2002 Rare Bird Survey Report

Westcave Preserve
Travis County

Lower Colorado River Authority

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Parks and Conservation Services

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INTRODUCTION

Westcave Preserve is a 29-acre nature preserve owned by the Lower Colorado River Authority (LCRA) and jointly managed by LCRA and the Westcave Preserve Foundation. It is managed as a preserve for the endangered golden-cheeked warbler (*Dendroica chrysoparia*) (GCWA), a songbird that nests exclusively in the Texas Hill Country. The entire preserve provides nesting and foraging habitat for the GCWA. Westcave is also managed to protect other rare resources in western Travis County as well as the GCWA as part of the Balcones Canyonlands Conservation Plan preserve system. During the 2002 breeding season, territory level surveys were performed at Westcave Preserve by LCRA Community Services employee, Melanie Pavlas.

METHODS

Survey methods followed minimum guidelines as suggested in the United States Fish and Wildlife Service's protocol for conducting presence/absence surveys of golden-cheeked warblers. The protocol calls for a minimum of 4 hours of survey time per 100 acres of habitat per visit, or a minimum of 5 visits per site. Surveys were conducted with at least 5 days between visits.

Because Westcave Preserve is a 29-acre property, the property was surveyed 5 times, with a minimum of 6 hours spent on site per visit, providing sufficient time for territory mapping surveys. Approximately 30.5 hours were spent surveying the preserve (Table 1). In general, a site visit was scheduled every other week during the breeding season. The bulk of the property was surveyed during each visit, although topography limited direct access to certain areas. Minimally, these areas were observed aurally from nearby locations.

Weather conditions were noted at the beginning and end of each survey (Table 2). All bird species observed during each survey were also noted (Table 5), as well as any remarkable observations about wildlife or habitat (Table 6). Field data were documented the week following each survey (Appendix).

The property was surveyed visually and aurally. No tapes or vocalizations were used to call in birds. When birds were observed singing, they were followed and observed throughout their territory, as long as they were detectable. Emphasis was made on collecting data on singing birds and revisiting areas where birds were previously seen but where little data had been acquired. Careful observations were also made in observing activities near the construction area at Westcave. It was important to note whether activities and noise associated near the site affected the warblers.

At the end of the season, territories were mapped using a Husky FS 3 GPS unit with an Omnistar backpack antenna, along with a Magellan GPS Tracker. Trees where birds were observed singing were mapped as well as locations marked on maps where birds were previously found. Territory boundaries were estimated in areas where topography prohibited mapping with a GPS unit.

FINDINGS

The majority of the warbler territories include an upland portion adjacent to a steep canyon. Territories were found along both canyons at Westcave Preserve. The Pedernales River canyon runs along the eastern edge of the preserve while the grotto canyon runs along the northern arm of the property and empties into the Pedernales River. Canyon vegetation is dominated by Texas oak (*Quercus buckleyi*), bald cypress (*Taxodium distichum*), cedar elm (*Ulmus crassifolia*) and other woody species. A high diversity of forbs, grasses and vines construct the understory vegetation. Dominant vegetation along the uplands include ashe juniper (*Juniperus ashei*), plateau live oak (*Quercus fusiformis*) and Texas persimmon (*Diospyros texana*) in motts interspersed with open areas that include vegetation such as little bluestem (*Schizachyrium scoparium*), prickly pear (*Opuntia* sp.) and various forbs.

Golden-cheeked warblers were observed on all five site visits at Westcave Preserve. Three to six males were observed singing during each survey (Appendix). At least four and possibly six territories overall were found during the 2002 breeding season (Figures). Territory size on LCRA property ranged from 1.123 acres to 3.625 acres (Table 3). Countersinging was observed between males one and two and males four and five. During early site visits males were observed singing in territories three and six. However, on subsequent visits, the locations of these territories and the lack of countersinging between these and nearby males may indicate that they were actually extensions of or the aural observations of males from territories two and/or five. These two males, detected early in the season, may have established territories off property. It may also be possible that the male detected in territory five later established a territory elsewhere, then the male in territory three extended his territory farther west. Additional field time would have been necessary to understand these discrepancies.

Three territories were occupied with both males and females (Table 4). In addition, two adult warblers were heard chipping and lingering in a shin oak (*Quercus sinuata*) within territory five, although no female was seen. No juveniles were observed during the survey, although nesting behavior was observed (adults carrying food, etc.). Brown-headed

cowbirds (*Molothrus ater*) were observed on each site visit, however, no GCWA was observed feeding cowbird nestlings.

