

Ecosystems Mission Area—Species Management Research Program

**Distribution and Abundance of Least Bell's Vireo
(*Vireo bellii pusillus*) and Southwestern Willow Flycatcher
(*Empidonax traillii extimus*) at the Sepulveda Dam Basin,
Los Angeles County, California—2025 Data Summary**



Data Report 1219

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

Cover. Photograph of Sepulveda Dam basin showing riparian habitat and non-native vegetation.
Photograph by Scarlett Howell, U.S. Geological Survey, June 11, 2025.

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By Lisa Allen and Barbara E. Kus

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Conversion Factors

International System of Units to U.S. customary units

Multiply	By	To obtain
Length		
kilometer (km)	0.6214	mile (mi)
Area		
hectare (ha)	2.471	acre

Datum

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

Abbreviations

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey

Distribution and Abundance of Least Bell's Vireo (*Vireo bellii pusillus*) and Southwestern Willow Flycatcher (*Empidonax traillii extimus*) at the Sepulveda Dam Basin, Los Angeles County, California—2025 Data Summary

By Lisa Allen and Barbara E. Kus

Executive Summary

We surveyed for Least Bell's Vireos (*Vireo bellii pusillus*; vireo) and Southwestern Willow Flycatchers (*Empidonax traillii extimus*; flycatcher) along Bull Creek, Haskell Creek, and the Los Angeles River (Sepulveda Dam project area) in Los Angeles County, California, in 2025. Four vireo surveys were completed between April 16 and July 2, 2025, and three flycatcher surveys were completed between May 21 and July 2, 2025. We found 11 territorial male vireos, 4 of which were confirmed as paired, and 3 transient vireos. Of the 11 territorial vireos, 6 were detected along the Los Angeles River, 3 along Haskell Creek, and 2 along Bull Creek. Forty-three percent of vireos were detected in habitat characterized as mixed willow riparian, and most vireos were detected in habitat with greater than 50-percent native plant cover. No flycatchers were observed in the Sepulveda Dam project area in 2025.

Introduction

The Least Bell's Vireo (*Vireo bellii pusillus*; vireo) is a small, migratory songbird that breeds in southern California and northwestern Baja California, Mexico, from April through July (Kus and others, 2022). Historically abundant within lowland riparian ecosystems, vireo populations began declining in the late 1900s as a result of multiple anthropogenic factors, including habitat loss and alteration associated with urbanization and agricultural conversion of land adjacent to rivers, the expansion in range of the brood-parasitic Brown-headed Cowbird (*Molothrus ater*; cowbird), and the introduction of invasive exotic plant species, such as giant reed (*Arundo donax*), into riparian systems (U.S. Fish and Wildlife Service, 1986, 1998; Franzreb, 1989; Kus, 1998, 1999; Riparian Habitat Joint Venture, 2004; Kus and

others, 2022). By 1986, the vireo population in California numbered just 300 territorial males (U.S. Fish and Wildlife Service, 1986).

In response to the considerable decline in vireo numbers in California, the California Fish and Game Commission listed the species as endangered in 1980 (California Natural Diversity Database, 2026), and the U.S. Fish and Wildlife Service (USFWS) followed suit in 1986 (U.S. Fish and Wildlife Service, 1986). Since listing, the vireo population in southern California has rebounded, largely in response to cowbird control and habitat restoration and preservation (Kus and Whitfield, 2005). As of 2006, the statewide vireo population was estimated to be approximately 2,500–3,000 territories (U.S. Fish and Wildlife Service, 2006).

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, 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, brood-parasitism by cowbirds (Wheelock, 1912; Willett, 1912, 1933; Grinnell and Miller, 1944; Remson, 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 (California Natural Diversity Database, 2026) and by the USFWS in 1995 (U.S. Fish and Wildlife Service, 1993). 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 vireos. 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 flycatchers in California were 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 six pairs (U.S. Fish and Wildlife Service, 2014).

The purpose of this report is to summarize the results of vireo and flycatcher surveys completed by the U.S. Geological Survey (USGS) at the Sepulveda Dam basin, Los Angeles County, California, in 2025. These data will inform natural resource managers about the status of these endangered species at the Sepulveda Dam basin and help to guide land use and management practices as appropriate to support the species' survival.

