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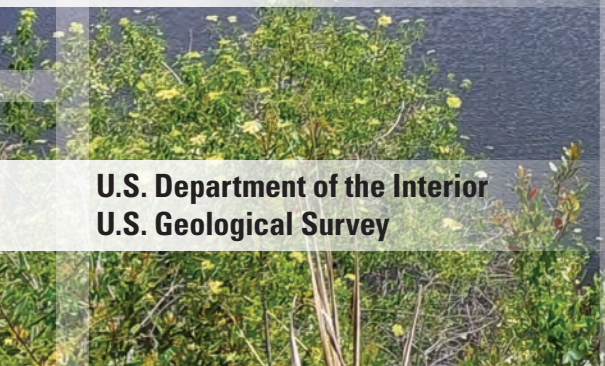

Data Report 1223

U.S. Department of the Interior
U.S. Geological Survey

Cover. Lake Calavera showing freshwater lake and riparian habitat in the background. Photograph by L.D. Allen, U.S. Geological Survey, May 16, 2025.

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Conversion Factors

International System of Units to U.S. customary units

Multiply	By	To obtain
	Length	
meter (m)	3.281	foot (ft)
kilometer (km)	0.6214	mile (mi)
	Area	
hectare (ha)	2.471	acre

Datum

Horizontal coordinate information in text is referenced to the World Geodetic System of 1984 (WGS 84).

Horizontal coordinate information in mapped figures is referenced to the North American Datum of 1983 (NAD 83).

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) Surveys at the City of Carlsbad Preserve, San Diego County, California—2025 Data Summary

By Lisa D. Allen and Barbara E. Kus

Executive Summary

We surveyed for Southwestern Willow Flycatchers (*Empidonax traillii extimus*; flycatcher) at five survey areas within the City of Carlsbad Preserve, Carlsbad, California, in 2025. Three flycatcher surveys were completed between May 16 and June 30, 2025. One transient flycatcher was observed at the Lake Calavera survey area in the City of Carlsbad Preserve in 2025.

Introduction

The Southwestern Willow Flycatcher (*Empidonax traillii extimus*; flycatcher) is one of four subspecies of Willow Flycatcher in the United States, with a breeding range including southern California, Arizona, New Mexico, extreme southern parts of Nevada and Utah, southwestern Colorado, and western Texas (Hubbard, 1987; Unitt, 1987; Browning, 1993). Restricted to riparian habitat for breeding, the flycatcher has declined over the past five decades in response to widespread habitat loss throughout its range and, possibly, Brown-headed Cowbird (*Molothrus ater*; cowbird) parasitism (Wheelock, 1912; Willett, 1912, 1933; Grinnell and Miller, 1944; Remsen, 1978; Garrett and Dunn, 1981; Unitt, 1984, 1987; Gaines, 1988; Schlorff, 1990; Whitfield and Sogge, 1999). By 1993, the species was believed to number approximately 70 pairs in California (U.S. Fish and Wildlife Service, 1993) in small, disjunct populations. The flycatcher was listed as endangered by the State of California in 1992 and by the U.S. Fish and Wildlife Service (USFWS) in 1995. After listing, population estimates for flycatchers in California increased to 256 territories, with the increase largely attributed to expanded survey efforts rather than population growth at known sites (U.S. Fish and Wildlife Service, 2002). In the 2014 5-year status review, estimates of California flycatcher territories decreased to 172, with declines occurring statewide (Durst and others, 2008; U.S. Fish and Wildlife Service, 2014).

Flycatchers in southern California co-occur with the Least Bell's Vireo (*Vireo bellii pusillus*; vireo), another riparian obligate endangered by habitat loss and cowbird parasitism (Kus and others, 2020). However, unlike the vireo, which has increased tenfold since the mid-1980s in response to management practices alleviating threats (U.S. Fish and Wildlife Service, 2006), the number of flycatchers has remained low. As of 2023, most of the Southwestern Willow Flycatchers in California are concentrated at two known sites: (1) the Owens River valley in Inyo County (approximately 56 territories; M. Whitfield, Southern Sierra Research Station, written commun., 2023) and (2) the upper San Luis Rey River at Lake Henshaw in San Diego County (approximately 51 territories; Howell and Kus, 2024). Outside of these sites, flycatchers occur as small, isolated populations of one to half-dozen pairs.

