Rare Bird Surveys at the Wheless Tract

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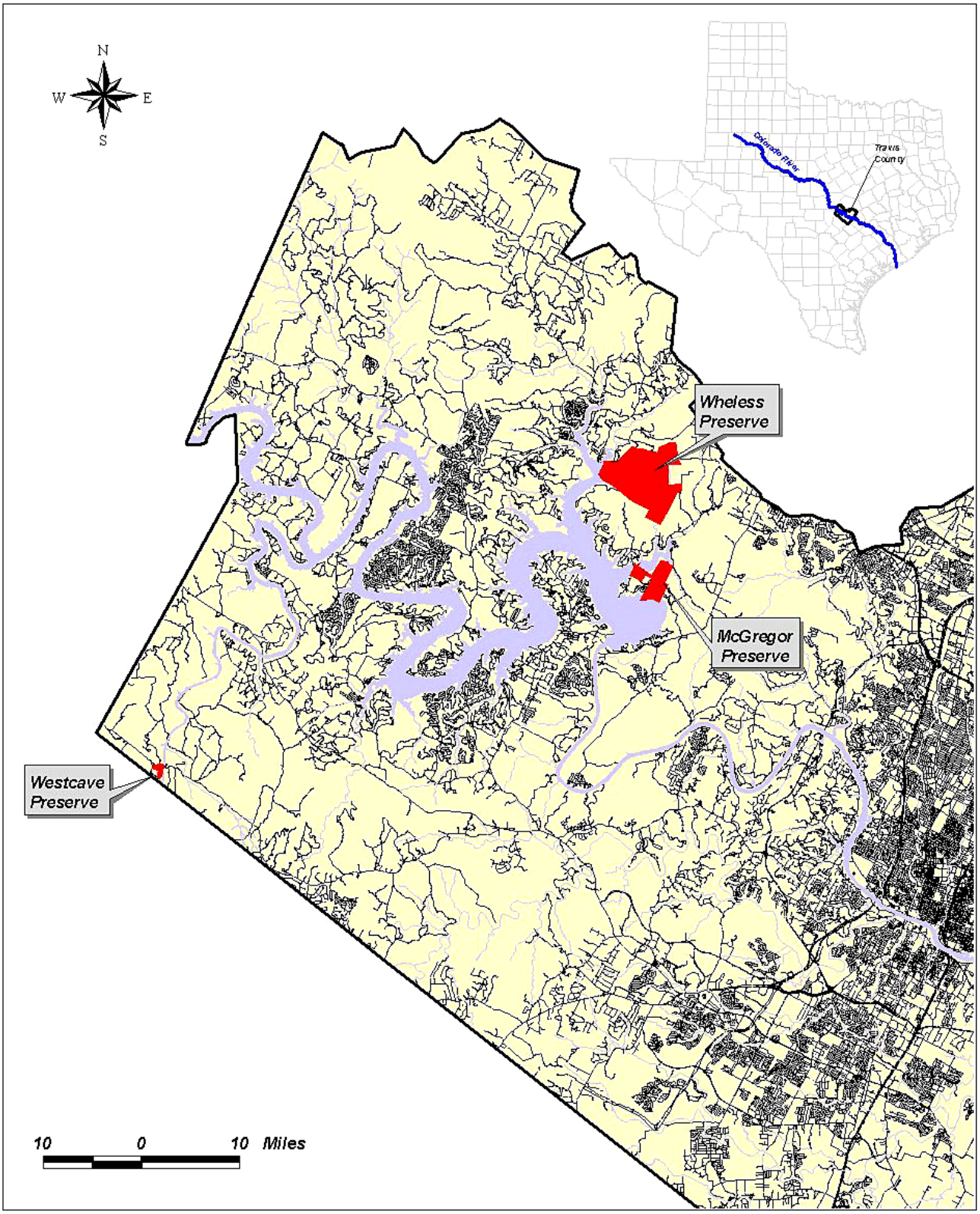
1.0 INTRODUCTION

