FINAL REPORT

SURVEYS OF LCRA LANDS AT MCGREGOR PRESERVE FOR THE ENDANGERED GOLDEN-CHEEKED WARBLER – 2009



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1.0 Introduction

Surveys were conducted to investigate the status of the golden-cheeked warbler (*Dendroica chrysoparia*, GCWA) on McGregor Preserve during the breeding season. The purpose of this survey was to monitor the existing population as a managing partner of the Balcones Canyonlands Conservation Plan (BCCP).

2.0 Background Information

The McGregor Preserve is a 363-acre tract owned by the Lower Colorado River Authority (LCRA) and a part of the Balcones Canyonlands Preserve system set aside for GCWAs. The preserve is located on the east side of Lake Travis, north of Hippie Hollow and Comanche Trail and south of the Cypress Creek Arm of the lake. Residential developments border the west side and now most of the east side. A wooded tract that is also managed for the GCWA and owned by Travis County, borders the preserve on its northeastern corner.

Prior surveys at McGregor were conducted in 1992, 1993, 1994, 1996, 2000, 2001, 2004, 2005, 2006 and 2007. The habitat is listed as BCCP Zone 1 or prime habitat for the federally and state listed endangered golden-cheeked warbler and is an important contributing area of foraging, nesting and breeding habitat.

3.0 Golden-cheeked Warbler Information

The GCWA is a small songbird 4.5-5 inches long, with a wingspan of approximately 7.9 inches. The GCWA is an insectivorous bird and males are easily distinguished by their yellow cheeks with a black eye stripe; black cap, back and throat. Females are similar in appearance but not as brightly colored. Both sexes have bellies and flanks that are white with black streaks (USFWS 1992).

The GCWA is a neotropical migrant and winters in the pine-oak woodlands found in southern Mexico, Honduras, Nicaragua and Guatemala while nesting/breeding habitat is found exclusively in the oak-juniper woodlands of the Texas Hill country. Its entire nesting/breeding range is confined to 33 counties within central Texas. Typical nesting habitat is found in tall, thick, mature stands of Ashe juniper (*Juniperus ashei*) mixed with deciduous trees such as Texas red oak (*Quercus buckleyi*), Lacey oak (*Quercus glaucoides*), white shin oak (*Quercus sinuata* var. *breviloba*), plateau live oak (*Quercus fusiformis*), post oak (*Quercus stellata*), Texas ash (*Fraxinus texensis*), cedar elm (*Ulmus crassifolia*), netleaf hackberry (*Celtis reticulata*), bigtooth maple (*Acer grandidentatum*), American sycamore (*Platanus occidentalis*), Arizona walnut (*Juglans major*), escarpment cherry (*Prunus serotina*),

and pecan (*Carya illinoinensis*). This type of woodland is often found in relatively moist areas such as steep-sided canyons and slopes. GCWAs are also occasionally found in drier, upland juniper-oak (live oak, post oak, blackjack oak (*Quercus marilandica*) woodlands over flat topography, rather than the typical canyons. Although the composition of woody vegetation may vary from place to place, Ashe juniper is a necessary component for nest construction and is always present.

The males arrive in early March in Texas, and begin to establish breeding territories. The GCWA males will defend against other males by singing from visible perches within their territories. The females arrive a few days later but are more difficult to detect in the dense woodland habitat. Usually three or four eggs are laid. The average nest height is 5 m (16.4 ft) above ground. Eggs are generally incubated in April and, unless there is a second nesting attempt, nestlings fledge in May to early June. By early August, GCWAs begin their migration south.

Most studies report GCWA territory sizes ranging from 0.09 to 0.21 pairs per acre (Ladd 1985). Wahl et al. (1990) reported that density estimates ranged from zero to 0.26 pairs per acre with a median of 0.06 pairs per acre among several sites throughout the GCWA's range. Pulich (1976) classified warbler habitat into excellent, average, and marginal corresponding to five, two, and one pair per 100 acres.

The primary threats to the GCWA are habitat loss and urban encroachment. Other factors include the loss of deciduous oaks (used for foraging) to oak wilt, nest parasitism by brown-headed cowbirds *(Molothrus ater)*, and predation and competition by blue jays (*Cyanocitta cristata*) and other urban-tolerant birds (USFWS 1992).