Methods

Study Area

The Sepulveda Dam in Los Angeles, California, was completed by the U.S. Army Corps of Engineers in 1941 with the primary purpose of flood risk management and the secondary purpose of recreation. The Sepulveda Dam basin is comprised of more than 800 hectares (ha) west of Interstate 405 and north of U.S. Highway 101. The study area is in the Sepulveda Dam basin (Sepulveda Dam project area) along a 4-kilometer (km) stretch of the Los Angeles River, a 2-km stretch of Haskell Creek, and a 1-km stretch along Bull Creek (fig. 1). These stretches of river are surrounded by recreational areas and contain narrow strips of riparian habitat comprised of native and non-native species. Disturbances, such as anthropogenic influences, fire, and invasive exotic plants, are pervasive throughout the study area.

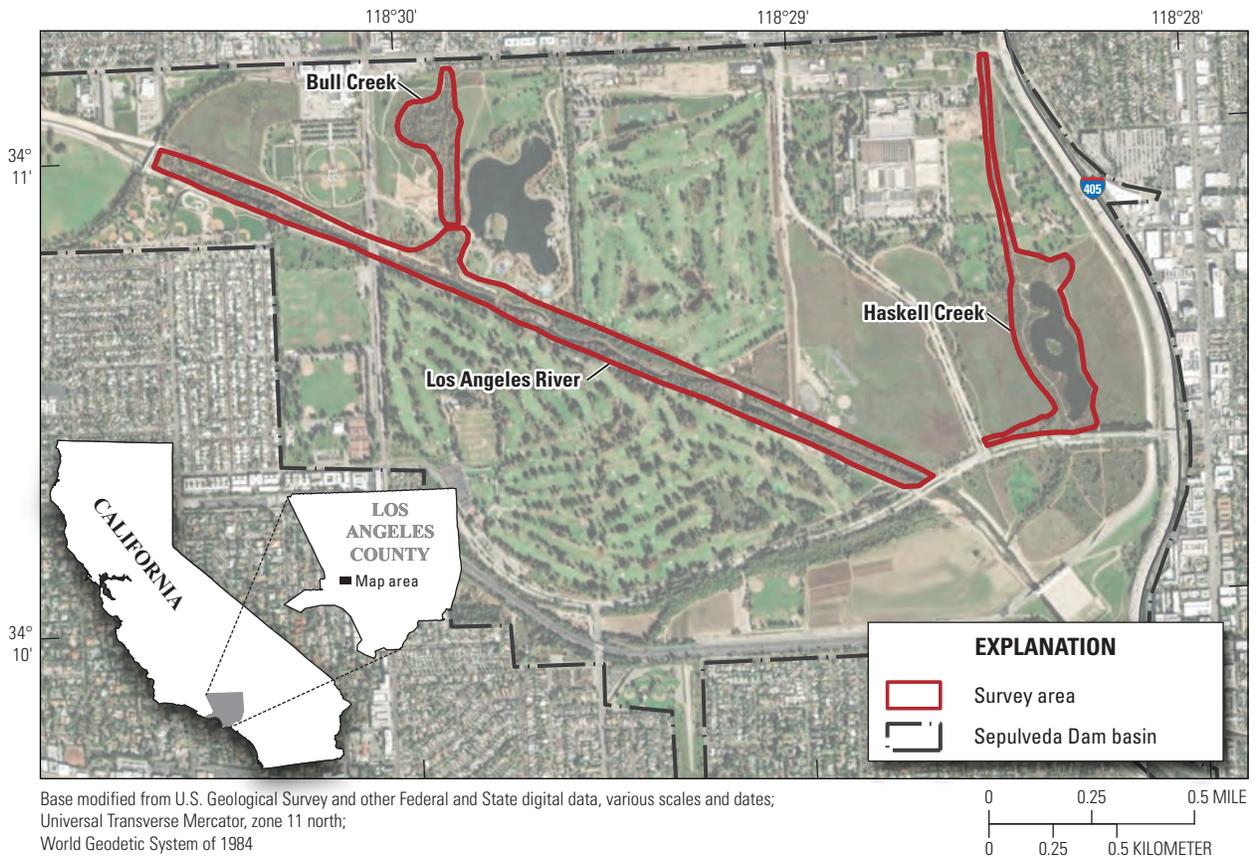


Figure 1. Locations of Least Bell's Vireo (*Vireo bellii pusillus*) and Southwestern Willow Flycatcher (*Empidonax traillii extimus*) survey sites in the Sepulveda Dam project area, Los Angeles County, California, 2025.

