RESULTS OF THE GOLDEN-CHEEKED WARBLER
SURVEY FOR WILD BASIN WILDERNESS PRESERVE
SPRING 2004
TRAVIS COUNTY, TEXAS

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RESULTS OF THE GOLDEN-CHEEKED WARBLER SURVEY FOR WILD BASIN WILDERNESS PRESERVE SPRING 2004 TRAVIS COUNTY, TEXAS

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1.0 INTRODUCTION

PBS&J conducted surveys for the federally endangered golden-cheeked warbler (*Dendroica chrysoparia*), on the 227-acre Wild Basin Wilderness Preserve located in Austin, Texas, in the spring of 2004. Wild Basin contracted with PBS&J to conduct the surveys in order to determine the presence or absence of golden-cheeked warblers on the 227-acre tract.

The study area is located 6 miles northwest of downtown Austin and features 2-½ miles of hiking trails which meander through woodlands, grasslands, and streamside habitats. The preserve is bordered by single-family residential development to the south, east and north, and by Capital of Texas Highway (Loop 360) to the west (Figure 1).

2.0 BIOLOGICAL BACKGROUND

2.1 GOLDEN-CHEEKED WARBLER (*Dendroica chrysoparia*)

2.1.1 Description

The golden-cheeked warbler (GCW) is a small (about 5 inches long) insectivorous bird. Adult males have black on the crown, nape, back, throat and upper breast. The wings are black with two white wing bars. The cheeks are a bright golden-yellow with a black eyeline. The underparts are white streaked with black on the flanks. Adult females are similar but duller; the crown and back are olive-green with some black streaking (Oberholser, 1974).

2.1.2 Habitat

In Texas, the GCW is an inhabitant of oak-juniper woodlands in the Edwards Plateau, Lampasas Cut-Plain, and Llano Uplift (Wahl et al., 1990). Ashe juniper and various oak species are the dominant tree species throughout the GCW's breeding range. Texas oak (*Quercus buckleyi*), plateau live oak, shin oak, cedar elm (*Ulmus crassifolia*), walnut (*Juglans* spp.), hackberry (*Celtis* spp.) and Texas ash (*Fraxinus texensis*) are common, particularly in the central part of the warbler's range (Pulich, 1976; Ladd, 1985). GCWs require some mature Ashe juniper in their nesting habitat. Shreds of bark from mature Ashe juniper are used by the species for constructing nests, which are well camouflaged and located high in the nest tree, thereby making them difficult to find. GCWs are typically found in areas with steep slopes, canyon heads, draws, and adjacent ridgetops (Pulich, 1976; Ladd, 1985).

2.1.3 Range

Of the 331 bird species known to breed in Texas, only the GCW nests exclusively within the state's boundaries (Oberholser, 1974). The warbler has been recorded from 41 of Texas' 254 counties, of which 31 were considered by Pulich (1976) to be within the nesting range of the species. The species is a rare to locally common summer resident from Palo Pinto and Bosque counties, south through the eastern and south-central parts of the Edwards Plateau (Texas Ornithological Society (TOS), 1984). During the winter the birds are found in pine-oak woodlands of mountainous areas of southern Mexico and east central Guatemala through Honduras to Nicaragua (Pulich, 1976).

2.1.4 Status

On May 4, 1990, the U.S. Fish and Wildlife Service (FWS) published an emergency listing of the warbler as endangered (55 FR 18844). A proposed rule to list the warbler as endangered was also published by the FWS on the same day. The final rule was published on December 27, 1990 (55 FR 53153). The Texas Parks and Wildlife Department (TPWD) lists this species as endangered.

Recent research indicates that the decline in populations of GCW are a direct result of factors related to habitat destruction and fragmentation (Wahl et al., 1990). Oberholser (1974) discussed three main causes for the decline of suitable habitat: 1) land clearing for agricultural use; 2) land development; and 3) reservoir construction. Nest parasitism by brown-headed cowbirds may also have contributed to the GCW's population decline (Pulich, 1976).

