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

SPRING 2003

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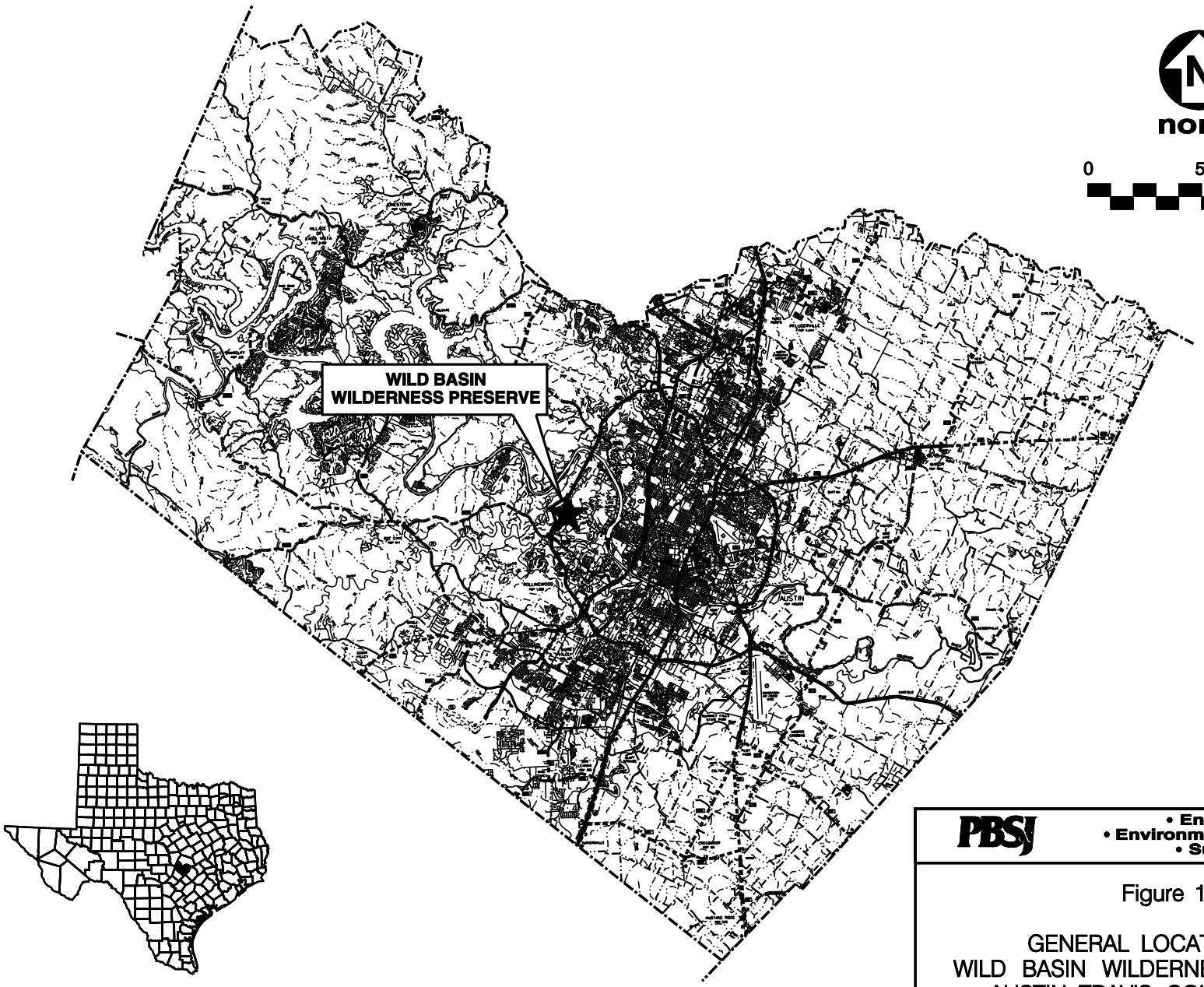
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1.0 INTRODUCTION

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 2003. 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 six miles northwest of downtown Austin and features two and one-half 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).



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Figure 1

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

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 (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 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 U.S. Fish & Wildlife Service (FWS) for determining the presence or absence of GCW's 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 five-day period.
- A minimum survey time of four 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 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.