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 for three plots on the Wheless Tract for the 2001 nesting year. The Wheless Tract lies on the north side of Lake Travis off Lime Creek Road (RM 2769) near Sandy Creek Park in Travis County (**Figure 1**). Under a management agreement with the Balcones Canyonlands Conservation Plan, LCRA monitors the three 100-acre plots to determine GCWA activity; therefore, the purpose of the surveys was to estimate territory boundaries of golden-cheeked warblers (*Dendroica chrysoparia*) (GCWA) utilizing each plot. The B&A Team performed eight site visits on each plot between March 20 and May 16 in 2001. Using the data collected, it is estimated that seven male GCWAs utilized Plot #1, 12 male GCWAs utilized Plot #2, and 14 male GCWAs utilized Plot #3 for nesting territories. To avoid confusion when counting bird territories that fell on both Plot #1 and Plot #3, these birds were counted as birds using Plot #1 only. A total of 21 GCWAs were observed on Plot #1 and Plot #3.

For the purposes of this survey, monitoring focused solely on territory mapping for GCWAs and did not address habitat quality or 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 digital orthophoto maps delineating estimated rare bird territories.



Endangered Bird Survey Locations **Figure 1**

2.0 SURVEY OBJECTIVES

The Wheless Tract is a component of the Balcones Canyonlands Preserve system and therefore subject to the requirements of the Balcones Canyonlands Conservation Plan. The LCRA is required to monitor rare bird recovery on the tract. The objective of the survey was to assist LCRA's efforts by recording rare bird activities within tract boundaries in order to estimate the number of GCWA territories on each of the three plots. LCRA requested surveys to be performed throughout each plot. No habitat assessments or vegetation characterizations were performed as a part of this survey.

3.0 METHODS

3.1 Survey Methods

Of the total 2,300 acres comprising the Wheless Tract, one 100-acre study plot is monitored by the LCRA as a representative example of prime habitat (Plot #2), and one 100-acre study plot is monitored as emerging habitat (Plot #1). A third area (Plot #3), which is adjacent to Plot #1, includes approximately 238 acres, a portion of which is proposed black-capped vireo (*Vireo atricapillus*) habitat restoration area. 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 eight visits to each site between March 20 and May 16.

For survey purposes, two biologists from the B&A Team divided each plot in half and surveyed the same side on each visit. The total number of survey hours spent on Wheless Plots #1 and #3 for the year 2001 is provided in **Table 3-1**, along with the number of surveyors and survey dates. Plots #1 and #3 are located adjacent to each other and were surveyed simultaneously; therefore, survey hours were combined. In order to calculate the total survey hours for each separate plot, the total survey hours for the combined plot were divided in half.

Table 3-1 Total Survey Time on Wheless Plots #1 & #3

Field Visit No.	Date	Survey Time x No. of Surveyors	Total Survey Hrs (Rounded)
1	3/23/01	3 hours 24 min x 2	6.75 hours
2	4/02/01	4 hours 15 minutes x 2	8.50 hours
3	4/10/01	4 hours 27 minutes x 2	8.75 hours
4	4//25/01 (KT) 4/27/01 (KRJ)	4 hours 13 minutes x 1 4 hours 10 minutes x 1	8.50 hours
5	5/01/01	8 hours 35 minutes x 1	8.50 hours
6	5/08/01	3 hours 59 minutes x 2	8.00 hours
7	5/11/01 (KT) 5/14/01(KRJ)	3 hours 15 minutes x 1 4 hours 26 minutes x 1	7.75 hours
8	5/14/01 (KRJ) 5/16/01 (KT)	4 hours 26 minutes x 1 4 hours 25 minutes x 1	8.75 hours
		Total Survey Time for Plot #1 ***Total Survey Time for Plot #3***	***32.75 hours*** ***32.75 hourss***

The total number of survey hours spent on Wheless Plot #2 for the year 2001 is provided in **Table 3-2**, along with the number of surveyors and survey dates.