3.0 METHODOLOGY

PBS&J followed the protocol as developed by the FWS for determining the presence or absence of GCWs using the following guidelines:

- Surveying from March 20 to May 15.
- Making a minimum of five visits with no more than one visit within any 5-day period.
- A minimum survey time of 4 hours per 100 acres of habitat per visit with all surveys to end by 1:00 P.M.
- Surveys conducted on days when weather conditions are suitable for detection of bird singing.
- All birds detected to be documented on a U.S. Geological Survey (USGS) quad map.

Prior to following these guidelines, PBS&J staff ecologists walked the entire subject tract in order to evaluate existing vegetational communities to determine which portions of the subject site were

considered suitable GCW habitat. Subsequent surveys were based on this information thereby focusing the surveys on areas of suitable habitat.

Six visits were made to Wild Basin (March 26, April 16, April 23, April 30, May 7, and May 14, 2004) to conduct the surveys. All surveys were conducted in the early morning hours when weather conditions were conducive to bird activity. PBS&J ecologists regularly made listening stops throughout the survey period to increase the likelihood of hearing GCW vocalizations. When a vocalization was heard, ecologists moved closer to the area and documented the bird on a USGS topographical map by using the International Standard for Mapping in Bird Census Work (International Bird Census Committee (IBCC), 1970). All other bird species heard or seen were also identified and recorded into the field notebook.

4.0 RESULTS

Wild Basin Wilderness Preserve includes many suitable areas of GCW habitat among its 227 acres; however, due to developed adjacent areas, noise from highway traffic, and insufficient tree size or canopy cover, some of its acreage is not suitable. The most suitable habitat occurs along Bee Creek (Creek Trail), Woodland Trail, and the wooded canyon slopes of North Hollow (both north and south). In addition, the southern slope of Brown's Hollow also provide suitable GCW habitat, consequently, most birds were documented in these areas. Table 1 displays the field data by date followed by a brief description of each survey. Figures 2, 3, and 4 display all GCWs encountered each survey date with their approximate locations documented on a USGS-based topographic map. Table 2 lists all bird species seen or heard throughout the survey season inclusive of all six visits.

TABLE 1

FIELD DATA

Date	Time Start/End	Temperature ° F	Wind Direction	Wind Speed	Cloud Cover	Personnel	GCWs Located
March 26	7:30/11:30	71° F	South	5 mph	Overcast	DM, EH	2 males
April 16	7:30/11:30	68° F	South	8 mph	Partly cloudy	DM, EH	5 males
April 23	7:30/11:30	75° F	Southeast	10 mph	Partly cloudy	DM	0
April 30	7:30/11:30	72° F	Southeast	5 mph	Partly cloudy	DM, BH	1 male
May 7	7:30/11:30	68° F	Southeast	5 mph	Partly cloudy	DM, BH	0
May 14	7:30/11:30	60° F	North	10 mph	Mostly cloudy	DM, EH	0

4.1 SURVEY DESCRIPTIONS

March 26

This survey, from 7:30 to 11:30 A.M., provided vocalizations from two GCWs. One singing male was located deep in the center of North Hollow and was identified visually. Another male was heard singing north of the Ledge Trail and south of North Hollow, just northwest of the pond (see Figure 2).

April 16

This survey was conducted from 7:30 to 11:30 A.M. and resulted in the documentation of five GCWs, one of which was visually identified. One singing male was heard along the north facing slope of North Hollow (visual), two were located between the Laurel Trail and Capital of Texas Highway. The fourth was located south of the Easy Access Trail and east of the Laurel Trail. The fifth was located south of the Ledge Trail and north of the Bee Creek Trail, just west of Elm Grove (see Figure 3).

April 23

This survey, conducted from 7:30 to 11:30 A.M., resulted in no GCWs either seen or heard. This fact may be due to the threat of thunder storms in the vicinity.

April 30

This survey, conducted from 7:30 to 11:30 A.M. resulted in one GCW. This male was heard singing north of the Ledge Trail on the north facing slope of North Hollow and northwest of the pond.

May 7

This survey, conducted from 7:30 to 11:30 A.M. resulted in no GCWs. One possible reason for this was the heavy traffic from a high school walking tour where students were yelling and running down trails.