Male flycatchers begin arriving in southern California in early to mid-May, whereas females arrive about 1 week later. While on the breeding grounds, males sing repeatedly from exposed perches. Once the pair bond is established, the female builds an open-cup nest that is usually placed in a branch fork of a willow (*Salix* spp.) or a plant with a similar branching structure about 1–3 meters (m) above the ground. Adults usually depart from their breeding territory in mid-August and early September for their wintering grounds in Central America and northern South America (U.S. Fish and Wildlife Service, 2002).

Flycatcher breeding habitat is characterized as patches of dense riparian vegetation along rivers and streams, interspersed with small openings, open water, or areas of sparse vegetation. Vegetation species composition varies across the range, but most breeding habitats include tree or shrub cover that is at least 3 m tall, with patches of dense vegetation within 3–4 m of the ground. In addition, flycatchers typically nest near areas of standing water or saturated soil (Sogge and Marshall, 2000; U.S. Fish and Wildlife Service, 2002; Sogge and others, 2010).

Purpose and Scope

The purpose of this report is to summarize the results of flycatcher surveys completed by the U.S. Geological Survey (USGS) at five survey areas within the City of Carlsbad Preserve (hereafter, "Preserve") in San Diego County, California, in 2025. The Preserve includes 13 parcels, totaling approximately 43 hectares (ha), that are owned by the City of Carlsbad and managed by the Center for Natural Lands Management following the Habitat Conservation Plan guidelines (City of Carlsbad, 1999). These data will inform natural resource managers about the status of the flycatcher at the Preserve and guide land-use and management practices as appropriate to support the species' survival.

Methods

Surveys

We surveyed for flycatchers on five parcels within the Preserve (hereafter, "survey areas") that supported riparian habitat: (1) Lake Calavera, (2) Municipal Golf Course, (3) Poinsettia Park, (4) Lagoon Lane, and (5) Carrillo Ranch (fig. 1). Surveys were done during the breeding season (May–June) and followed standard survey techniques for flycatchers (Sogge and others, 2010). Three surveys for flycatchers were completed at each survey area between May 16 and June 30, 2025. Observers walked slowly through or adjacent to suitable riparian habitat, listening and searching for flycatchers, playing a recording of a flycatcher song every 50–80 m to elicit a territorial response. For each flycatcher encountered, observers recorded age (adult or juvenile), sex, breeding status (paired, undetermined, or transient), and if the bird was banded. A male was considered paired if a female also was visually detected, by hearing vocalizations unique to mated birds, or by observing breeding behavior (for example, food carry, a nest, or dependent juveniles in the territory). A flycatcher was considered transient if detected only once. Flycatcher locations were mapped using Esri Field Maps (Esri, 2025) on Samsung Galaxy XCover6 Pro mobile phones with Android operating systems and built-in Global Positioning System to determine geographic coordinates (World Geodetic System of 1984 [WGS 84]). Surveys typically began at sunrise and were completed by early afternoon, avoiding conditions of high winds and extreme heat that can reduce bird activity and detectability. Flycatcher surveys were completed by USGS biologist Lisa Allen under USFWS permit ESPER0004080_0.3.

1. **Lake Calavera**: The Lake Calavera survey area is a large open-space area with a network of riparian drainages that enter a freshwater lake (Lake Calavera; fig. 2). The survey area is bordered on the south by the Carlsbad Highland Ecological Reserve and on the north, east, and west by residential development. One main drainage in the eastern part of the survey area is dominated by southern willow scrub. Vegetation species include red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), Fremont cottonwood (*Populus fremontii*), mule fat (*Baccharis salicifolia*), and sandbar willow (*Salix exigua*). Standing water and saturated soil were present throughout the drainage. The western part of the survey area is encompassed by Lake Calavera, which is lined with freshwater marsh species, small patches of mule fat scrub, and narrow strips of willow riparian.