4.0 Methodology

Surveys were conducted beginning April 6th and completed May 27th. Each study area was visited a minimum of five times with each visit to the property no fewer than five days apart. The surveys were performed by federally-permitted wildlife biologists by hiking slowly along roughly pre-determined routes, seeking potential habitat, and listening for GCWA vocalizations. Territories were mapped. At all locations where GCWAs were detected, notes were recorded including the following:

1. approximate distance from detection point to actual GCWA location (if the actual location couldn't be determined)
2. vocalization specifics
3. GCWA movement and behavior
4. other related information

Summaries of these field notes are included in the Survey Data Tables for the property and are located within the Results and Discussion section. Efforts were made to also make visual confirmation at each detection site. Taped playback of GCWA vocalizations to determine presence or absence was not necessary because GCWA presence was readily established throughout the property. Field notes were taken during each site visit (see Appendix). Photographs were taken primarily at detection locations to demonstrate habitat type and quality. A list of other bird species seen or heard while conducting GCWA surveys were also noted (Table 2).

5.0 Study Area

McGregor consists of steep hillsides and canyons with some moderate slope and level areas on the hilltops and valley floors. Some karst features are present, but all features that have been surveyed except for one, are considered epi-karst. Most of the land is heavily forested, the main three components being juniper (*Juniperus ashei*, cedar), live oak (*Quercus fusiformis*) and red oak (*Quercus buckleyi*, Texas oak). Some of the more exposed slopes are semi-open with small trees, most likely a result of the thin soil and harsh conditions.

The majority of the property (80%) can be considered prime or Zone 1 habitat for the GCWA with some of the remaining area as foraging habitat.

6.0 Results & Discussion

Surveys were conducted between April 26th and May 27th following BCCP survey protocol. Two, 100-acre plots were surveyed at territory level, one that represented prime habitat and one that represented transitional habitat. Daily territories were surveyed and located at each visit (2009 FWS territory level survey protocol) with the time being divided evenly between the plots.

Thirteen positive GCWA detections were determined after a results analysis for the Prime Habitat plot (Figure 1). Each survey date resulted in a minimum of 5 detections within this plot. During one survey, a male was observed singing the C song. Multiple males and females were seen foraging in the Prime Habitat plot. The Transitional Habitat plot resulted in five territories that were located.

7.0 Recommendations

With the growing development of the Texas Hill Country, it is increasingly important that preserves and green space in western Travis County are protected, whether through the BCCP or privately managed. As development increases, use of these areas by GCWAs should continue to rise. Active management of these preserves is

also a key element and regular surveys are a management requirement for BCCP partners.

8.0 Literature Cited

Ladd, C.G. 1985. Nesting habitat requirements of the golden-cheeked warbler. MS thesis. Southwest Texas State University, San Marcos, Texas. 65pp.

Pulich, W.M. 1976. The Golden-cheeked Warbler: A bioecological study, Texas Parks and Wildlife Department, Austin, Texas.

U.S. Fish and Wildlife Service (USFWS). 1992. Golden-cheeked Warbler (Dendroica chrysoparia) Recovery Plan. Albuquerque, New Mexico. 88pp.

Wahl, R., Diamond, D.D., and Duncan, C.D. 1990. The golden-cheeked warbler: a status review. United States Fish and Wildlife Service, Ecological Services, Fort Worth, Texas, USA.

APPENDIX A

PHOTOS: HABITAT WITHIN STUDY AREAS



Figure 1. Characteristic understory present in GCWA habitat at McGregor.



Figure 2. View of Prime Habitat plot on McGregor Preserve.

