Rare Bird Surveys at Westcave Preserve

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1.0 INTRODUCTION

The Blanton & Associates, Inc. Team (B&A Team), composed of Blanton & Associates, Inc., and Turner Collie & Braden Inc., was contracted by the Lower Colorado River Authority (LCRA) to perform rare bird surveys on Westcave Preserve for the 2001 nesting year. The Westcave Preserve totals 27 acres and is located off Hamilton Pool Road (FM 3238) near Hammett's Crossing along the Pedernales River in Western Travis County (**Figure 1**). The purpose of the surveys was to estimate territory boundaries of golden-cheeked warblers (*Dendroica chrysoparia*) (GCWA) using the site. The B&A Team performed six site visits between March 20 and May 15. Using the data collected, it is estimated that six male GCWAs used Westcave Preserve for nesting territories in 2001.

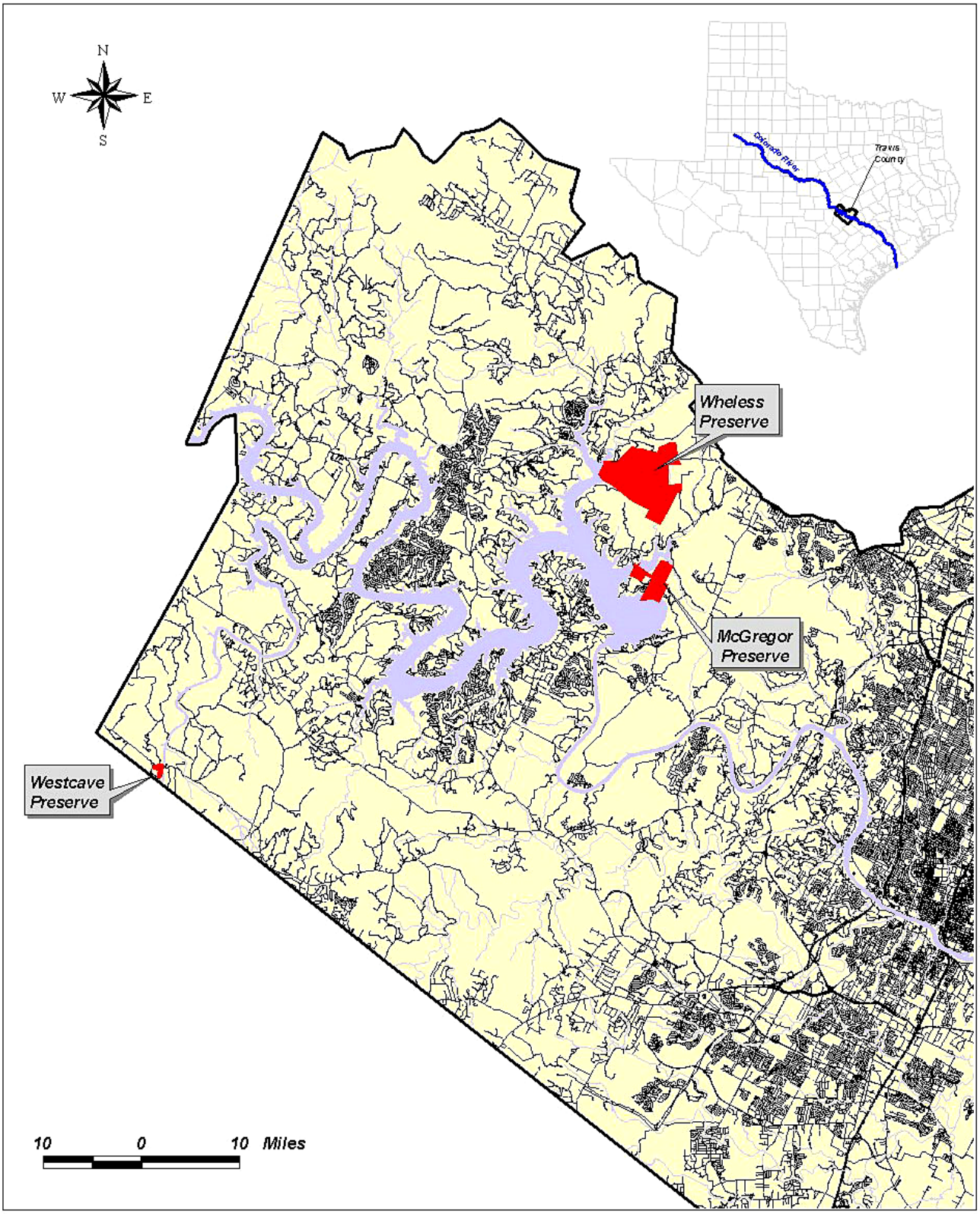
The purpose of this effort was to satisfy the LCRA's requirements under the Balcones Canyonlands Conservation Plan to monitor rare bird activity on selected tracts within the Balcones Canyonlands Preserve system. In this case, monitoring focused solely on territory mapping for GCWAs and did not address habitat quality, habitat quantity, or the productivity of the site. The report includes the following:

2.0 Brief discussion of the survey objectives
3.0 Methods used for surveying and estimating territory boundaries
4.0 General habitat description
5.0 Presentation and brief discussion of the findings, including additional information not associated with the target species
6.0 Recommendations

Figures include a general location map and a digital orthophoto map delineating estimated rare bird territories.

2.0 SURVEY OBJECTIVES

Westcave Preserve is managed by the Westcave Preserve Foundation and the LCRA to protect habitat for GCWAs under the requirements of the Balcones Canyonlands Conservation Plan. An environmental education center is planned for the site in 2001-2002. The monitoring of bird activity in the proposed construction area was an important component of the 2001 surveys. Another objective of the survey was to assist LCRA's efforts by recording rare bird activities within preserve boundaries in order to estimate the number of GCWA territories on the property. LCRA requested surveys to be performed



Endangered Bird Survey Locations **Figure 1**

throughout the entirety of the preserve. No habitat assessments or vegetation characterizations were performed for this survey.

3.0 METHODS

3.1 Survey Methods

The B&A team surveyed the entire 27 acres of the site for GCWAs. Using the protocol established by the U.S. Fish and Wildlife Service (USFWS) in *Minimum Procedures for Determining the Presence/Absence of Golden-cheeked Warblers and Black-capped Vireos* (1999) and by Bibby *et al.* in *Bird Census Techniques* (1992), the B&A Team surveyed the three plots for GCWAs during six visits between March 20 and May 15.

One biologist from the B&A Team surveyed the preserve in five of the six visits. One visit was conducted by two biologists, with one biologist surveying canyon areas and the other surveying upland areas. Vocalization times were recorded in order to discern the number of birds using the site. The total number of survey hours spent at Westcave for the year 2001 is provided in **Table 3-1**, along with the number of surveyors and survey dates.

Table 3-1 Total Survey Time

Field Visit No.	Date	Survey Time x No. of Surveyors	Total Survey Hrs (Rounded)
1	3-30-01	3 hours 10 minutes x 1	3.25 hours
2	4-06-01	3 hours 10 minutes x 1	3.25 hours
3	4-12-01	3 hours 45 minutes x 2	7.50 hours
4	4-16-01	4 hours 10 minutes x 1	4.25 hours
5	4-25-01	3 hours 5 minutes x 1	3.00 hours
6	5-04-01	3 hours 45 minutes x 1	3.75 hours
Total Survey Time			***25.00 hours***

Biologists surveyed the 27-acre site in its entirety. They recorded locations of GCWAs by varying the route traveled each visit and by listening for characteristic calls of each species. As requested by LCRA, no recorded GCWA calls were played during the survey. Sight verification was attempted when the target birds were heard within the preserve boundaries. Flagging was tied to vegetation or fence posts in these locations when possible in order to facilitate global positioning system (GPS) mapping of the territory boundaries, which would occur at a later date. Movements of each male and counter-singing between birds were noted in order to validate the number and location of territories on the preserve.