Surveys

Biologists from the USGS surveyed for vireos and flycatchers in the Sepulveda Dam project area following standard survey techniques (U.S. Fish and Wildlife Service, 2001; Sogge and others, 2010). Four vireo surveys of the project area were completed between April 16 and July 2, 2025, and three flycatcher surveys were completed between May 21 and July 2, 2025. Observers walked slowly through or adjacent to suitable riparian habitat, listening and searching for vireos and flycatchers, systematically playing a recording of a vireo or flycatcher song to elicit a territorial response. Surveys typically began at sunrise and were completed by early afternoon, depending on wind and weather conditions. Vireo and flycatcher surveys were completed by USGS biologists Scarlett Howell and Suellen Lynn under Federal 10(a)1(A) Recovery Permit ESPER0004050_0.3.

For each vireo or flycatcher encountered, observers recorded age (adult or juvenile), sex, breeding status (paired or undetermined), and if the bird was banded. A male was considered paired if a female was visually detected with the male, 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 vireo or flycatcher was considered transient if detected only once. Vireo and flycatcher locations were recorded using Esri Field Maps (Esri, 2025) on mobile phones with a built-in Global Positioning System to determine geographic coordinates (World Geodetic System of 1984).

Dominant native and exotic plants were recorded, and percent cover of exotic vegetation was estimated using categories of less than 5 percent, 5–50 percent, 51–95 percent, and greater than 95 percent. The overall habitat type within the territory was specified according to the following categories:

Mixed willow riparian: Habitat dominated by one or more willow species, including Goodding’s black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*), with mule fat (*Baccharis salicifolia*) as a frequent co-dominant.

Willow-cottonwood: Willow riparian habitat in which Fremont cottonwood (*Populus fremontii*) is a co-dominant.

Willow-sycamore: Willow riparian habitat in which California sycamore (*Platanus racemosa*) is a co-dominant.

Riparian scrub: Dry and (or) sandy habitat dominated by sandbar willow (*Salix exigua*) or mule fat, with few other woody species.

Upland scrub: Coastal sage scrub adjacent to riparian habitat.

Non-native: Areas vegetated primarily with non-native species, such as giant reed and tamarisk (*Tamarix ramosissima*).

Results

A total of 11 territorial male vireos and 3 transient vireos were detected in 2025 (tables 1, 2; fig. 2). Of the 11 territorial vireos, 4 were confirmed as paired, and 7 were of undetermined status. No banded birds were detected, and no juvenile vireos were detected during surveys (table 2). Cowbirds were abundant throughout the project area and detected on every survey. One incident of cowbird parasitism was detected on July 7, 2025, when a vireo pair was observed feeding a cowbird fledgling. No cowbird trapping was done in the Sepulveda Dam project area during the 2025 surveys.

Vireos were found in four habitat types, with 43 percent of vireo territories occurring in mixed willow riparian habitat and 36 percent occurring in willow-cottonwood. Fourteen percent of vireos were detected in riparian scrub, and 7 percent were in willow-sycamore habitat (table 3). Of the vireo territories, 93 percent occurred in habitat comprised of greater than 50-percent native plant cover. The one territory in habitat with less than 50-percent native vegetation was in an area co-dominated by willows and exotic castor bean (*Ricinus communis*; table 4).

No flycatchers were detected during surveys in 2025.

Table 1. Number and breeding status of territorial male Least Bell’s Vireos (*Vireo bellii pusillus*) detected in the Sepulveda Dam project area, Los Angeles County, California, 2025.

Subarea	Number of paired males	Number of males with undetermined status	Total territorial males	Number of transients
Bull Creek	2	0	2	0
Haskell Creek	1	2	3	0
Los Angeles River	1	5	6	3
Total	4	7	11	3

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Table 2. Location, breeding status, and band status of Least Bell's Vireos (*Vireo bellii pusillus*) detected in the Sepulveda Dam project area, Los Angeles County, California, 2025.