APPENDIX B

SURVEY DATA TABLES

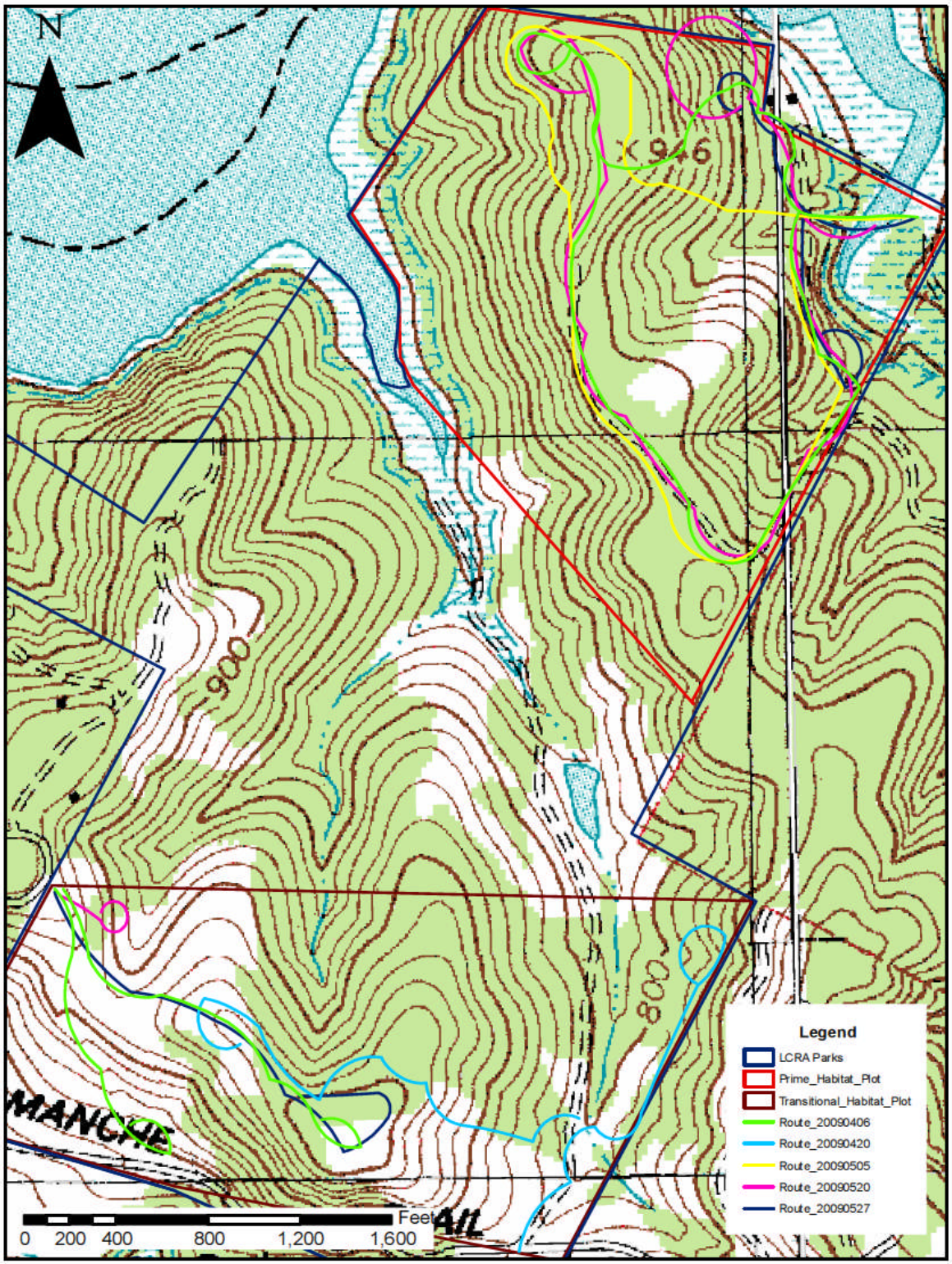
Table 1. Dates and information about surveys.

Date	Sunrise Time	Time			Temperature (degrees F)		Wind Speed (mph)		Cloud Cover (percent)		Surveyors & Observers	Comments
		Start	End	Total hrs.	Start	End	Start	End	Start	End		
04/06/2009	6:51	7:30	13:30	12	43	53	0-20	0-15	20	15	WZ & MPS	6 GCWAs in Prime and none in Transitional
04/20/2009	6:58	7:00	13:00	12	50	80	0-5	0-5	50	0	WZ & MPS	5 GCWAs in Transitional plot
05/05/2009	6:44	6:45	12:45	6	70	78	0-5	5-15	100	50	WZ	7 GCWAs in Prime plot
05/20/2009	6:34	6:00	12:00	12	55	75	0-5	0-5	0	0	WZ & MPS	10 GCWAs in Prime plot and none in Transitional
05/27/2009	6:31	6:15	11:30	11	70	78	0-5	0-5	30	25	WZ & MPS	4 GCWAs in Prime plot and 2 GCWAs in Transitional