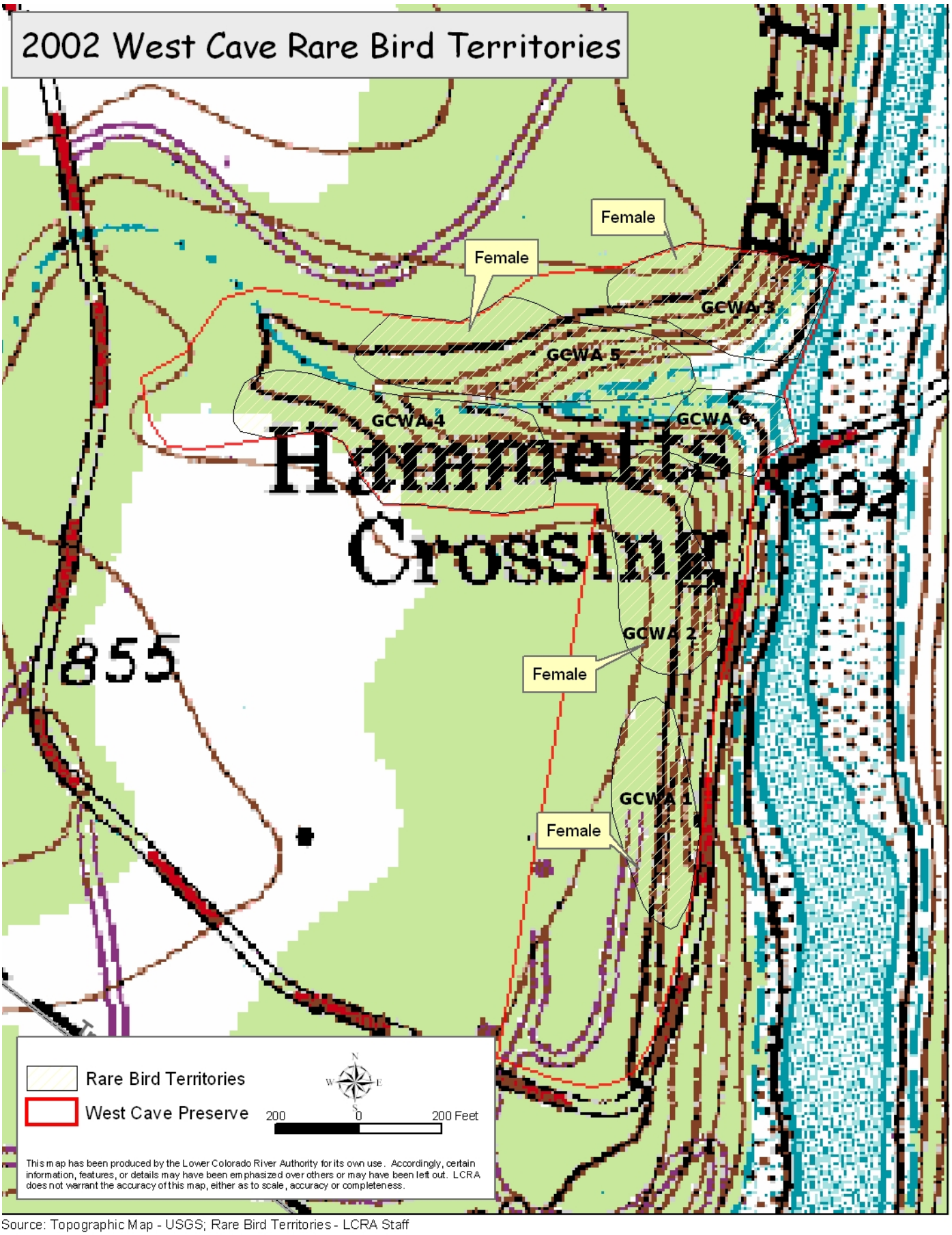
Early in the season, male one was active and singing near the construction site and south towards the entrance area. However, as the season progressed, this male's territory and activities moved north of the site and he was no longer observed directly adjacent to or south of the construction. Later in the season, he was also observed with a female, foraging and carrying food.