May 14

This survey, conducted from 7:30 to 11:30 A.M. fell on a day in which a late season cool front arrived, creating some gusty and cool wind conditions. While many migratory songbirds were active and singing on this day, no GCWs were detected.

TABLE 2

ALL BIRDS IDENTIFIED DURING THE SURVEY PERIODS

Common Name	Scientific Name[1]
Bewick's wren	*Thryomanes bewickii*
Northern cardinal	*Cardinalis cardinalis*
Black-crested titmouse	*Baeolophus atricristatus*
Carolina wren	*Thryothorus carolinus*
Red-bellied woodpecker	*Melanerpes carolinus*
Western scrub jay	*Aphelocoma californica*
Blue jay	*Cyanocitta cristata*
Turkey vulture	*Cathartes aura*
White-winged dove	*Zenaida asiatica*
White-eyed vireo	*Vireo griseus*
Blue-gray gnatcatcher	*Polioptila caerulea*
Carolina chickadee	*Poecile carolinensis*
Painted bunting	*Passerina ciris*
American crow	*Coruus brachyrhynchos*
Mourning dove	*Zenaida macroura*
Golden-cheeked warbler	*Dendroica chrysoparia*
Rufous-crowned sparrow	*Aimophila ruficeps*
Black vulture	*Coragyps atratus*
Black and white warbler	*Mniotilta varia*
Spotted towhee	*Pipilo maculatus*
Nashville warbler	*Vermivora ruficapilla*
Ruby-crowned kinglet	*Regulus calendula*
Northern mockingbird	*Mimus polyglottos*
Chuck-wills widow	*Caprimulgus carolinensis*
Black-throated green warbler	*Dendroica virens*
Golden-fronted woodpecker	*Melanerpes aurifrons*
Swainson's thrush	*Catharus ustulatus*
Common yellowthroat	*Geothlypis trichas*
Gray catbird	*Dumetella carolinensis*
American redstart	*Setophaga ruticilla*
Great-crested flycatcher	*Myiarchus crinitus*
Great-tailed grackle	*Quiscalus mexicana*
Brown-headed cowbird	*Molothrus ater*
Cedar waxwing	*Bombycilla garrulus*
Greater roadrunner	*Gecoccyx californianus*

[1] According to Sibley, 2003.

5.0 CONCLUSION

The 2004 presence/absence surveys at Wild Basin Wilderness Preserve resulted in the positive identification of eight GCWs throughout six visits during the breeding season. The survey method used the protocol established by the FWS in determining the presence or absence of this federally endangered migratory songbird. Of the eight birds seen or heard, some of these were most likely the same birds heard on repeated visits since they were in the same area and are fiercely defensive of their own territory. All of these birds were mature males singing their territorial song trying to attract a female. No females were heard nor were any fledglings seen or nests located. It should be noted, however, that locating a GCW nest is a long and arduous task and was outside the scope of this investigation. In addition, pursuant to PBS&J's survey permit with the FWS, all survey results conducted under the auspices of the permit must be reported annually to the FWS.

It is PBS&J's professional opinion that due to the high number of singing territorial males positively identified during the breeding season, and, given the fact that Wild Basin Wilderness Preserve has several areas of suitable breeding habitat, GCWs were most likely nesting on the preserve during the spring of 2004.