2. **Municipal Golf Course**: The Municipal Golf Course survey area is in the central part of the Preserve (fig. 3). The area surveyed includes an about 1.5-kilometer (km)-long tributary of Agua Hedionda Creek, which is along the northern boundary of the Municipal Golf Course. This tributary is about 50–100 m wide, with areas of standing water and saturated soil. Vegetation includes a canopy of California sycamore (*Platanus racemosa*), Goodding's black willow (*Salix gooddingii*), and arroyo willow, with an understory of mule fat and immature willow species. Outside of this tributary, riparian vegetation is scattered in small patches throughout the golf course and is comprised of mule fat and immature willows with little to no understory vegetation present.

3. ***Poinsettia Park***: The Poinsettia Park survey area is in the central part of the Preserve adjacent to Poinsettia community park (fig. 4). The riparian habitat includes a 50–75-m-wide strip along the western edge of the survey area. Vegetation species include California sycamore, coast live oak (*Quercus agrifolia*), and willow species, with a sparse understory of mule fat, coyote brush (*Baccharis pilularis*), and willow species.

4. ***Lagoon Lane***: The Lagoon Lane survey area is a 1.1-ha patch of habitat in the central part of the Preserve and is surrounded by residential development (fig. 5). Riparian vegetation consists of small patches of willow species bordered by ornamental and coastal sage scrub species.

5. ***Carrillo Ranch***: The Carrillo Ranch survey area is in the easternmost part of the Preserve (fig. 6). The area surveyed includes a small tributary of San Marcos Creek along the northern edge. The dominant riparian vegetation is coast live oak and California sycamore, with a sparse understory of mule fat and willow species. Small areas of ponded water and saturated soil were present throughout the survey area.