DISCUSSION AND RECOMMENDATIONS

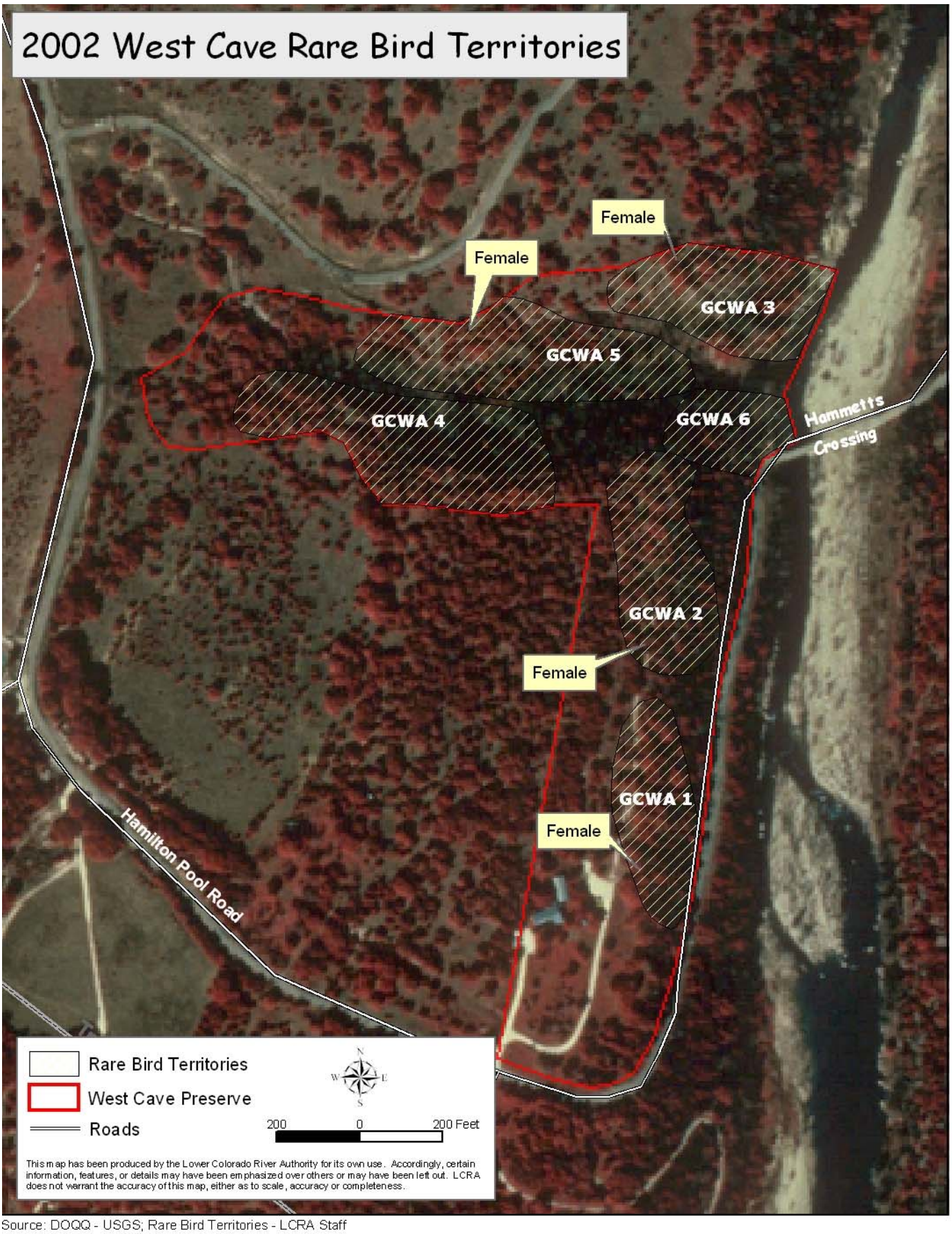
The number of golden-cheeked warbler territories found this survey season corresponds with previous years' findings, including the locations of some of these territories. Notably, construction near the entrance to the preserve did not seem to have detrimental impacts on nesting birds, besides the observation that the male found in that vicinity moved his territory farther north as the season progressed. This male was also seen with a female, carrying food, possibly indicating a successful nesting attempt. Heated territorial disputes observed on several locations between this and the adjacent male may also be a factor of moving his territory closer to male two.