[ID, identification; —, none]

Territory ID	Latitude	Longitude	Breeding status	Male banded	Female banded
SB01	34.17380	-118.48448	Unknown	No	—
SB02	34.17219	-118.48203	Unknown	No	—
SB03	34.17789	-118.47313	Unknown	No	—
SB04	34.17319	-118.47209	Pair	No	No
SB05	34.17753	-118.47404	Unknown	No	—
SB06	34.18453	-118.49778	Pair	No	No
SB07	34.18064	-118.50380	Pair	No	No
SB08	34.17466	-118.48564	Transient	No	—
SB09	34.18222	-118.50701	Unknown	No	—
SB10	34.17188	-118.48007	Unknown	No	—
SB12	34.18383	-118.49875	Pair	No	No
SB14	34.17150	-118.47934	Unknown	No	—
SB16	34.17600	-118.49021	Transient	No	—
SB18	34.17729	-118.49326	Transient	No	—

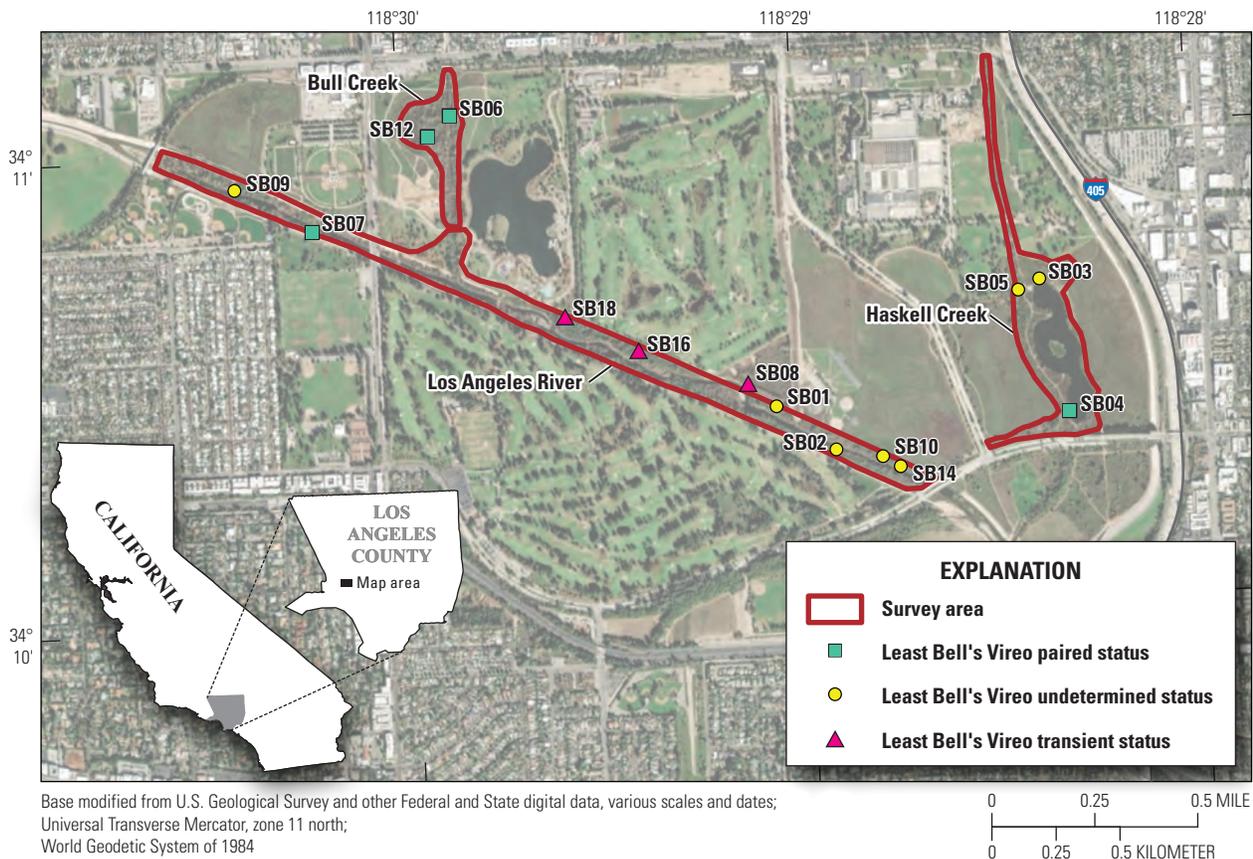


Figure 2. Least Bell's Vireo (*Vireo bellii pusillus*) detections and breeding status on Bull Creek, Haskell Creek, and the Los Angeles River, Sepulveda Dam project area, Los Angeles County, California, 2025.