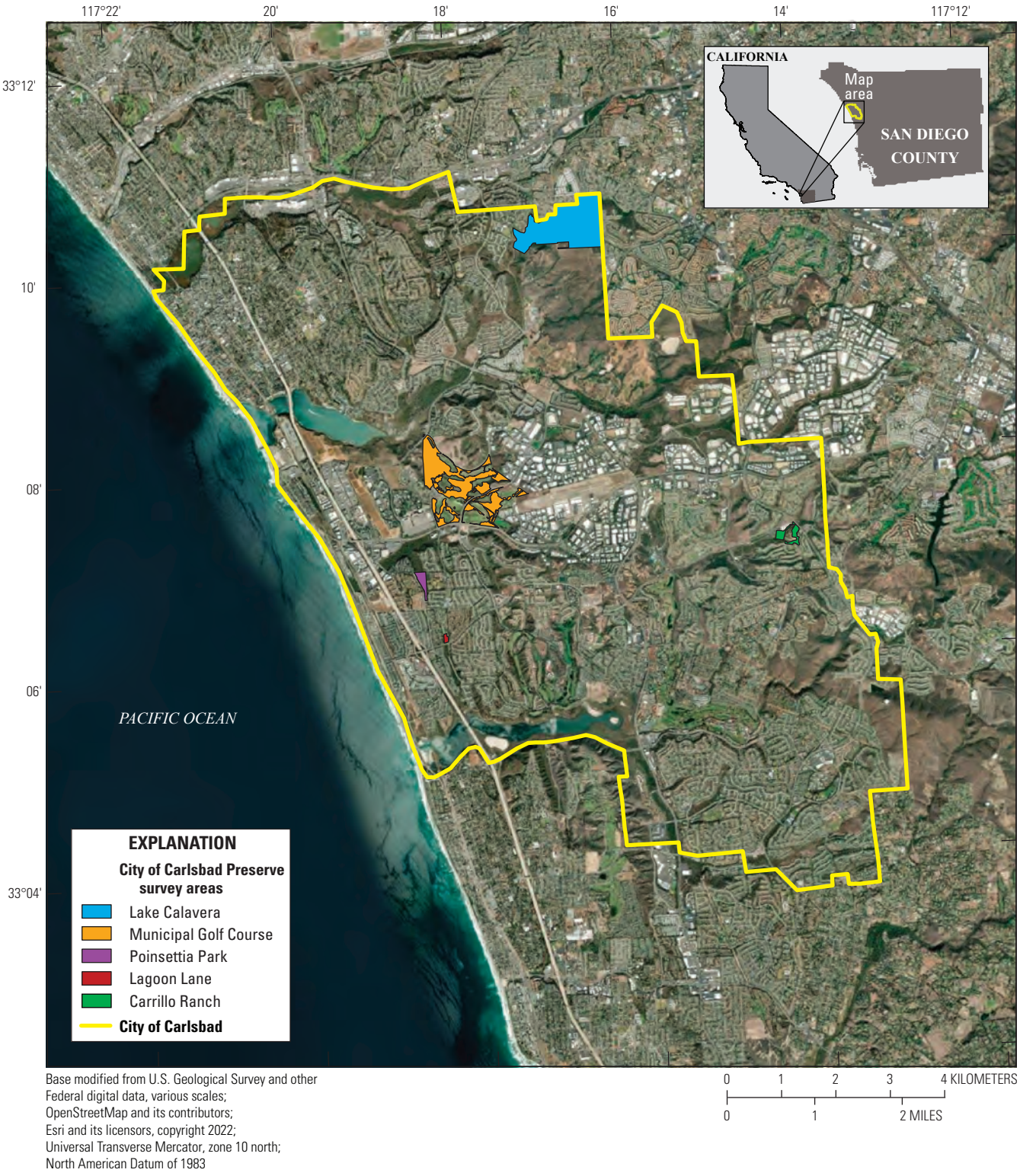

Figure 1. Southwestern Willow Flycatcher (*Empidonax traillii extimus*) survey areas at the City of Carlsbad Preserve, San Diego County, California, 2025.