Symbols used for mapping and record keeping followed information presented in *An International Standard for a Mapping Method in Bird Census Work Recommended by the International Bird Census Committee* (1970) in Audubon Field Notes 24(6):722-726. The information gathered from each visit is presented in attached Field Information Forms (**Appendix A**), and bird locations and field observations are plotted on a digital orthophoto map (**Section 5.0**, **Results and Discussion**).

Throughout the course of the surveys, the biologists recorded additional points of interest such as unique biological features, rare plants and animals (in addition to the target species), and any unauthorized trespass tracks/activities observed. These additional points of interest are presented in **Section 5.1, Additional Information**, and in the attached Field Information Forms.

3.2 Territory Estimation Methods

After all surveys were completed, maps and notes for each site visit were consolidated in order to delineate territories and estimate the number of males for each species. The methods used to evaluate territory boundaries were taken from protocol provided in *An International Standard for a Mapping Method in Bird Census Work Recommended by the International Bird Census Committee* (1970) in Audubon Field Notes 24(6):722-726.

Using GPS units provided by the LCRA survey and mapping staff, the team went back to the site, located flags left during the season, and recorded data points to estimate territory boundaries. The data points are intended to "ground-truth" the placement of observations on field maps and to provide the LCRA with a management tool for more accurately depicting the location of rare bird activity.

4.0 GENERAL HABITAT DESCRIPTION

The Westcave Preserve totals 27 acres and is located off Hamilton Pool Road (FM 3238) near Hammett's Crossing along the Pedernales River in Western Travis County. The upland area of the preserve is a grassland savannah with stands of Ashe juniper (*Juniperus ashei)* and live oak (*Quercus fusiformis*). The grotto area and pool lie on the western edge of the property. A deeply incised canyon runs east from the grotto to the Pedernales River. The vegetation in the canyon includes bald cypress (*Taxodium distichum*), Texas oak (*Q. texana*), cedar elm (*Ulmus crassifolia*), live oak, and black willow (*Salix nigra*). The grotto and creek

had water at all times. The river was full early in the season but began to dry late in the season.

5.0 RESULTS AND DISCUSSION

Typical nesting habitat for the GCWA can be found throughout the entire property. Tall, dense, mature stands of Ashe juniper mixed with trees such as Texas oak, shin oak (*Q. sinuata* var. *breviloba*), live oak, Texas ash (*Fraxinus texensis*), cedar elm, and hackberry (*Celtis laevigata*) provide prime habitat for GCWAs. Historically, both the riparian vegetation and the savannah have been utilized by GCWA for nesting and foraging.

