and female GCWAs were observed with one fledgling foraging at ground level along the upland trail adjacent to the upland woodlands. An audible detection, i.e. chipping, was heard in a nearby tree, indicating an additional fledgling.

On the final survey, 29 May, a male fledgling was observed foraging independently within Territory A. The breeding male was singing quietly 4 meters from the fledgling. Territory B male was observed with young fledgling, which was not mobile and was being fed by the male, indicating it had fledged within a few days.

Summary

During the 2016 GCWA breeding season, two territories were established at Westcave Preserve. In April, a third male GCWA was detected counter singing with Territory A north of the creek along the Pedernales River, however, a third territory was not established. Territory A produced at least one fledgling, which was independently foraging during the last survey. Territory B also produced at least one fledgling and was being tending by the male GCWA on the final survey. Fledgling productivity may be higher than observed. After fledging, male and females split parental care and are usually not found together (Ladd and Gass 1999). The females from both territories were not detected during the final survey and may have been tending to other fledglings within their territories.

Brown-headed cowbirds were present throughout the breeding season at Westcave Preserve and were found within the immediate area of Territory A's nest. The GCWA's were not parasitized this season, however, parasitism remains a threat to productivity within the preserve. Westcave Preserve staff acquired a permit to remove BHCOs March 2016 and will continue to control BHCO populations during the breeding season.

Although high quality habitat is limited to canyon slopes along the creek and Pedernales River, Westcave Preserve successfully supports breeding GCWA within the Pedernales River riparian corridor. Land management efforts are currently allowing regrowth of woody vegetation to expand from the upland woodlands around the canyon into a portion of the upland savannah to allow for more GCWA habitat.

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Appendix A: Avian Species Observed During 2016 Survey

Common Name	Scientific Name
Great Blue Heron	*Ardea herodias*
American Coot	*Fulica americana*
Wild Turkey	*Meleagris gallopavo*
Black Vulture	*Coragyps atratus*
Turkey Vulture	*Cathartes aura*
Mississippi Kite	*Ictinia mississippiensis*
Cooper's Hawk	*Accipiter cooperii*
Red-tailed Hawk	*Buteo jamaicensis*
Red-shouldered Hawk	*Buteo lineatus*
White-winged Dove	*Zenaida asiatica*
Mourning Dove	*Zenaida macroura*
Common Ground-Dove	*Columbina passerina*
Yellow-billed Cuckoo	*Coccyzus americanus*
Green Kingfisher	*Chloroceryle Americana*
Greater Roadrunner	*Geococcyx californianus*
Chimney Swift	*Chaetura pelagica*
Black-chinned Hummingbird	*Archilochus alexandri*
Ladder-backed Woodpecker	*Picoides scalaris*
Golden-fronted Woodpecker	*Melanerpes aurifrons*
Scissor-tailed Flycatcher	*Tyrannus forficatus*
Acadian Flycatcher	*Empidonax virescens*
Eastern Phoebe	*Sayornis phoebe*
Great-crested Flycatcher	*Myiarchus crinitus*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Vermillion Flycatcher	*Pyrocephalis rubinus*
Yellow-throated Viireo	*Vireo flavifrons*
Blue-headed Vireo	*Vireo solitarius*
White-eyed Vireo	*Vireo griseus*
Red-eyed Vireo	*Vireo olivaceus*
Woodhouse's Scrub-Jay	*Aphelocoma woodhouseii*
Common Raven	*Corus corax*
Purple Martin	*Progne subis*
Carolina Chickadee	*Poecile carolinensis*
Black-crested Titmouse	*Baeolophus atricristatus*
Canyon Wren	*Catherpes mexicanus*
Carolina Wren	*Thryothorus ludovicianus*
Bewick's Wren	*Thryomanes bewickii*
Ruby-crowned Kinglet	*Regulus calendula*
Blue-gray Gnatcatcher	*Poliopila caerulea*
Eastern Bluebird	*Sialia sialis*
Northern Mockingbird	*Mimus polyglottos*
Cedar Waxwing	*Bombycilla cedrorum*
Black-and-white Warbler	*Mniotilta varia*
Louisiana Waterthrush	*Paresia motacilla*
Nashville Warbler	*Oreothlypis ruficapilla*
Orange-crowned Warbler	*Oreothlypis celata*
Northern Parula	*Setophaga americana*
Yellow Warbler	*Setophaga petechia*

Golden-cheeked Warbler	*Setophaga chrysoparia*
Grasshopper Sparrow	*Ammodramus savannarum*
Lark Sparrow	*Chondestes grammacus*
Rufous-crowned Sparrow	*Aimophila ruficeps*
Chipping Sparrow	*Spizella passerina*
Field Sparrow	*Spizella pusilla*
Lincoln Sparrow	*Melospiza lincolnii*
Spotted Towhee	*Pipilo maculatus*
Summer Tanager	*Piranga rubra*
Northern Cardinal	*Cardinalis cardinalis*
Indigo Bunting	*Passerina cyanea*
Painted Bunting	*Passerina ciris*
Brown-headed Cowbird	*Molothrus ater*
House Finch	*Haemorhous mexicanus*
Lesser Goldfinch	*Spinus psaltria*