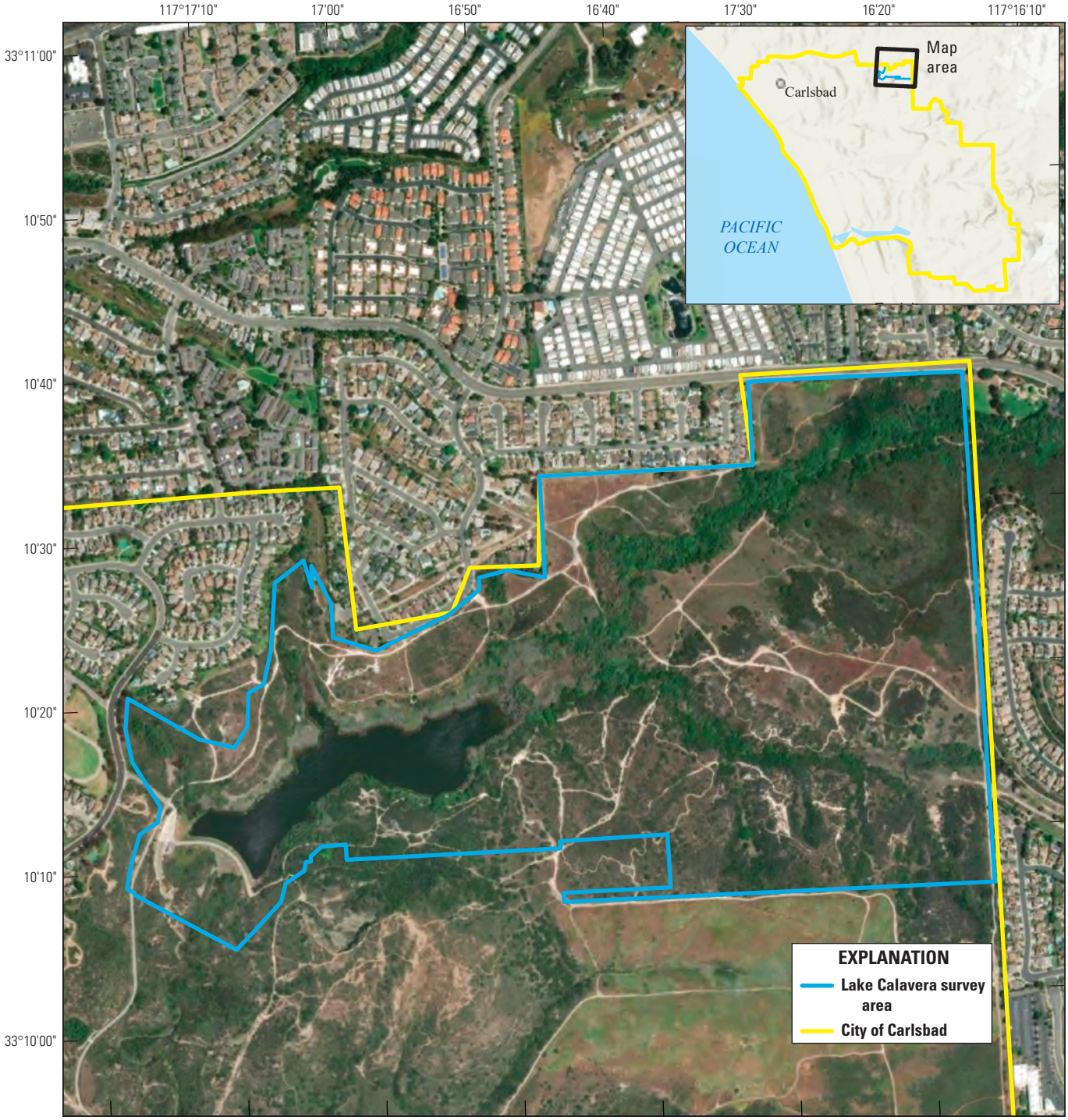

Figure 2. Southwestern Willow Flycatcher (*Empidonax traillii extimus*) survey area at Lake Calavera, City of Carlsbad Preserve, San Diego County, California, 2025.