Table 3. Habitat types used by Least Bell's Vireo (*Vireo bellii pusillus*) in the Sepulveda Dam project area, Los Angeles County, California, 2025.

[**Willow-cottonwood:** Willow riparian habitat in which Fremont cottonwood is a co-dominant. **Mixed willow riparian:** Habitat dominated by one or more willow species, including Goodding's black willow, arroyo willow, and red willow, with mule fat as a frequent co-dominant. **Riparian scrub:** Dry or sandy habitat dominated by sandbar willow or mule fat, with few other woody species. **Willow-sycamore:** Willow riparian habitat in which California sycamore is a co-dominant. **Abbreviations:** <, less than; >, greater than]

Habitat type	Number of vireo territories				Total
	<5-percent native vegetation	5 to 50-percent native vegetation	51 to 95-percent native vegetation	>95-percent native vegetation	
Mixed willow riparian	0	1	¹ 4	1	6
Willow-cottonwood	0	0	1	4	5
Riparian scrub	0	0	1	1	2
Willow-sycamore	0	0	1	0	1
Total	0	1	7	6	14

¹Includes three transients.

Table 4. Vegetation composition of Least Bell's Vireo (*Vireo bellii pusillus*) territories in the Sepulveda Dam project area, Los Angeles County, California, 2025.

[**Riparian scrub:** Dry or sandy habitat dominated by sandbar willow or mule fat, with few other woody species. **Willow-cottonwood:** Willow riparian habitat in which Fremont cottonwood is a co-dominant. **Willow-sycamore:** Willow riparian habitat in which California sycamore is a co-dominant. **Mixed willow riparian:** Habitat dominated by one or more willow species, including Goodding's black willow, arroyo willow, and red willow, with mule fat as a frequent co-dominant. **Abbreviations:** >, greater than; —, none]

Territory	Habitat type	Dominant species	Percentage native cover	Dominant exotic species
SB01	Riparian scrub	Sandbar willow	>95	—
SB02	Riparian scrub	Sandbar willow	51 to 95	Poison hemlock (<i>Conium maculatum</i>)
SB03	Willow-cottonwood	Red or arroyo willow	>95	—
SB04	Willow-cottonwood	Fremont cottonwood	51 to 95	Black mustard (<i>Brassica nigra</i>)
SB05	Willow-cottonwood	Fremont cottonwood	>95	—
SB06	Willow-cottonwood	Goodding's black willow	>95	—
SB07	Willow-sycamore	California sycamore	51 to 95	Castor bean (<i>Ricinus communis</i>)
SB08	Mixed willow riparian	Red or arroyo willow	51 to 95	Poison hemlock
SB09	Mixed willow riparian	Red or arroyo willow	>95	—
SB10	Mixed willow riparian	Red or arroyo willow	5 to 50	Castor bean
SB12	Willow-cottonwood	Red or arroyo willow	>95	Castor bean
SB14	Mixed willow riparian	Red or arroyo willow	51 to 95	Black mustard
SB16	Mixed willow riparian	Red or arroyo willow	51 to 95	Shamel ash (<i>Fraxinus uhdei</i>)
SB18	Mixed willow riparian	Red or arroyo willow	51 to 95	Castor bean

Summary

In 2025, we documented 11 resident vireo territories at the Sepulveda Dam project area. The population of vireos at the Sepulveda Dam project area was consistent with 2022 when 10 vireo territories were documented (Pottinger and Kus, 2023) but still below the 2018 population when 14 vireo territories were documented (Pottinger and Kus, 2019). Cowbirds were observed throughout the project area, and an incident of parasitism was documented during surveys. No cowbird trapping was done at the Sepulveda Dam project area in 2025. Although no flycatchers were detected in 2025, the vegetation at the Sepulveda Dam project area may provide stopover habitat for migrating flycatchers.

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