Table 3-2 Total Survey Time on Wheless Plot #2

Field Visit No.	Date	Survey Time x No. of Surveyors	Total Survey Hrs (Rounded)
1	3/23/01	2 hours 15 minutes x 2	4.50 hours
2	4/02/01	2 hours 10 minutes x 2	4.25 hours
3	4/10/01	4 hours 10 minutes x 1	4.25 hours
4	4/18/01	4 hours 10 minutes x 1	4.25 hours
5	4/25/01	2 hours 29 minutes x 2	5.00 hours
6	5/08/01	2 hours 16 minutes x 2	4.50 hours
7	5/09/01	4 hours 6 minutes x 1	4.00 hours
8	5/11/01 (KRT) 5/14/01 (KT)	3 hours 20 minutes x 1 2 hours 2 minutes x 1	5.25 hours
		Total Survey Time	***36.00 hours***

Biologists surveyed each plot in its entirety and recorded locations of GCWA by varying the route traveled and by listening for characteristic calls of the species. As requested by LCRA, no recorded GCWA calls were played during the surveys. Sight verification was attempted

when GCWAs were heard within the plot boundaries. Flagging was tied to vegetation or fence posts in these locations when possible 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 tract.

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 were plotted on digital orthophoto maps (**Section 5.1**, **Golden-cheeked Warbler**).

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 5.2, 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 male GCWAs. 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 Wheless Tract lies on the north side of Lake Travis off Lime Creek Road (RM 2769) near Sandy Creek Park in Travis County. Plots #1 and #3 abut the northern boundary of the tract, and Plot #2 abuts the eastern edge of the tract. Vegetation on the tract ranges from

Ashe juniper-deciduous woodland ravines and slopes to grassy meadow uplands. All drainages were intermittent except for the drainage along the western edge of Plot #2. This drainage consistently had flowing water.