Current management practices at Westcave Preserve should be continued. Because population trends on the property seem to be stable, it may not be necessary to conduct territory mapping level surveys on this property during the 2003 breeding season, unless this is the responsibility of Balcones Canyonlands Preserve participants. However, some level of monitoring should be conducted in order to maintain current information about warbler occupation on the property. It would also be important to monitor the effects the new environmental learning center has on warblers at Westcave, including any increased visitation because of the new facilities.

FIGURES



Source: Topographic Map - USGS; Rare Bird Territories - LCRA Staff



Source: DOQQ - USGS; Rare Bird Territories - LCRA Staff

TABLES

Table 1. Survey Hours

Date	Surveyor	Start Time	End Time	Total Hours
3/26/02	Pavlas	0720	1320	6.0
4/5/02	Pavlas	0640	1256	6.27
4/19/02	Pavlas	0638	1238	6.0
5/2/02	Pavlas	0648	1248	6.0
5/8/02	Pavlas	0632	1248	6.27
			TOTAL HRS.	**30.54**

Table 2. Weather

Date	Time (start-end)	Temp (°F, start-end)	Wind (mph, start-end)	Sky (start-end)
3/26/02	0720-1320	45-60	0-3 – 0-2	Clear - clear
4/5/02	0640-1256	55-63	0-3 – 0-2	100% overcast – 100% overcast
4/19/02	0638-1238	71-83	0-1 – 0-15	overcast - overcast
5/2/02	0648-1248	73-87	Calm – 0-5	overcast - overcast
5/8/02	0632-1248	75-92	0-4 – 0-5	Mostly cloudy – partly cloudy

Table 3. Territory Sizes

Territory	Square Feet	Acres	Square Kilometers
1	83239.183	1.911	0.008
2	107768.757	2.474	0.010
3	104334.921	2.396	0.010
4	157893.986	3.625	0.015
5	142575.646	3.274	0.013
6	48909.686	1.123	0.005

Table 4. Females by Territory

Territory	Female	Notes
2	4/5/02	Heard a lot of chipping from two birds, but no visual i.d.
5	4/5/02	Heard a lot of chipping, sounded like two birds but no visual i.d.
1	4/19/02	Territorial dispute between males 1 and 2, much chipping also heard – seemed to be a female.
1	5/2/02	Visual i.d. of female with male – female following male and carrying food.
1	5/8/02	Seen near deck overlooking Pedernales River.
3	5/8/02	Male singing soft and louder as he was following female, while foraging.

Table 5. Bird Species

Common Name	Species Name	Notes
American Goldfinch	*Carduelis tristis*	
American Robin	*Turdus migratorius*	
Ash-throated Flycatcher	*Myiarchus cinerascens*	
Barn Swallow	*Hirundo rustica*	
Belted Kingfisher	*Ceryle alcyon*	
Bewick's Wren	*Thryomanes bewickii*	
Black Vulture	*Coragyps atratus*	
Blue-gray Gnatcatcher	*Polioptila caerulea*	
Blue Grosbeak	*Guiraca caerulea*	
Brown-headed Cowbird	*Molothrus ater*	
Bushtit	*Psaltriparus minimus*	
Canyon Wren	*Catherpes mexicanus*	
Carolina Chickadee	*Parus carolinensis*	
Carolina Wren	*Thryothorus ludovicianus*	
Cedar Waxwing	*Bombycilla cedrorum*	~70
Chimney Swift	*Chaetura pelagica*	
Chuck-will's-widow	*Caprimulgus carolinensis*	
Cliff Swallow	*Hirundo pyrrhonota*	
Common Grackle	*Quiscalus quiscula*	
Common Raven	*Corvus corax*	
Cooper's Hawk	*Accipiter cooperii*	
Eastern Bluebird	*Sialia sialis*	
Eastern Phoebe	*Sayornis phoebe*	
Eastern Towhee	*Pipilo erythrophthalmus*	
European Starling	*Sturnus vulgaris*	
Field Sparrow	*Spizella pusilla*	
Golden-cheeked Warbler	*Dendroica chrysoparia*	
Great Blue Heron	*Ardea herodias*	
Great-crested Flycatcher	*Myiarchus crinitus*	
Great-tailed Grackle	*Quiscalus mexicanus*	
Hermit Thrush	*Catharus guttatus*	
House Finch	*Carpodacus mexicanus*	
Hummingbird Species	*Archilochus* sp.	
Inca Dove	*Columbina inca*	
Indigo Bunting	*Passerina cyanea*	
Killdeer	*Charadrius vociferus*	
Ladder-backed Woodpecker	*Picoides scalaris*	
Lark Sparrow	*Chondestes grammacus*	
Lesser Goldfinch	*Carduelis psaltria*	
Louisiana Waterthrush	*Seiurus motacilla*	
Mourning Dove	*Zenaida macroura*	
Nashville Warbler	*Vermivora ruficapilla*	
Northern Cardinal	*Cardinalis cardinalis*	