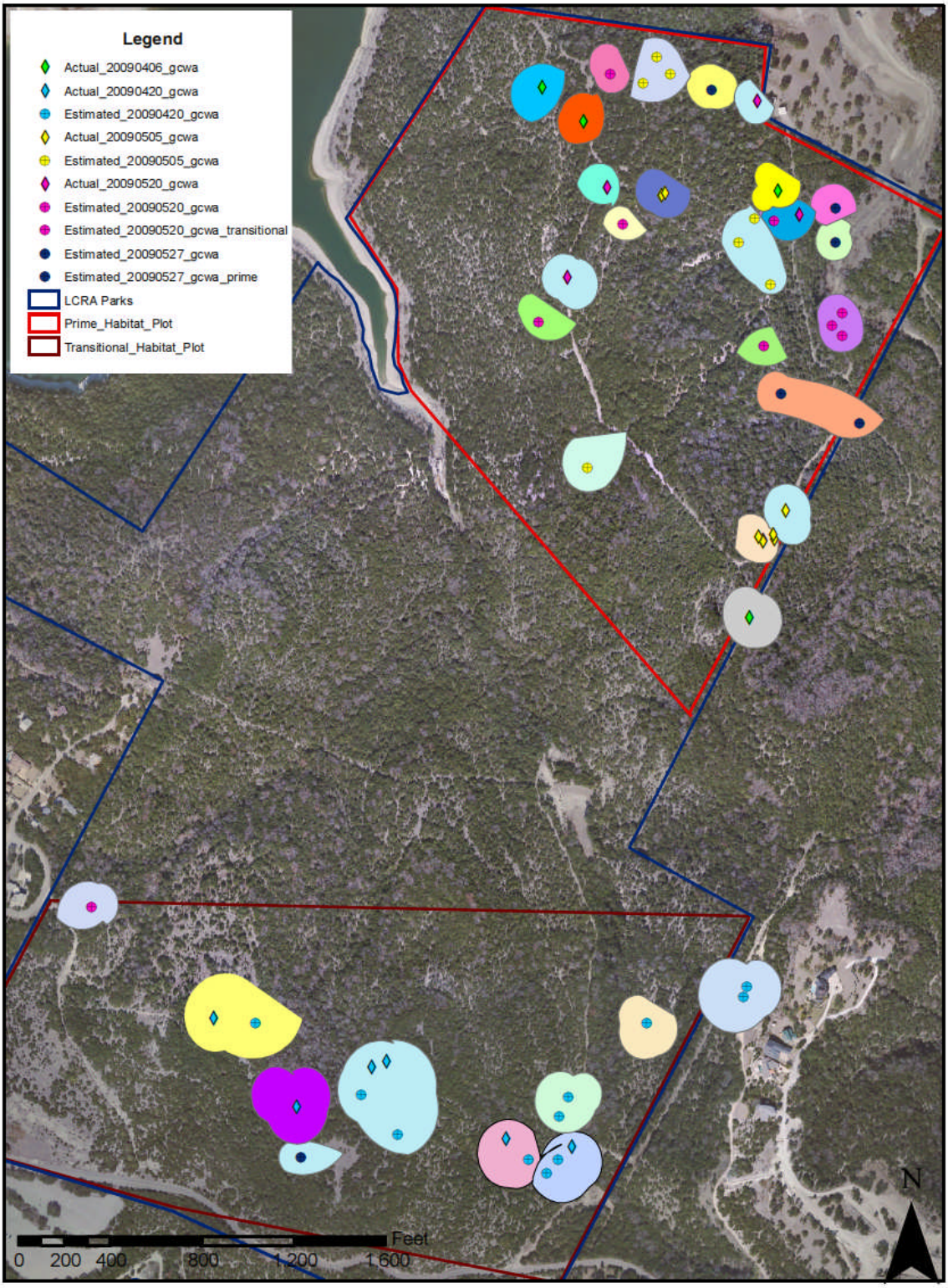
APPENDIX C

MAPS

McGregor Routes 2009



McGregor Daily Territories 2009



McGregor_2009 Survey Occurrences