5.0 RESULTS AND DISCUSSION

5.1 Golden-cheeked Warbler

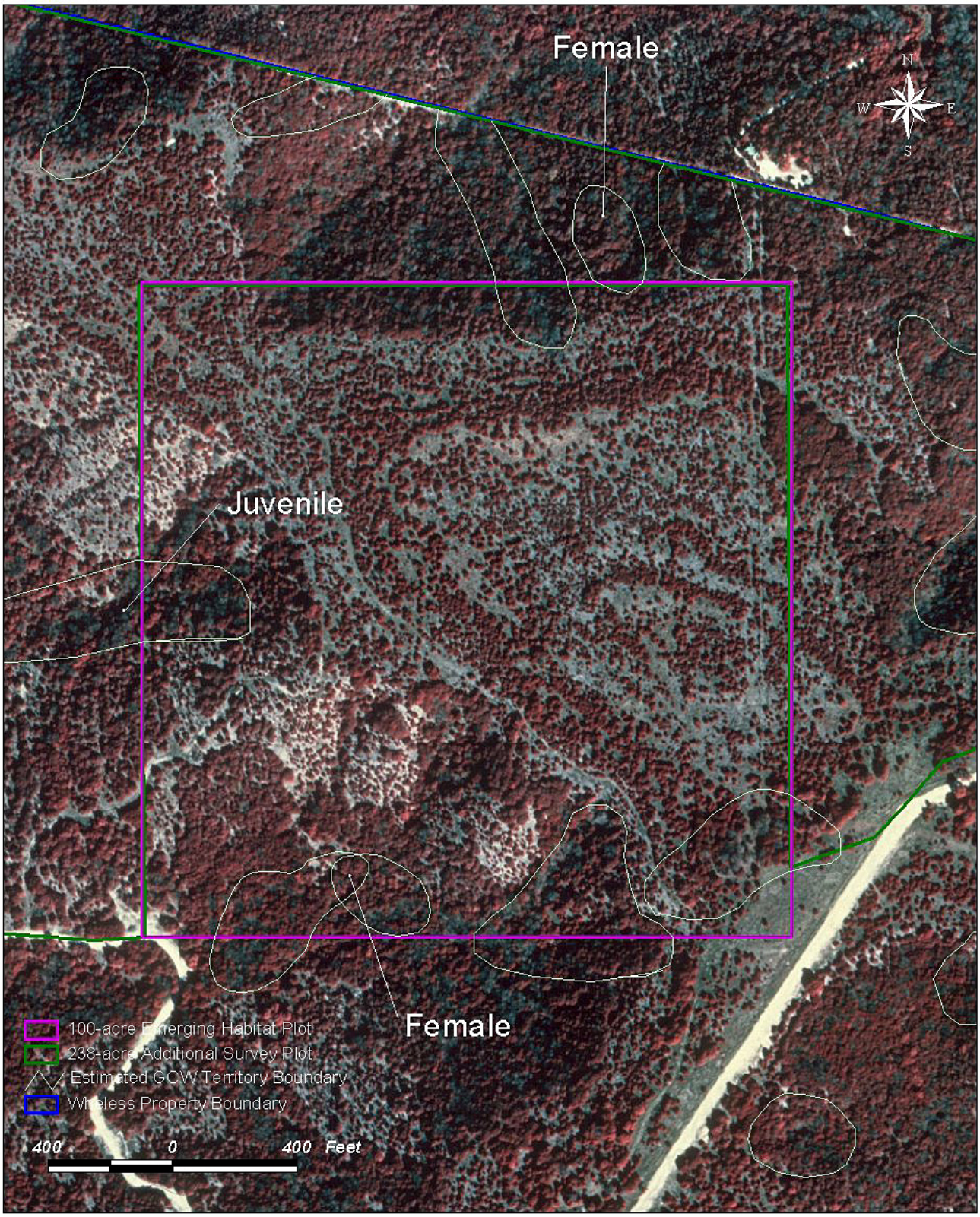
Plot #1 – Plot #1 is characterized as emerging GCWA habitat in LCRA's management agreement under the Balcones Canyonlands Conservation Plan. The center of the plot can be described as an Ashe juniper-savannah interspersed with stands of live oak and other deciduous trees. The perimeter of the plot is incised by steep canyons covered with dense, mature stands of Ashe juniper (*Juniperus ashei*) mixed with trees such as Texas oak (*Quercus texana*), shin oak (*Q. sinuata var. breviloba*), live oak (*Quercus fusiformis*), Texas ash (*Fraxinus texensis*), cedar elm (*Ulmus crassifolia*), and hackberry (*Celtis laevigata*).

Eight visits (32.75 hours) were spent surveying Plot #1. Six GCWA territories were mapped on the plot (**Table 5.1**). Approximate territory boundaries are noted in **Figure 2**. Two male GCWAs were heard outside of Plot #1 and #3 boundaries within the preserve but were not monitored; however, these contacts are noted in the Field Information Forms and also on Table 5-1 under Plot #1 results. Two females and one juvenile were observed using the plot during the nesting season. However, since the LCRA directed that no additional time would be spent on nest and productivity data, this number should not be utilized to estimate the productivity of any of the plots.

Table 5-1 Golden-cheeked Warbler Territories on Plot #1

Number of Male Territories within Plot Boundary	1
Number of Male Territories Partially on Plot	6
Total Number of Male Territories on Plot	*7*
Number of Males Off Plot	2
Number of Females Observed	2
Number of Juveniles Observed	1

Plot #2 – This plot is characterized as prime GCWA habitat in LCRA's management agreement under the Balcones Canyonlands Conservation Plan. Supporting this characterization, GCWA territories were evenly distributed throughout the property, and nesting activity was observed on several visits.



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

Eight visits (36.0 hours) were spent surveying Plot #2. Twelve GCWAs were observed using the plot (**Table 5.2**). Approximate territory boundaries are noted on **Figure 3**. Three male GCWAs were heard outside the plot boundary but not monitored; however, these contacts are noted in the Field Information Forms. Four females, six fledglings, and one nest, which produced five of the six fledglings, were observed on the plot, and one female was observed off the plot.