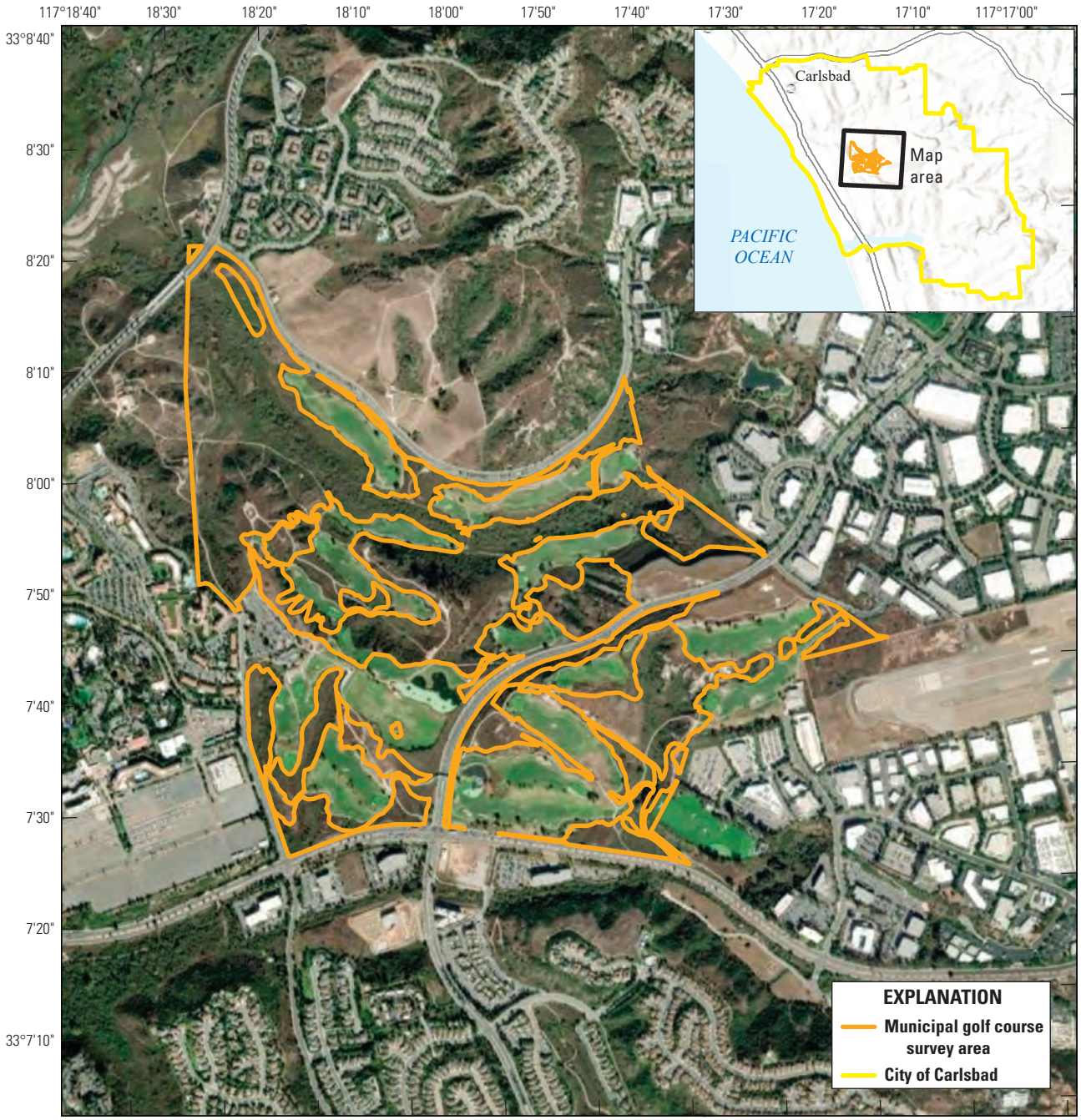

Figure 3. Southwestern Willow Flycatcher (*Empidonax traillii extimus*) survey area at Municipal Golf Course, City of Carlsbad Preserve, San Diego County, California, 2025.

Figure 4. Southwestern Willow Flycatcher (*Empidonax traillii extimus*) survey area at Poinsettia Park, City of Carlsbad Preserve, San Diego County, California, 2025.

Figure 5. Southwestern Willow Flycatcher (*Empidonax traillii extimus*) survey area at Lagoon Lane, City of Carlsbad Preserve, San Diego County, California, 2025.

Figure 6. Southwestern Willow Flycatcher (*Empidonax traillii extimus*) survey area at Carrillo Ranch, City of Carlsbad Preserve, San Diego County, California, 2025.

Results

One Willow Flycatcher of unknown subspecies was detected at the Lake Calavera survey area on June 9, 2025 (table 1; fig. 7). The transient Willow Flycatcher was observed in the northeast portion of the survey area and occupied willow riparian habitat dominated by red willow, arroyo willow, and sandbar willow. The flycatcher was not detected again on the following survey.

Table 1. Survey dates and results of Willow Flycatcher (*Empidonax traillii*) surveys at the City of Carlsbad Preserve, City of Carlsbad, San Diego County, California, 2025.

[mm/dd/yyyy, month/day/year]

Survey area	Survey 1 (mm/dd/yyyy)	Survey 2 (mm/dd/yyyy)	Survey 3 (mm/dd/yyyy)	Number of Willow Flycatcher detected
Lake Calavera	05/16/2025	06/09/2025	06/26/2025	1 (Survey 2)
Municipal Golf Course	05/16/2025	06/13/2025	06/30/2025	0
Poinsettia Park	05/23/2025	06/13/2025	06/30/2025	0
Lagoon Lane	05/23/2025	06/09/2025	06/26/2025	0
Carrillo Ranch	05/23/2025	06/09/2025	06/26/2025	0