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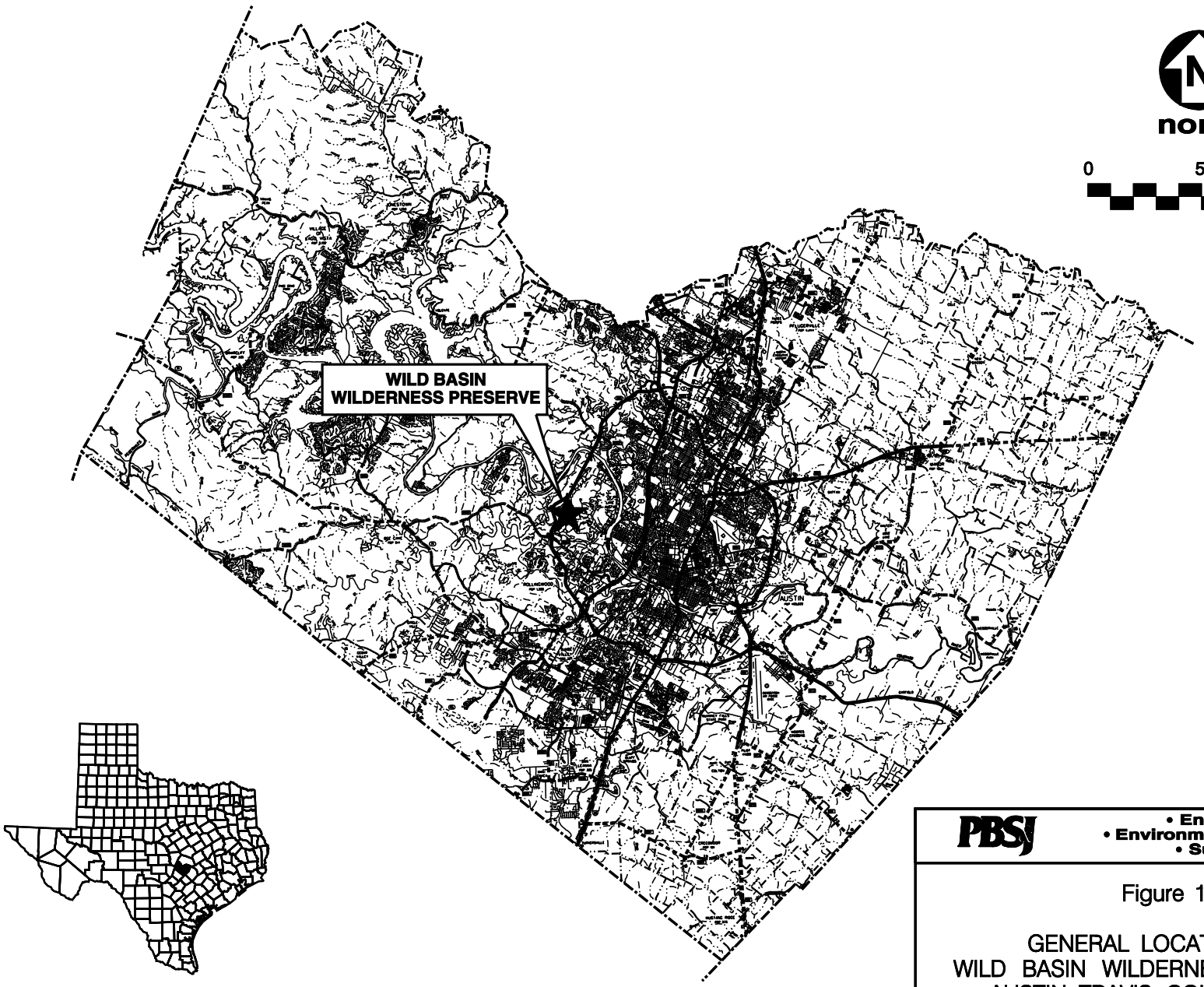