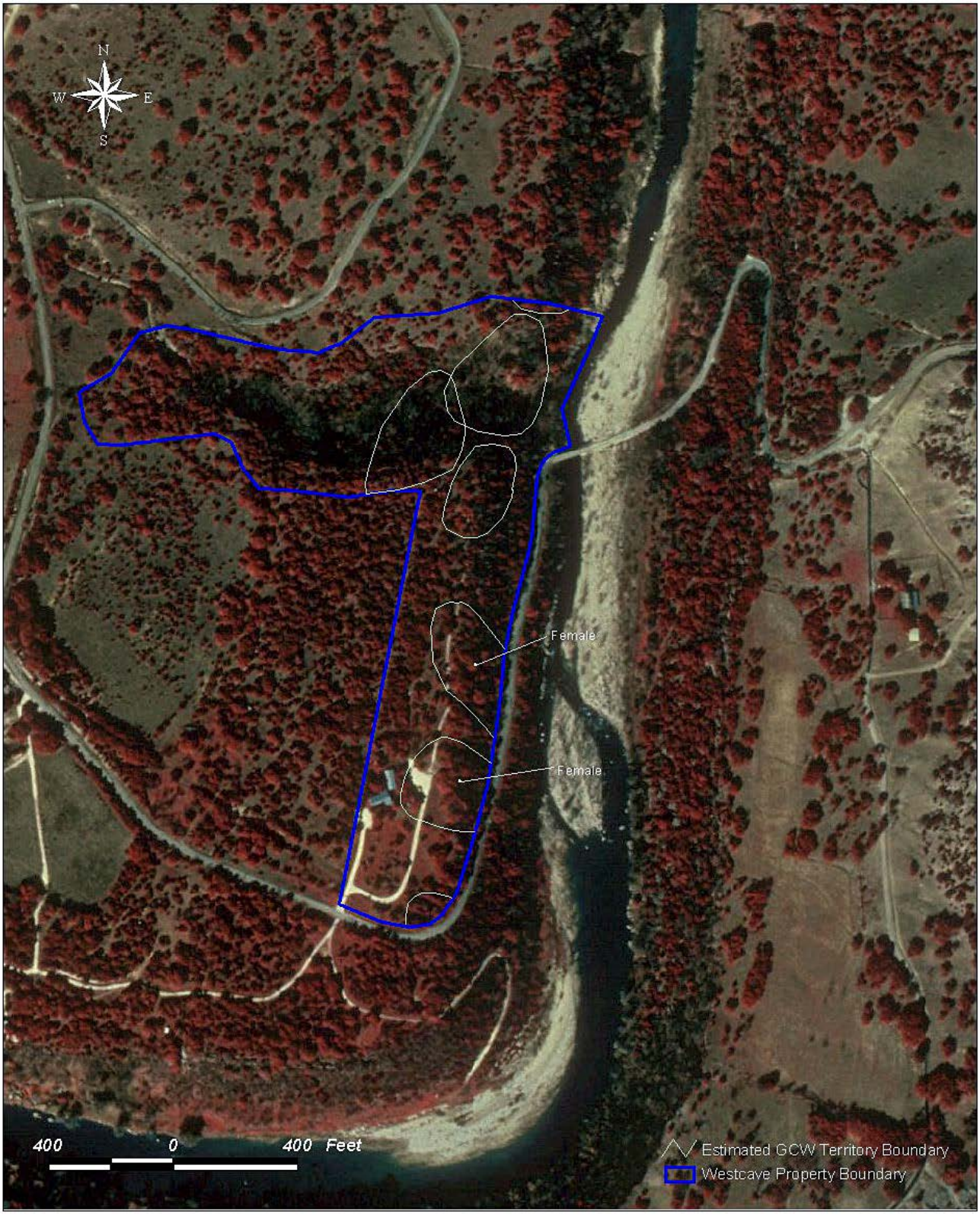
Six visits (25.0 hours) were spent surveying Westcave Preserve. Six male GCWAs were observed on the preserve (**Table 5.1**). Approximate territory boundaries are noted in **Figure 2**. Three male GCWAs were located outside the study area boundary and were not monitored; however, these contacts are noted in the Field Information Forms. Two females and no fledglings were observed during the season. However, since the LCRA directed that no additional time would be spent on nest and productivity data, this number should not be used to estimate the productivity of the preserve.

Table 5-1 Golden-cheeked Warbler Territories on Westcave Preserve

Number of Male Territories Completely on Preserve	3
Number of Male Territories Partially on Preserve	3
Total Number of Male Territories on Preserve	*6*
Number of Males Off Preserve	3
Number of Females Observed	2
Number of Juveniles Observed	0

GCWAs were observed using the area proposed as the construction site for the environmental education center. Territories (three observed) in this vicinity appear to utilize a small portion of the savannah (i.e., the proposed construction area), a portion of the dense strip of vegetation between the preserve road and Hamilton Pool Road, and an undetermined portion of the dense vegetative strip adjacent to the Pedernales River (**Figure 2**). According to observations made during the 2001 nesting season, GCWA males used the densely vegetated areas more frequently than the savannah area. No negative impacts to the species are anticipated as a result of the construction of the center. The B&A Team recommends minimizing impacts to the GCWA by performing all construction outside of the GCWA breeding season. The team also recommends that the LCRA perform GCWA surveys during

construction (if any construction activities occur during nesting season) and for three years after construction in order to record changes in GCWA utilization of the site.