Table 5-2 Golden-cheeked Warbler Territories on Plot #2

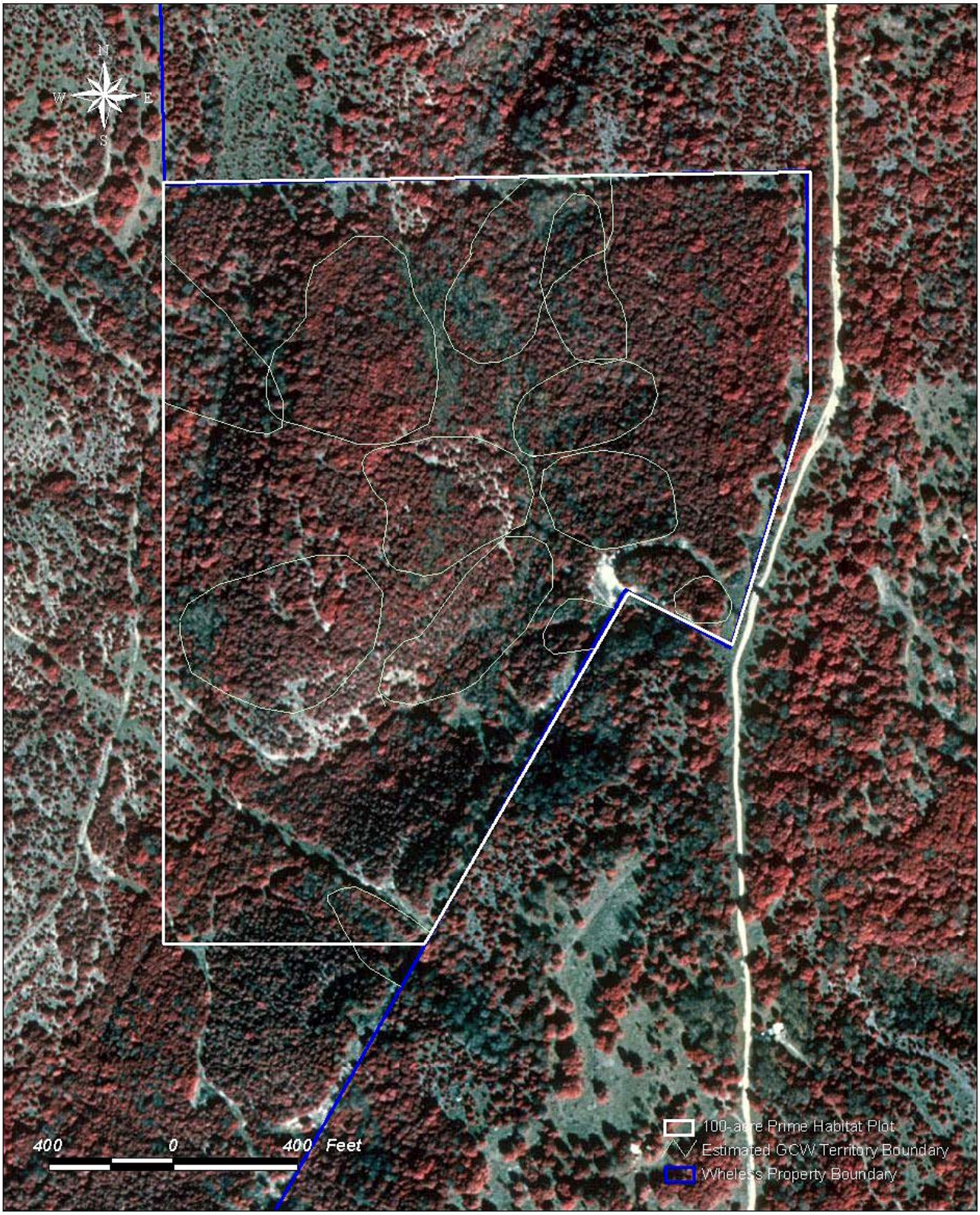
Number of Male Territories within Plot Boundary	8
Number of Male Territories Partially on Plot	4
Total Number of Male Territories on Plot	*12*
Number of Males Off Plot	3
Number of Females Observed	4
Number of Juveniles Observed	6