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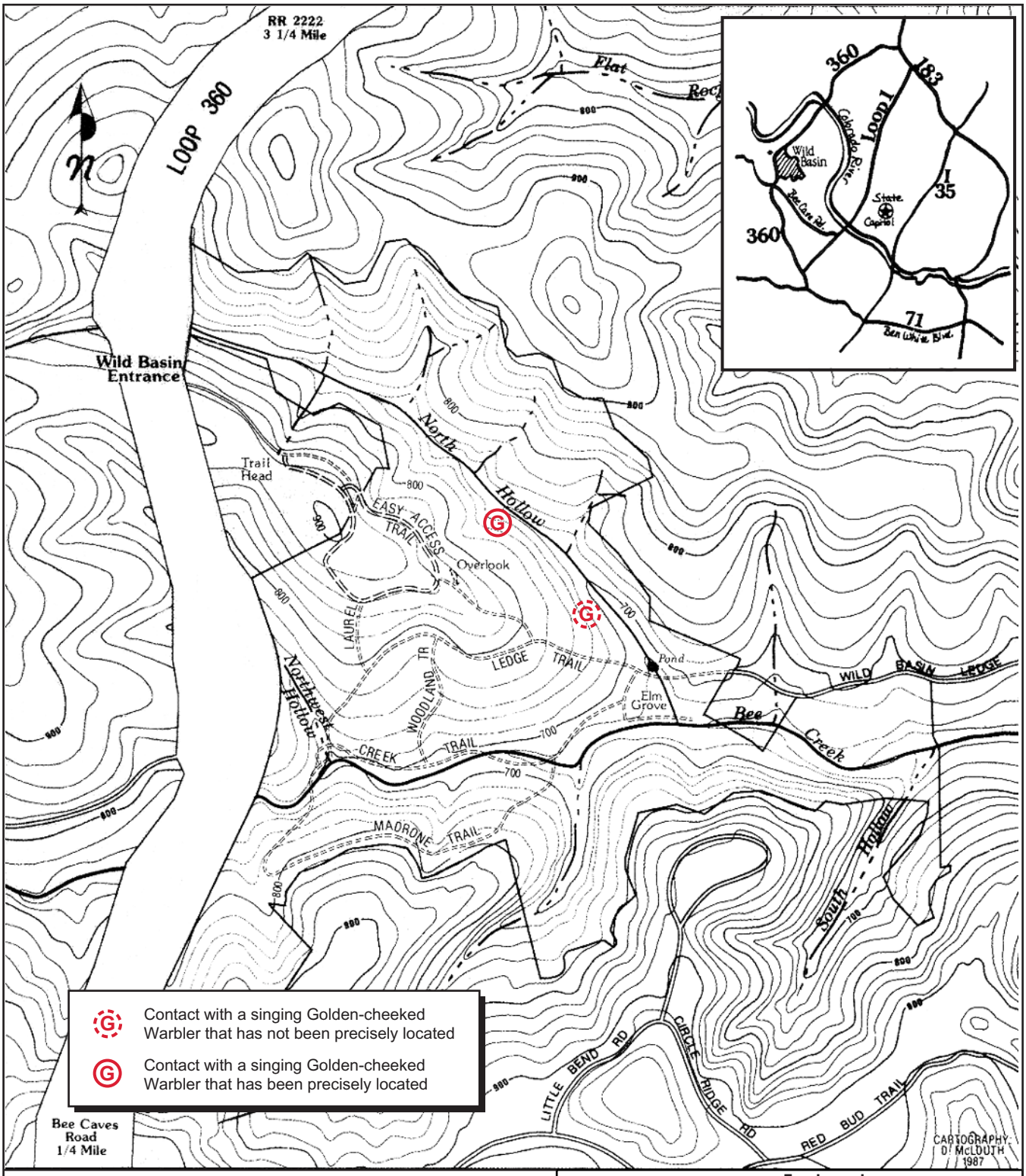