Northern Mockingbird	*Mimus polyglottos*	
Painted Bunting	*Passerina ciris*	
Purple Martin	*Progne subis*	
Red-eyed Vireo	*Vireo olivaceus*	
Red-shouldered Hawk	*Buteo lineatus*	
Red-tailed Hawk	*Buteo jamaicensis*	5/8: carrying large prey item
Red-winged Blackbird	*Agelaius phoeniceus*	
Ruby-crowned Kinglet	*Regulus calendula*	
Rufous-crowned Sparrow	*Aimophila ruficeps*	
Scrub Jay	*Aphelocoma coerulescens*	
Summer Tanager	*Piranga rubra*	5/2: young male singing.
Tufted Titmouse	*Parus bicolor*	
Turkey Vulture	*Cathartes aura*	
White-eyed Vireo	*Vireo griseus*	Nest off trail.
Wild Turkey	*Meleagris gallopavo*	
Yellow-billed Cuckoo	*Coccyzus americanus*	
Yellow-throated Vireo	*Vireo flavifrons*	
Yellow-throated Warbler	*Dendroica dominica*	

Table 6. Other Wildlife

Common Name	Species Name	Notes
Coyote	*Canis latrans*	Saw canine tracks, assuming a coyote.
Eastern Cottontailed Rabbit	*Sylvilagus floridanus*	
Eastern Fox Squirrel	*Sciurus niger*	
Monarch Butterfly	*Danaus plexipus*	
Skink Species	*Eumeces or Scincella* sp.	
Unidentified Blue Beetle		19-Apr
White-tailed Deer	*Odocoileus virginianus*	4/5: two

APPENDIX

Field Data Forms

LCRA Bird Surveys Data Sheet

Observer(s)	Melanie Pavlas
Date (mo-da-yr)	03-26-02
Time (military, begin – end, hrs)	0720-1320
Site Visit #	1
Conditions (temp, wind, cloud cover, other)	0720: 45°F, Clear, Wind 0-3 mph 1320: 60° F, Clear, Wind 0-2 mph
Acres Surveyed	27

General Notes (trespass, public contact, stewardship issues, fencing or signage, other wildlife observations, oak wilt, storm damage, etc.)	Active WEVI nest ~6' off so. side of trail. Wildlife: Coyote or dog track on trail, Monarch, E. Fox Squirrel, unknown skink, Bullfrog (?) Construction quite loud but when on trail near first "hitching post" you can't hear it. It is audible about when you can see the trailhead at the old parking lot. Doesn't seem to bother GCW male whose territory is adjacent. He continues to sing, even through noise.

Male	Song Type	Female #	Juv #	Notes
G1	A			Near construction site. Doesn't seem affected by construction. Seemed to be singing back and forth with G2.
G2	A/B			Singing and foraging (foraging in a Cedar Elm with new buds); seemed to defend territory against G1 and G3 (singing back and forth). Territory in canyon and along upland along trail.
G3	A			Majority of territory off property (NE corner of property) at this point. Singing from large Cedar Elm.

LCRA Bird Surveys Data Sheet

Observer(s)	Melanie Pavlas
Date (mo-da-yr)	4/5/02
Time (military, begin – end, hrs)	0640-1256
Site Visit #	2
Conditions (temp, wind, cloud cover, other)	06:40: 100% overcast, 55° F, Wind 0-3 mph 12:56: 100% overcast, 63° F, Wind 0-2 mph
Acres Surveyed	27

General Notes (trespass, public contact, stewardship issues, fencing or signage, other wildlife observations, oak wilt, storm damage, etc.)	Construction noise started from 0645 on. More intermittent this time. Most noise was (tractor) engine noise, masonry drill like. Large school group arrived at ~11:15, loud. Eastern Cotton-tail Rabbit, Eastern Fox Squirrel, Monarch butterfly, White-tailed Deer (2). Hummingbird nest along creek to grotto in a skinny Bald cypress, just past WEVI nest, halfway up tree, above 1st lower branch, in a small, angled branch. Damage from Nov. flood unnoticeable.