Plot #3 – This plot was chosen to determine GCWA activity near a proposed black-capped vireo restoration area. The vegetation on Plot #3 consists of Ashe juniper-savannah uplands surrounded by deeply incised canyons covered with a continuous canopy woodland of Ashe juniper, Texas oak, shin oak, live oak, cedar elm, and hackberry. Historically cleared slopes on the western edge of the property can also be characterized as Ashe juniper-savannah; no GCWAs were observed utilizing this area.

Eight visits (32.75 hours) were spent surveying Plot #3. Fourteen GCWAs were observed using the plot (**Table 5.3**). Approximate territory boundaries are noted on **Figure 4**. No male GCWAs were located outside the study area boundary. Two females and four fledglings were observed during the season. One nest, which produced three of the four fledglings, was observed on the plot.

Table 5-3 Golden-cheeked Warbler Territories on Plot #3

Number of Male Territories within Plot Boundary	10
Number of Male Territories Partially on Plot	4
Total Number of Male Territories on Plot	*14*
Number of Males Off Plot	0
Number of Females Observed	2
Number of Juveniles Observed	4



Estimated Golden-cheeked Warbler Territory Boundaries **Figure 3**
Wheless Unit 2

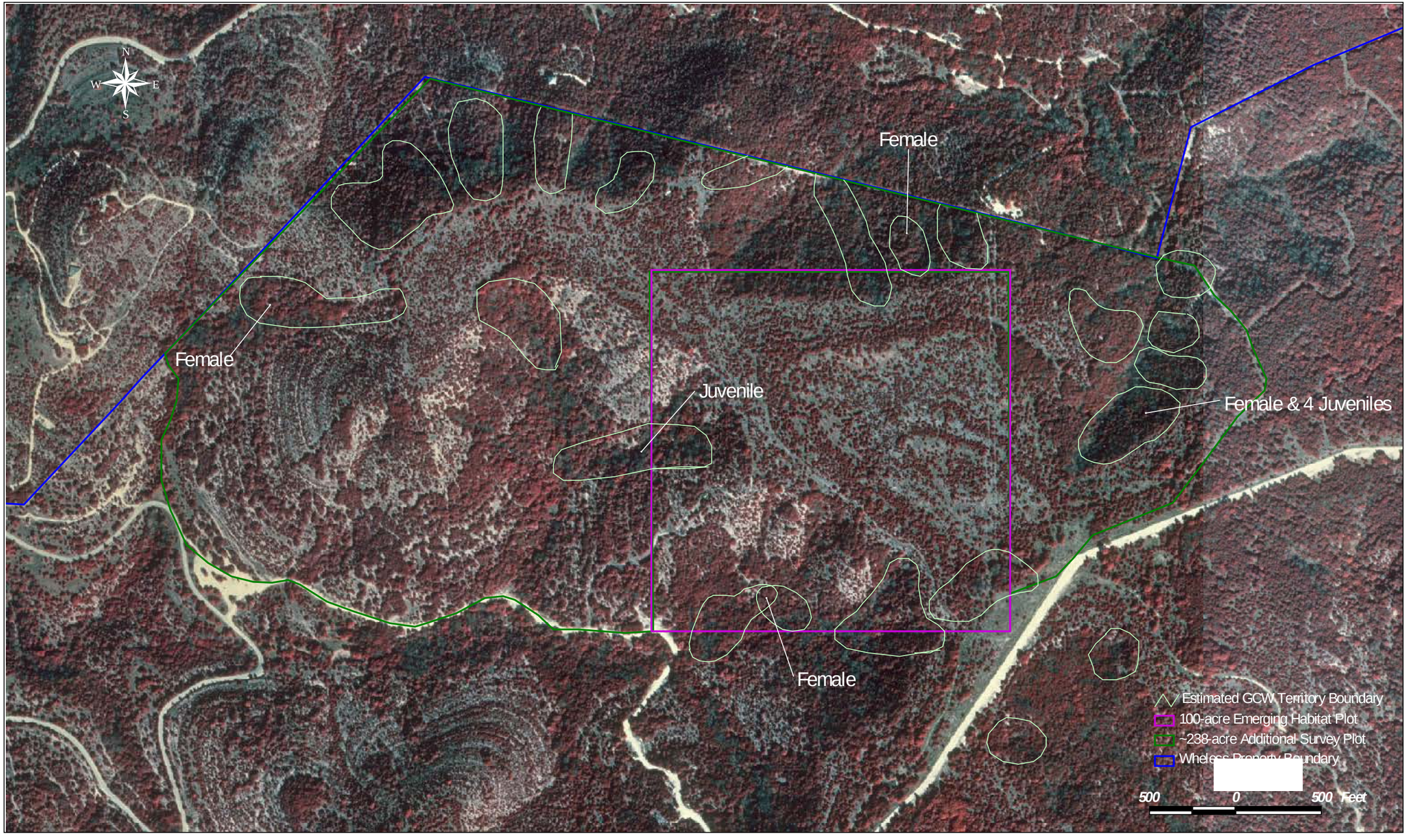


Figure 4

Estimated Golden-cheeked Warbler Territory Boundaries
Wheless Units 1 & 3

5.2 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. As reported, several gunshots were heard to the south of Plot #2. On the eastern edge of Plot #3, loose dogs were seen and heard on several occasions; however, the dogs never became aggressive toward surveyors. One adult coyote was observed in this area on one occasion. Several mountain bike trails follow the uplands on Plot #1 and #3; however, no mountain bikers were ever observed during surveys. Besides