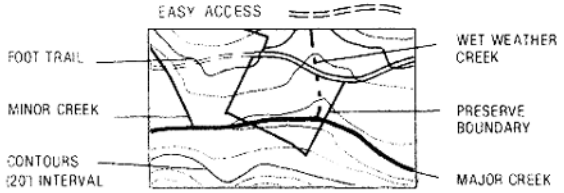
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• Surveying

Figure 1

GENERAL LOCATION OF
WILD BASIN WILDERNESS PRESERVE,
AUSTIN, TRAVIS COUNTY, TEXAS





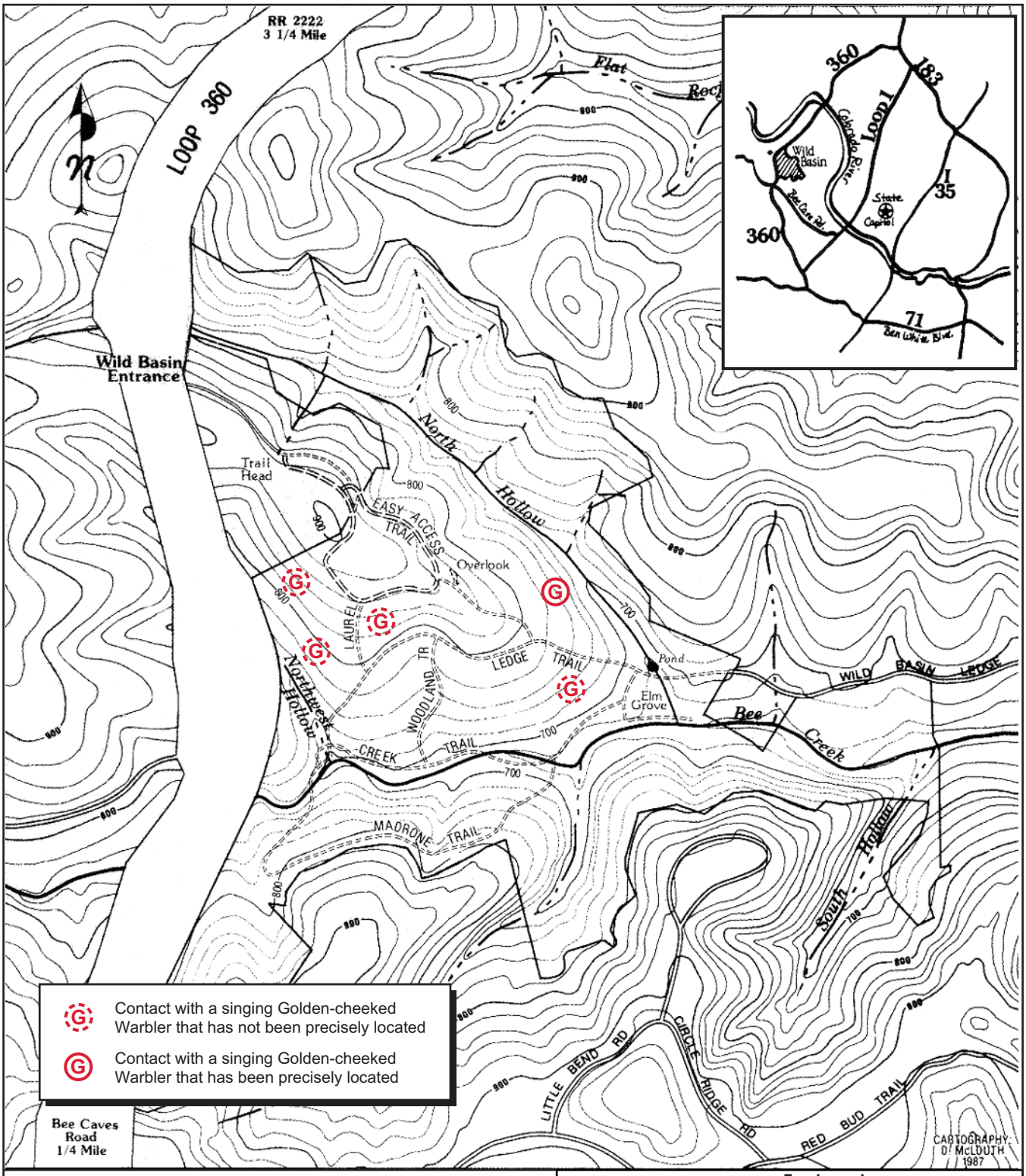
Base Map: The Committee for Wild Basin Wilderness

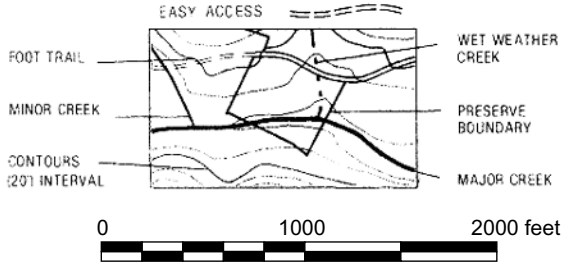
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Figure 2