Estimated Golden-cheeked Warbler Territory Boundaries **Figure 2**
Wheless Unit 1

5.1 Additional Information

As outlined in the scope of work for this project, the B&A Team agreed to notify appropriate LCRA staff of unauthorized trespass tracks/activities on the preserve study areas. No such tracks or activities were observed on the property during the survey. Besides the target species, no additional endangered or threatened species were observed on the property. A list of bird species observed during field surveys is provided in **Appendix A**.

6.0 RECOMMENDATIONS

- No additional management for GCWAs is recommended at this time.

- If surveys for territory mapping are performed in subsequent years, the B&A Team recommends the following: 1) The use of hand-held GPS units *during* the surveys instead of following the completion of the season. The team feels that this would provide a higher level of accuracy for territory mapping and would alleviate the need for additional visits. 2) Because there were no banded birds observed, there was some difficulty in distinguishing between birds when no counter-singing was heard. For future surveys, the team recommends surveying the entire preserve in teams while using radios to relay bird locations. This method might be a more accurate means for locating and counting bird territories. 3) The B&A Team suggests that more time should be allotted for gathering information on fledgling activities. Because dispersing fledglings sometimes use upland and grassland areas for foraging, it may be beneficial for management purposes to research these movements whenever a fledgling group is discovered.

APPENDIX A

Field Information Forms

Birds Observed during 2001 Field Surveys - Westcave Preserve

American Robin	*Turdus migratorius*
Ash-throated Flycatcher	*Myiarchus cinarascens*
Black and White Warbler	*Mniotilta varia*
Black Vulture	*Coragyps atratus*
Bewick's Wren	*Thryomanes bewickii*
Blue-gray Gnatcatcher	*Polioptila caerulea*
Brown-headed Cowbird	*Molothrus ater*
Carolina Chickadee	*Parus carolinensis*
Carolina Wren	*Thryothorus ludovicianus*
Cedar Waxwing	*Bombycilla cedrorum*
Chihuahua Raven	*Corvus cryptoleucus*
Chimney Swift	*Chaetura pelagica*
Eastern Phoebe	*Sayornis phoebe*
Field Sparrow	*Spizella pusilla*
Golden-crowned Kinglet	*Regulus satrapa*
Greater Roadrunner	*Geococcyx californianus*
House Finch	*Carpodacus mexicanus*
Indigo Bunting	*Passerina cyanea*
Lesser Goldfinch	*Carduelis psaltria*
Northern Cardinal	*Cardinalis cardinalis*
Northern Mockingbird	*Mimus polyglottus*
Painted Bunting	*Passerina cirus*
Red-bellied Woodpecker	*Melanerpes carolinus*
Ruby-crowned Kinglet	*Regulus calendula*
Red-eyed Vireo	*Vireo olivaceus*
Ruby-throated Hummingbird	*Archilochus colubris*
Rufous-crowned Sparrow	*Aimophila ruficeps*
Red-shouldered Hawk	*Buteo lineatus*
Rufous-sided Towhee	*Pipilo erythophthalmus*
Red-tailed Hawk	*Buteo jamaicensis*
Scrub Jay	*Aphelocoma coerulescens*
Summer Tanager	*Pirangua rubra*
Tufted Titmouse	*Parus bicolor*
Turkey Vulture	*Cathartes aura*
White-eyed Vireo	*Vireo griseus*
Wood Thrush	*Hylocichla mustelina*