2021 Golden-cheeked Warbler Summary
Westcave Preserve
Travis County, Texas

Methods

Territory mapping surveys for Golden-cheeked Warblers (hereafter, GCWA) were conducted under Dawn Houston (Federal permit for GCWA surveys: TE42737A) and Westcave Preserve conservation staff, Jered Davenport, Traci Foulkes, Amber Gosselin. Protocol was followed 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. Twenty-one site visits were completed to designate GCWA territories and determine nest success. In addition, all incidental observations from conservation staff were included to supplement survey data. 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. In conjunction with territory mapping, Westcave began collaborating with the City of Austin in 2017 in adherence to the long-term monitoring plan to obtain the most accurate estimate of return rates, dispersal, and survival of GCWAs on the Balcones Canyonland Preserve by color banding territorial males. One male was banded in 2021. Resighting efforts were continued to confirm banding status, color combinations and geographical positioning on a weekly basis.

Results

Observations: Fifty-nine observations were recorded during 21 site visits during season. Additional incidental observations were noted from Westcave Preserve staff from 6 March to 15 June 2021. Additional data was collected with each observation including date/time of detection, type of observation, sex, and coordinates. Survey efforts hours totaled approximately 40 hours and banding efforts approximately 5 hours. A single unbanded male was discovered deceased on the south side of the Westcave's visitor center on 4 April. The death was concluded to be from a window strike. The deceased male was donated to Texas A&M University for research purposes.

Number of Detections per visit in 2021

Site visit Date	23 March	30 March	6 April	8 April	9 April	13 April	15 April	21 April	22 April	23 April
# of Detections	6	8	3	1	5	1	1	1	1	1

Site visit Date	25 April	29 April	4 May	5 May	6 May	12 May	13 May	14 May	20 May	26 May	28 May
# of Detections	9	5	2	2	1	1	1	2	3	2	2

Territories: Four territories were established within the preserve during the breeding season. Of the four territories two were successful. Three hatch years were observed on May 12, May 19 represented by a male banded at Westcave in 2019 (pink/pink: red/silver). Three hatch years were also observed on May 20 represented by a female and a 2020 return banded male (dark green/red: dark blue/silver). Three territories were located along the eastern and northeastern side of the property, similar to the territories during the 2020 season. The one exception was an unbanded male that occupied the southern side of the property, claiming territory on both Westcave proper and the neighboring property across Hamilton Pool Road.

Literature cited

Bibby, C.J., N.D. Burgess, D.A. Hill, and S.H. Mustoe. 2000. Bird census techniques, second edition. London: Academic Press, Inc

2021 Cave Faunal Survey and Updated Invertebrate Information
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Hammett's Cave: In 2019, Westcave staff in collaboration with Travis County Natural Resources found over 25 species in Hammett's Cave during a faunal survey. One of the 25 species identified one was confirmed to be *Texella reddelli.* In the 2021 cave faunal survey 12 *Texella reddelli* individuals were identified.

2020 Spring, cave and stygofauna surveys

An assessment of springs and other karst features and their associated fauna were conducted by Crystal Datri, Jessica Gordon, and Peter Sprouse from July through September 2020 at Westcave Preserve. Researchers conducted a systematic search effort to identify, characterize, and map spring orifices and caves. Spring areas were searched for fauna, including invertebrates and neotenic Eurycea salamanders via visual searches of surface and subsurface habitat, grab sampling, and trapping. Researchers documented 19 springs and 4 caves (Datri, et. al). Multiple new records of groundwater invertebrates were obtained that await further taxonomic scrutiny. *Stygobromus russelli,* a species of concern, was identified in one of the four caves (Crystal Cave).

Literature cited

Datri, C, J. Gordon, P. Sprouse. 11 December 2020. Spring, Cave, and Stygofauna Investigations at Westcave Preserve, Travis County, Texas.