LOCATIONS OF SINGING GOLDEN-CHEEKED WARBLERS ON THE MARCH 26, 2004 SURVEY

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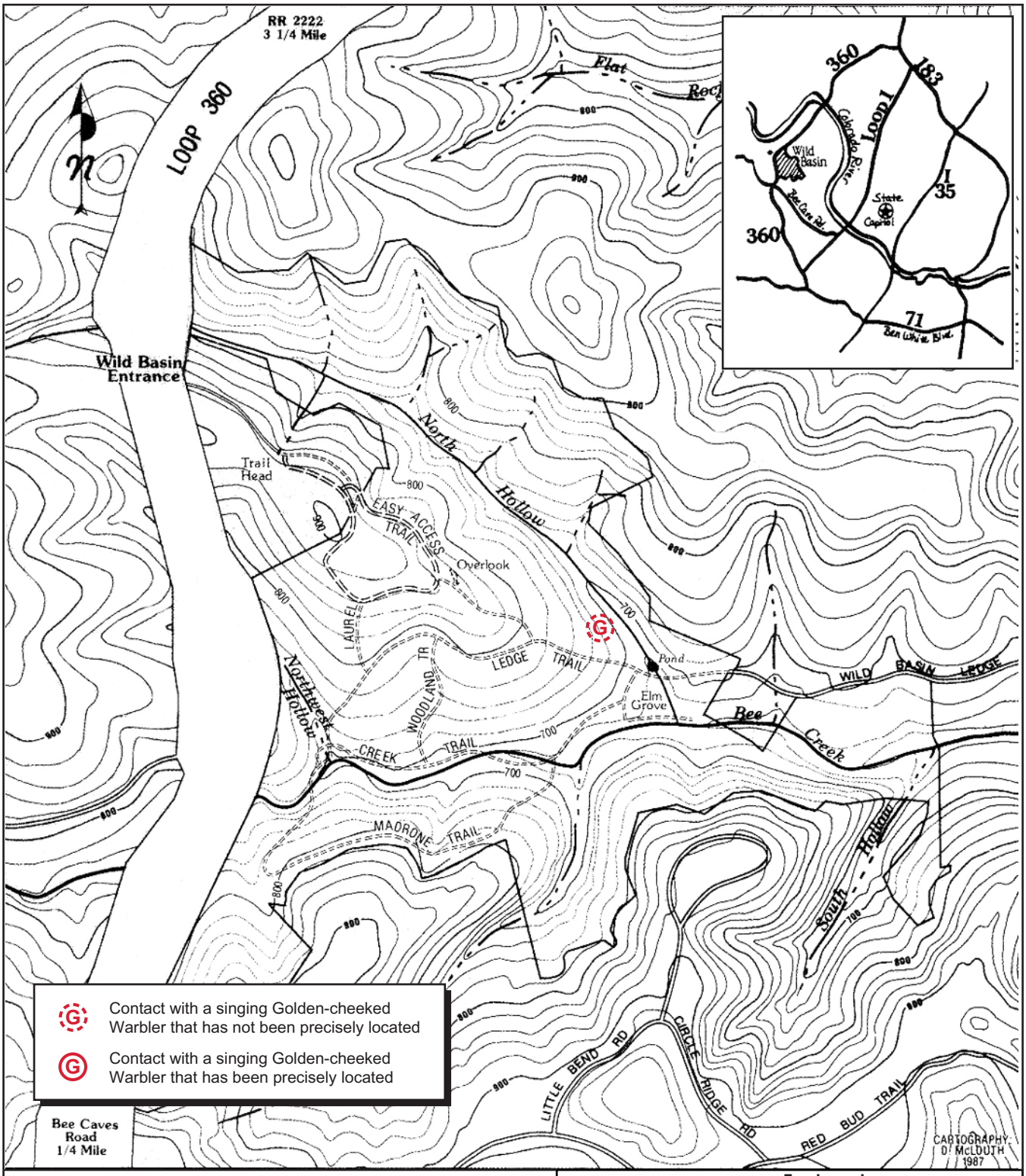
Base Map: The Committee for Wild Basin Wilderness

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Figure 3

LOCATIONS OF SINGING GOLDEN-CHEEKED WARBLERS ON THE APRIL 16, 2004 SURVEY

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Base Map: The Committee for Wild Basin Wilderness

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Figure 4

LOCATIONS OF SINGING GOLDEN-CHEEKED WARBLERS ON THE APRIL 30, 2004 SURVEY

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