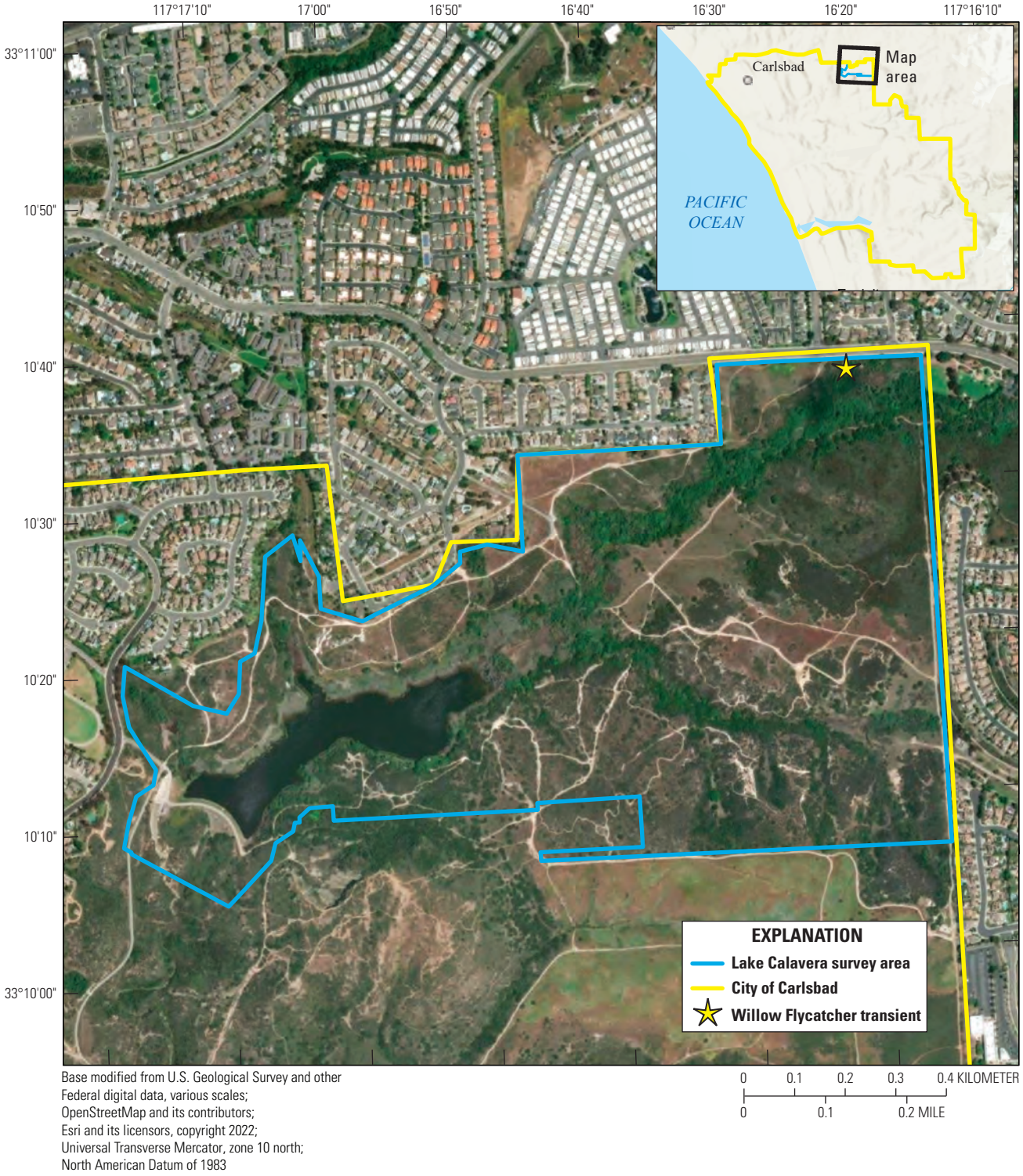

Figure 7. Willow Flycatcher (*Empidonax traillii*) detection and breeding status at Lake Calavera, City of Carlsbad Preserve, San Diego County, California, 2025.

Summary

No breeding flycatchers were detected in 2025 at any of the five survey areas at the City of Carlsbad Preserve. However, the detection of one transient Willow Flycatcher at the Lake Calavera survey area suggests the vegetation may provide suitable habitat for flycatchers. In addition, the Municipal Golf Course survey area also supports some suitable habitat, and water was present at Lake Calavera and the Municipal Golf Course survey areas for the entire survey period. The vegetation at Poinsettia Park, Lagoon Lane, and Carrillo Ranch was limited and likely does not provide suitable breeding habitat for flycatchers. However, the vegetation may provide some stopover habitat for migrating flycatchers.

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For more information concerning the research in this report, contact the

Director, Western Ecological Research Center
U.S. Geological Survey
3020 State University Drive East
Sacramento, California 95819
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