Appendix B: Field Data Submission to U.S. Fish and Wildlife Service

FID	Name	Prop_Name	Survey_Nam	Species	Terr_ID	Terr_Type	Surv_Date	Surv_Year	Time	Obs_Type	Sex	POINT_X	POINT_Y
0	C1	Westcave Preserve	Westcave GCWA 2016	GCWA	NA	Daily	20160412	2016	0900	Estimated	M	-98.1396	30.3406
1	A1	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160327	2016	0837	Visual	M	-98.1402	30.3386
2	A2	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160327	2016	0840	Visual	M	-98.1399	30.3389
3	A3	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160404	2016	0900	Visual	Both	-98.1400	30.3396
4	A4	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160412	2016	0904	Visual	Both	-98.1406	30.3395
5	A5	Westcave Preserve	Westcave GCWA 2106	GCWA	A	Daily	20160404	2016	0910	Visual	Both	-98.1404	30.3393
6	B1	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160412	2016	0720	Visual	M	-98.1405	30.3361
7	B2	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160412	2016	0724	Visual	M	-98.1403	30.3358
8	B3	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160412	2016	0728	Visual	M	-98.1406	30.3355
9	B4	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160412	2016	0730	Visual	M	-98.1408	30.3354
10	B5	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160412	2016	0735	Visual	M	-98.1407	30.3358
11	B6	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160412	2016	0743	Visual	M	-98.1404	30.3362
12	A6	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160412	2016	0818	Visual	M	-98.1401	30.3390
13	A10	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160412	2016	0842	Visual	F	-98.1403	30.3395
14	A7	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160412	2016	0820	Visual	Both	-98.1398	30.3392
15	A8	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160412	2016	0825	Visual	F	-98.1399	30.3393
16	A9	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160412	2016	0839	Visual	F	-98.1401	30.3394
17	B7	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160419	2016	0928	Visual	M	-98.1403	30.3367
18	B9	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160419	2016	0940	Visual	M	-98.1403	30.3370
19	B8	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160419	2016	0936	Visual	M	-98.1398	30.3369
20	A11	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160419	2016	0952	Visual	M	-98.1400	30.3391
21	A12	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160422	2016	0915	Visual	Both	-98.1400	30.3388
22	B11	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160422	2016	0738	Visual	M	-98.1405	30.3357
23	B12	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160422	2016	0740	Visual	M	-98.1402	30.3361
24	B13	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160422	2016	0749	Visual	M	-98.1400	30.3365
25	B14	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160422	2016	0811	Visual	M	-98.1399	30.3363
26	B10	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160422	2016	0815	Visual	M	-98.1403	30.3364
27	B15	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160427	2016	0955	Visual	M	-98.1411	30.3354
28	B16	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160427	2016	0958	Visual	M	-98.1412	30.3357
29	B17	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160427	2016	1000	Visual	M	-98.1418	30.3358
30	A13	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160427	2016	0830	Visual	Both	-98.1402	30.3394
31	A18	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160427	2016	0920	Visual	Both	-98.1403	30.3395
32	A14	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160427	2016	0835	Visual	Both	-98.1404	30.3395
33	A15	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160427	2016	0854	Visual	Both	-98.1410	30.3394
34	A16	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160427	2016	0858	Visual	Both	-98.1407	30.3391
35	A17	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160427	2016	0915	Visual	Both	-98.1403	30.3391
36	A19	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160504	2016	0645	Visual	M	-98.1409	30.3368
37	A20	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160504	2016	0648	Visual	M	-98.1414	30.3370
38	A21	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160504	2016	0652	Visual	M	-98.1410	30.3377
39	A22	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160504	2016	0750	Visual	M	-98.1402	30.3374
40	A23	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160504	2016	0755	Visual	M	-98.1405	30.3369
41	B18	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160504	2016	0750	Visual	M	-98.1402	30.3368

FID	Name	Prop_Name	Survey_Nam	Species	Terr_ID	Terr_Type	Surv_Date	Surv_Year	Time	Obs_Type	Sex	POINT_X	POINT_Y
42	B19	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160504	2016	0752	Visual	M	-98.1402	30.3373
43	B20	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160504	2016	0755	Visual	M	-98.1404	30.3376
44	B21	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160504	2016	0758	Visual	M	-98.1400	30.3375
45	B22	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160504	2016	0805	Visual	M	-98.1401	30.3370
46	A30	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160520	2016	0908	Visual	Both w/ fledgling	-98.1415	30.3373
47	A31	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160520	2016	1003	Visual	Both w/ fledgling	-98.1413	30.3380
48	A32	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160520	2016	1005	Visual	Both w/ fledgling	-98.1413	30.3384
49	A33	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160520	2016	1010	Visual	Both w/ fledgling	-98.1409	30.3384
50	A24	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160510	2016	0805	Visual	M	-98.1402	30.3385
51	A28	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160510	2016	0830	Visual	M	-98.1403	30.3390
52	A25	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160510	2016	0807	Visual	M	-98.1402	30.3389
53	A26	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160510	2016	0815	Visual	M	-98.1401	30.3393
54	A27	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160510	2016	0818	Visual	M	-98.1404	30.3393
55	A34	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160528	2016	0800	Visual	M	-98.1403	30.3381
56	A35	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160528	2016	0805	Visual	M	-98.1403	30.3379
57	A29	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20160510	2016	0834	Visual	M	-98.1404	30.3387
58	B23	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160510	2016	0915	Visual	M	-98.1418	30.3359
59	B24	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160510	2016	0918	Visual	M	-98.1415	30.3363
60	B25	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160510	2016	0925	Visual	M	-98.1413	30.3370
61	B26	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160510	2016	0928	Visual	M	-98.1409	30.3365
62	B27	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160528	2016	0840	Visual	M w/ fledgling	-98.1404	30.3366
63	B28	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160528	2016	0850	Visual	M w/ fledgling	-98.1403	30.3365
64	B29	Westcave Preserve	Westcave GCWA 2016	GCWA	B	Daily	20160528	2016	0852	Visual	M w/ fledgling	-98.1404	30.3364
65	A36	Westcave Preserve	Westcave GCWA 2016	GCWA	A	Daily	20150528	2016	0810	Visual	M w/ fledgling	-98.1403	30.3382