Five visits were made to Wild Basin (March 23, April 11, April 19, May 2, and May 14 2003) 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 (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, all birds were documented in these areas. The following table (Table 1) displays the field data by date followed by a brief description of each survey. Figures 2, 3, and 4 display all GCW's 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 five visits.

TABLE 1

FIELD DATA

Date	Time Start/End	Temp. ° F	Wind Direction	Wind Speed	Cloud Cover	Personnel	GCW's Located
March 23	0800/1200	65 ° F	South	8 mph	Clear	DM, DL	2 males
April 11	0700/1130	60 ° F	North	5 mph	P. Cloudy	DM, EH	5 males
April 19	0730/1130	75 ° F	Southeast	5 mph	100%	BH	0
May 2	0700/1100	78 ° F	Southeast	5 mph	100 %	DM, EH	0
May 14	0730/1130	80 ° F	South	5 mph	Clear	DM, BH	2 males

4.1 SURVEY DESCRIPTIONS

March 21

This survey, from 0800 to 1200, provided vocalizations from two GCW's. One singing male was located just east of Brown's Hollow and south of Elm Grove, just south of Bee Creek. Another male was heard singing on the south facing slope of North Hollow, in an area where no trails are located (Figure 2).

April 11

This survey was conducted from 0700 to 1130 and resulted in the documentation of four GCW's, two of which were visually identified. One singing male was heard along the north facing slope of North Hollow (visual), the second was located between the Creek Trail and Ledge Trail and just west

of Elm Grove. The third was heard on the north facing slope of Brown's Hollow, and the fourth, near the juncture of the Creek Trail and Madrone Trail (visual) (Figure 3).

April 19

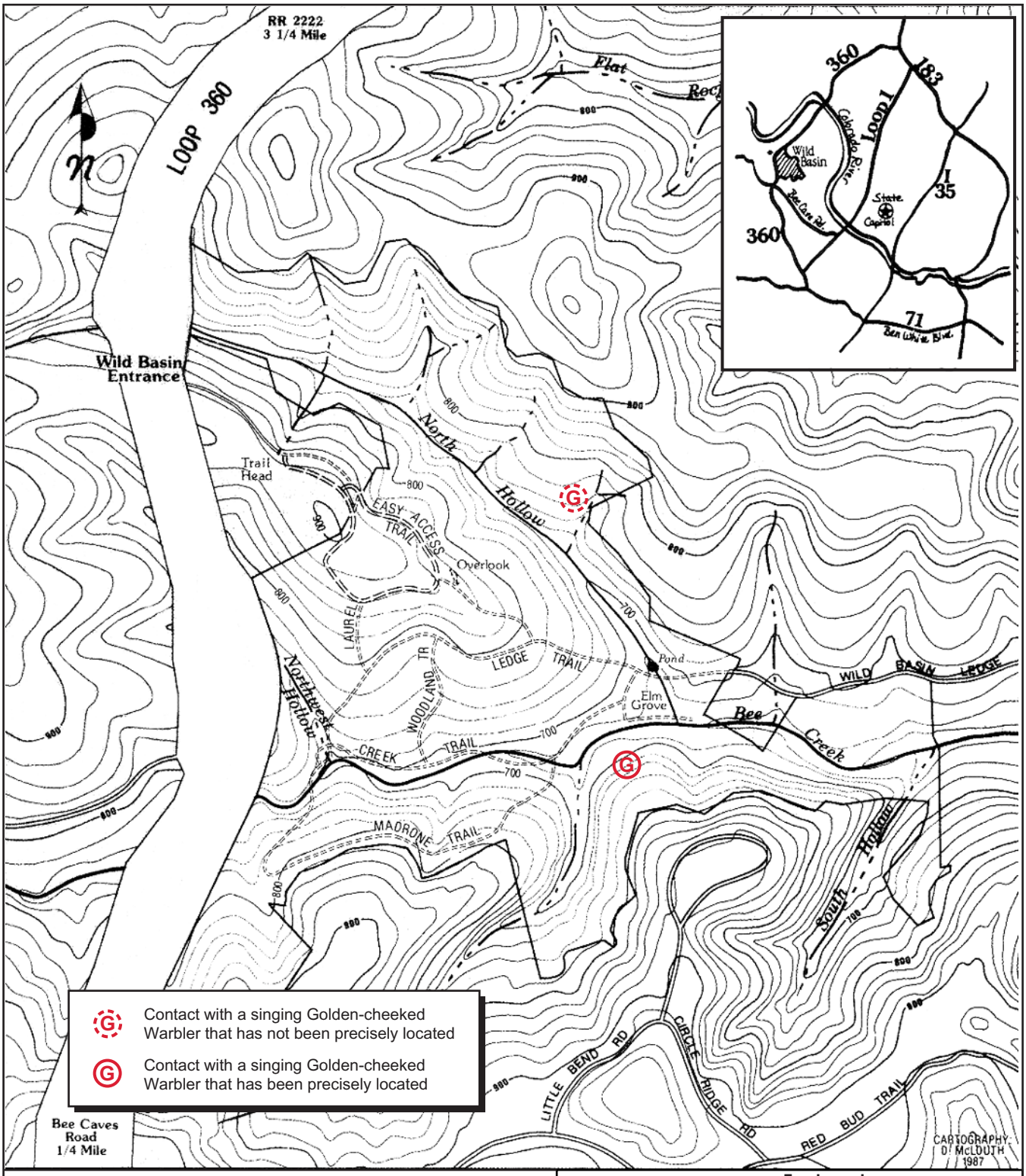
This survey, conducted from 0730 to 1130, fell on Easter weekend and while it was early in the day, many hikers were using the trail. No GCW's were seen or heard on this date, perhaps due both the density of hikers and the heavy cloud cover and threat of thunder storms in the area.