the target species, no additional endangered or threatened species were observed on the property. A dry karst feature large enough for a medium-sized mammal to enter (as evidenced by the goat skull that had been dragged inside) was found in the main drainage running parallel to the western edge of Plot #1. A second interesting karst feature was found in the drainage extending from Plot #1 into Plot #3, intersecting with the drainage mentioned above. This feature had a number of solution holes surrounded by maidenhair ferns and mosses, and on several occasions water was observed pouring out of these openings. 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) In 2001, the B&A Team divided the subject plots in half and surveyed each half separately. 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 plots 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*

Birds Observed during 2001 Field Surveys - Wheless Plot #1 & #3

Black and White Warbler	*Mniotilta varia*
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*
Downey Woodpecker	*Piciodes pubescens*
Field Sparrow	*Spizella pusilla*
Great-crested Flycatcher	*Myiarchus crinitus*
Golden-crowned Kinglet	*Regulus satrapa*
Greater Roadrunner	*Geococcyx californianus*
House Finch	*Carpodacus mexicanus*
Lesser Goldfinch	*Carduelis psaltria*
Northern Cardinal	*Cardinalis cardinalis*
Northern Mockingbird	*Mimus polyglottus*
Painted Bunting	*Passerina cirus*
Purple Martin	*Progne subis*
Red-bellied Woodpecker	*Melanerpes carolinus*
Ruby-crowned Kinglet	*Regulus calendula*
Ruby-throated Hummingbird	*Archilochus colubris*
Rufous-crowned Sparrow	*Aimophila ruficeps*
Scrub Jay	*Aphelocoma coerulescens*
Summer Tanager	*Pirangua rubra*
Tufted Titmouse	*Parus bicolor*
Wild Turkey	*Meleagris gallopavo*
Turkey Vulture	*Cathartes aura*
White-eyed Vireo	*Vireo griseus*