

Least Bell's Vireo Protocol Survey of the EPA Radiological Study Area at the Santa Susana Field Laboratory, 2012



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Executive Summary

This report presents the results of a protocol survey for the federally and state endangered least Bell's vireo (*Vireo bellii pusillus*). The survey was conducted on approximately 14 acres of riparian and adjacent upland habitat on the Santa Susana Field Laboratory, Ventura County, in support of the U.S. Environmental Protection Agency's Radiological Characterization of Area IV and the Northern Buffer Zone, as required by U.S. Fish and Wildlife Service Biological Opinion 8-8-10-F-12 (USFWS 2010).

No least Bell's vireos were detected. Brown-headed cowbirds (*Molothrus ater*), a frequent nest parasite of the least Bell's vireo, were observed during the survey, and six special-status bird species listed on the California Department of Fish and Game (CDFG) *Special Animals List* (CDFG 2011) were detected.

Introduction

The least Bell's vireo (vireo) is a small gray migratory songbird whose historical range extended from Baja California, Mexico, to the northern Sacramento Valley of California, and from the California coastal ranges east to Death Valley. Riparian habitat losses and increases in brown-headed cowbird populations starting in the 1930s eventually caused the vireo to become essentially extinct north of the Transverse Ranges of southern California (Grinnell and Miller 1944, Gaines 1974, Goldwasser et al. 1980, Garrett and Dunn 1981, USFWS 1986). The least Bell's vireo was listed as endangered by the California Fish and Game Commission in 1980 and listed as endangered by the U.S. Fish and Wildlife Service (USFWS) in 1986. Critical habitat was designated in 1994 covering approximately 38,000 acres in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego Counties (USFWS 1994). Although still absent from major portions of its historical range, the vireo has responded well to conservation management actions. In a 5-year status review, USFWS (2006) determined that the number of occupied vireo territories had increased ten-fold (291 to 2,968) since the 1986 listing.

The least Bell's vireo is one of four recognized subspecies of Bell's vireo in the United States (AOU 1998). Least Bell's vireos are obligate riparian breeders, nesting along streamcourses typically dominated by willows (*Salix* spp.), cottonwoods (*Populus* spp.), oaks (*Quercus* spp.), and/or mule fat (*Baccharis salicifolia*). The key structural components of suitable breeding habitat are a dense layer of vegetation within 3-6 ft of the ground and a canopy layer (USFWS 1994). Vireos spend the winter in southern Baja California, Mexico, and arrive on breeding grounds in California in March or April (USFWS 1998). Nests are typically built of leaves, bark, willow catkins, and spider webs in a fork of a tree or shrub within 3 feet of the ground (Franzreb 1989). A clutch of 3-4 eggs is incubated by both parents for 14 days, and nestlings leave the nest at about 12-14 days, after which time they are cared for by the parents for another 2 weeks or more. Vireos may make multiple nesting attempts after nest failure but typically produce no more than one successful clutch during a season (Franzreb 1989). Most vireos leave the breeding grounds for Mexico by late September or earlier (Franzreb 1989).

In 2010 the U.S. Environmental Protection Agency (EPA) began conducting a radiological characterization of a portion of the Santa Susana Field Laboratory (SSFL), located in the Simi Hills of eastern Ventura County, California (HGL and Envicom 2011). The two areas at SSFL being characterized are Area IV, a 290-acre administrative section where the U.S. Department of Energy and its contractors once operated several nuclear reactors and associated fuel facilities and laboratories, and the Northern Buffer Zone (NBZ), a 182-acre area with no history of development that lies adjacent to Area IV. Potential least Bell's vireo habitat areas were described by HGL and Envicom (2010a, 2010b). No designated critical habitat for the vireo occurs in the EPA study area (USFWS 1994). The U.S. Fish and Wildlife Service issued Biological Opinion 8-8-10-F-12 (USFWS 2010), which restricted EPA activities within potential least Bell's vireo habitat during the nesting season of March 15 to September 30, unless a Section 10(a)(1)(A) permitted biologist conducted a protocol-level survey for the vireo and absence was determined.