May 2

This survey, conducted from 0700 to 1100 resulted in no GCW's seen or heard.

May 14

This survey, conducted from 0730 to 1130 resulted in the documentation of two GCW's. Both were singing males, one of which was identified along the north facing slope of North Hollow (visual). The other was a singing male locate approximately near the juncture of the Creek Trail and Madrone Trail (Figure 3).



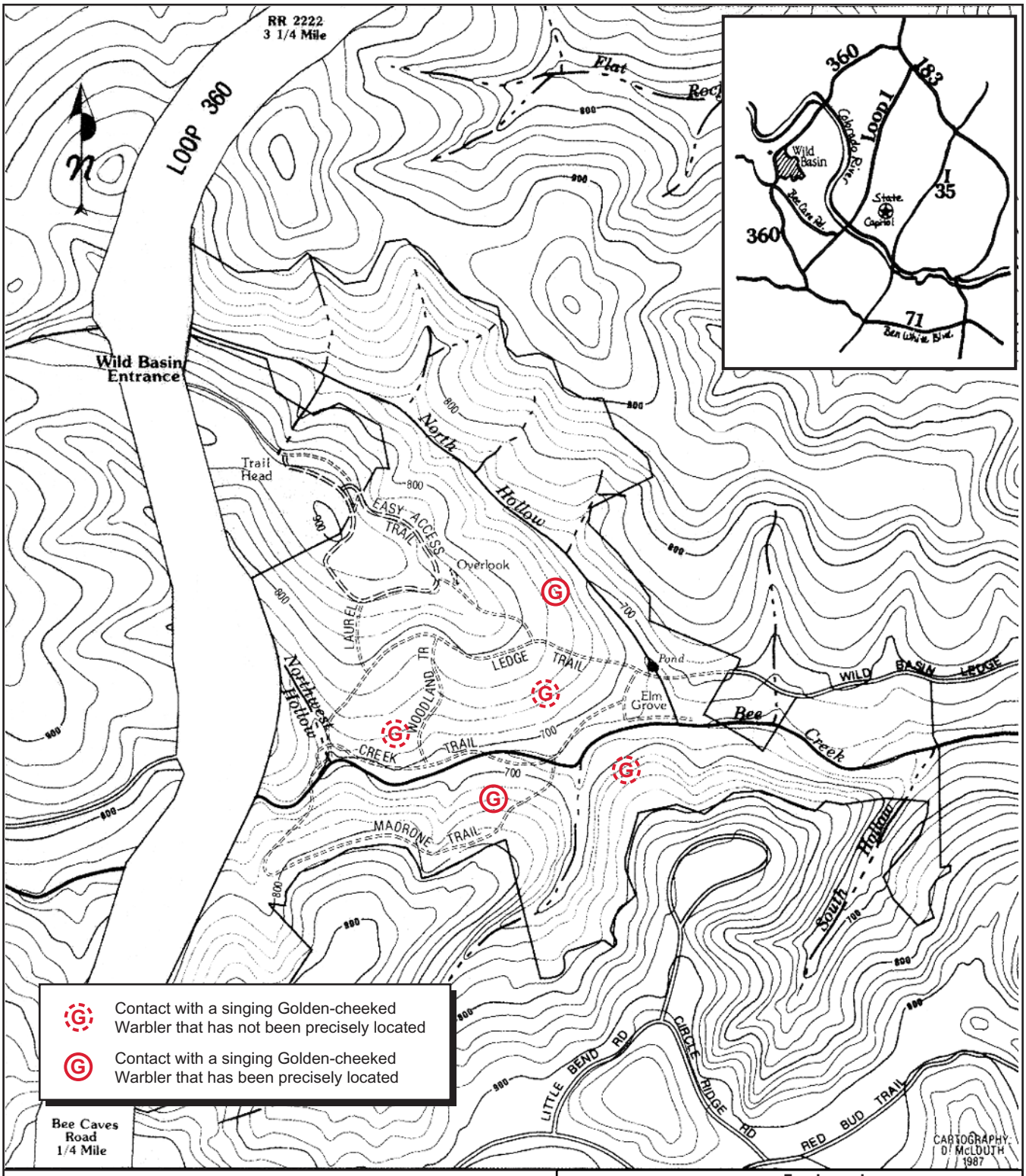
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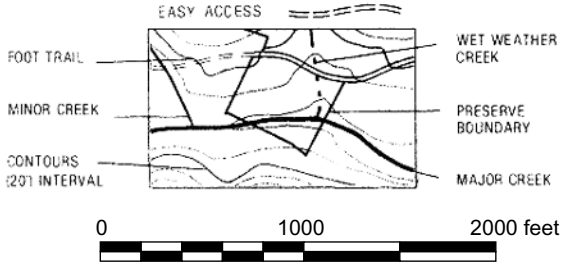
Figure 2