Male	Song Type	Female #	Juv #	Notes
1	A/B			Construction area to just past old parking area.
2	A/B	1		Upland bird near trailhead to lower canyon. Heard a lot of chipping from two birds, but did not see female. Countersinging with a GCW off property.
3	A			NE corner of property.
4	A/B			Southern half of grotto canyon. Chipping also. Countersinging with off-property bird.
5	A/B	2?		Northern half of grotto canyon. Lots of chipping, sounded like two birds but never saw a female. Lots of chipping and hanging out in a Shin oak. Countersinging with G4.
6	B			Where grotto creek and Ped. Rv. meet.

Property & County: Westcave Preserve, Travis Co.

LCRA Bird Surveys Data Sheet

Observer(s)	Melanie Pavlas
Date (mo-da-yr)	4/19/02
Time (military, begin – end, hrs)	0638-1300
Site Visit #	3
Conditions (temp, wind, cloud cover, other)	0638: 71° F, Wind: 0-1 mph, overcast 1238: 83° F, Wind: 0-15 mph, overcast
Acres Surveyed	27

General Notes (trespass, public contact, stewardship issues, fencing or signage, other wildlife observations, oak wilt, storm damage, etc.)	Warblers were unusually inactive this time. E. Cottontail Rabbit, E. Fox Squirrel, 4 White-tailed Deer, skink, bright turquoise beetle with spots at bottom of wings. Cooper's Hawk nest near grotto. Construction noise began around 0710. Small tour group arrived about 0930.

Male	Song Type	Female #	Juv #	Notes
G1	B	?		Territorial dispute with G2 near deck overlook. Much chipping. There may have been a female involved.
G2	A			
G4	A/B			
G6	B			

LCRA Bird Surveys Data Sheet

Observer(s)	Melanie Pavlas
Date (mo-da-yr)	5/2/02
Time (military, begin – end, hrs)	0648-1248
Site Visit #	4
Conditions (temp, wind, cloud cover, other)	0648: 73º F, W: 0 mph, overcast 1248: 87º F, W: 0-5 mph, overcast
Acres Surveyed	27

General Notes (trespass, public contact, stewardship issues, fencing or signage, other wildlife observations, oak wilt, storm damage, etc.)	Construction noise began around 0800. School groups arrived before ~1130. Fencing damage along fenceline so. of grotto. Ashe juniper die off west of upland portion of trail.

Male	Song Type	Female #	Juv #	Notes
G1	A/B	2		Closest to construction. Seems this territory has moved farther north/farther away from construction. Countersinging with G2 near deck. Seen with female, he sang while she followed him from west of trail to dropoff, carrying food. Male also observed preening.
G2	A/B			Top of trail towards G1 territory.
G3	A			NE corner territory. Suspicious chipping.
G4	A			So. half of grotto canyon.
G6	A			At Pedernales and grotto junction.

Property & County: Westcave Preserve, Travis Co.

LCRA Bird Surveys Data Sheet

Observer(s)	Melanie Pavlas
Date (mo-da-yr)	5/8/02
Time (military, begin – end, hrs)	0632-1309
Site Visit #	5
Conditions (temp, wind, cloud cover, other)	0632: 75º F, W: 0-4 mph, mostly cloudy 1248: 92º F, W: 0-5 mph, partly cloudy
Acres Surveyed	27

General Notes (trespass, public contact, stewardship issues, fencing or signage, other wildlife observations, oak wilt, storm damage, etc.)	Construction noise began around 0715. School group arrived ~930. GPS unit battery lasted <3 hrs and would NOT take readings under ANY canopy whatsoever. Finished readings with personal handheld unit. E. Fox Squirrel, RTHA carrying large prey, 2 White-tailed Deer. Lots of old fencing debris on western most edge of property. Recommend cleaning up. Joe Miller was out to fix fence. Lots of silt built up/dumped by Nov. flood (?) along creek near Ped. Rv.

Male	Song Type	Female #	Juv #	Notes
G1	B, chipping	2		Near deck again.
G2	A			
G3	A/B	3		Seen farther west this time also, singing very soft, then louder as he was foraging and following female.
G4	A			Countersinging with G5
G5	A			Got to follow this male finally.
G6	A			Heard a male in this territory (creek/Ped. Rv. Junction) but is this territory actually part of G2's and not a separate bird?!