LOCATIONS OF SINGING GOLDEN-CHEEKED WARBLERS ON THE MARCH 23, 2003 SURVEY

Base Map: The Committee for Wild Basin Wilderness

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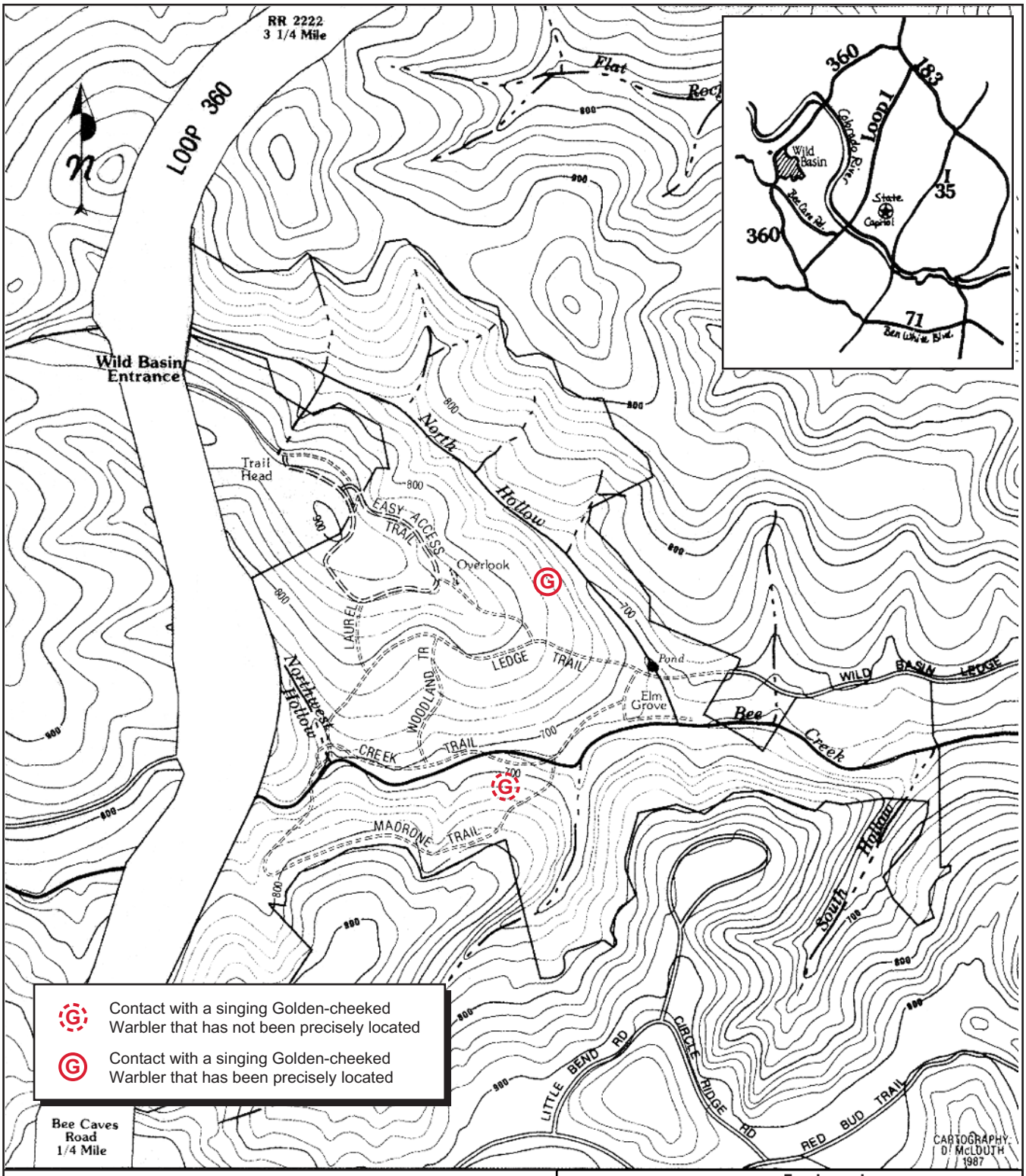
Base Map: The Committee for Wild Basin Wilderness

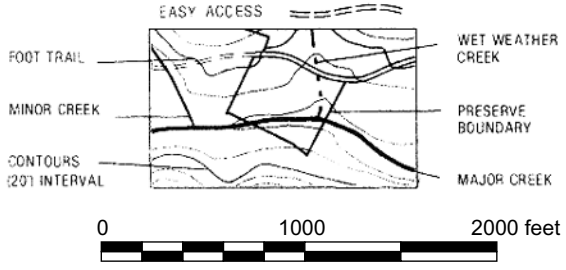
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Figure 3

LOCATIONS OF SINGING GOLDEN-CHEEKED WARBLERS ON THE APRIL 11, 2003 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 MAY 14, 2003 SURVEY

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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*
Philadelphia Vireo	*Vireo philadelphicus*
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*
Yellow-billed Cuckoo	*Coccyzus americanus*
Red-eyed Vireo	*Vireo olivaceus*
Black and White Warbler	*Mniotilta varia*
Spotted Towhee	*Pipilo maculatus*
Nashville Warbler	*Vermivora ruficapilla*
Ruby-crowned Kinglet	*Regulus calendula*
Yellow-rumped Warbler	*Dendroica coronata*
Chimney Swift	*Chaetura pelagica*
Black-throated green Warbler	*Dendroica virens*
Cedar Waxwing	*Bombycilla garrulus*
Greater Roadrunner	*Gecoccyx californianus*

[1] According to Sibley, 2003.

5.0 CONCLUSION

The 2003 presence/absence surveys at Wild Basin Wilderness Preserve resulted in the positive identification of nine GCW's throughout 5 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 nine 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, GCW's were most likely nesting on the preserve during the spring of 2003.

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