In eastern Ventura County and western Los Angeles County, least Bell's vireos are listed in the CNDDB as recently occurring along Arroyo Simi, Arroyo Santa Rosa/Arroyo Conejo, Santa Clara River near Piru and Santa Clarita, and Sepulveda Basin Wildlife Area (CDFG 2012). The purpose of this survey was to determine presence or absence of the vireo within the EPA study area (Area IV and the NBZ) on SSFL.

Methods

Two areas within the EPA study area that had been previously identified as potential least Bell's vireo habitat were passively surveyed for least Bell's vireo by Scott Werner (biologist), Principal Biologist of Werner Biological Consulting. Mr. Werner holds a U.S. Fish and Wildlife Service Recovery Permit # 179013-1 issued under Section 10(a)(1)(A) of the Endangered Species Act, authorizing take (locating and monitoring nests) of the Least Bell's Vireo, although the survey methodology did not require implementation of the permit (no take of the vireo occurred or was expected to occur). Mr. Werner was one of the primary biological monitors working on the EPA Radiological Study from 2010 to 2012 and was familiar with the EPA activities and biological surveys that had previously been conducted in the habitat areas.

Survey methodology followed the protocol described in *Least Bell's Vireo Survey Guidelines* (USFWS 2001). Eight surveys were conducted 10 to 11 days apart from April 10 to June 21 (Table 1). Surveys were conducted between dawn and 11:00 am under fair weather conditions. The biologist slowly walked the edges and the interior of the woodland, recording all avian species by sight and sound (Table 2) and making frequent stops to listen for vireos. A pair of Leica 10x42 binoculars was used for visual identification of avian species. James Anderson, biologist at Envicom Corporation, accompanied Mr. Werner during six of the eight surveys.

Habitat Area 1

An intermittent stream and an associated buffer in Subarea 5B was initially described as potential least Bell's vireo habitat in the Biological Assessment for the EPA Radiological Study (HGL and Envicom 2010a) and is shown in Figure 1. Because this patch bordered a larger, more suitable habitat patch to the south, the biologist delineated Habitat Area 1 as the above-described patch on Area IV (Subarea 5B), and approximately 600 linear feet of riparian vegetation on Area III (Figure 2). The survey area totaled approximately 8 acres, which included the riparian corridor and surrounding upland vegetation. The patch within Area IV was a sparsely vegetated intermittent channel dominated by coyote brush (*Baccharis pilularis*), with associated arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), mule fat (*Baccharis salicifolia*), coast live oak (*Quercus agrifolia*), and non-native grasses and forbs (Figure 3). This patch had been trimmed during EPA activities in 2010 (HGL and Envicom 2010b). The patch within Area III consisted of a more extensive thicket of willows with a dry streambed (Figure 4). This second patch was outside of the EPA trimming footprint.

Habitat Area 2

Habitat Area 2 was described by HGL and Envicom (2011) and was located mainly within Area IV (Subarea 6), extending peripherally into Area III (Figure 5). The survey area totaled approximately 6 acres, which included the riparian corridor and surrounding upland vegetation. This area was located in a small canyon surrounded by sandstone outcrops. The canopy layer consisted of willows and coast live oak snags apparently burned in the 2005 Topanga Fire (HGL and Envicom 2010a) above a dense understory of mule fat, poison oak (*Toxicodendron diversilobum*), yerba santa (*Eriodictyon crassifolium*), and non-native Italian thistle (*Carduus pycnocephalus*) (Figure 6). The streambed at this site contained standing water on 10 April and 20 April, 2012, but was dry thereafter. Most of Habitat Area 2 had already been lightly trimmed during EPA activities in 2011 (HGL and Envicom 2011). The southern,

downstream, portion of Habitat Area 2 was part of a relatively extensive stand of mule fat located upstream of a perennial wetland within Area III (Figures 5, 7).

Results

Least Bell's Vireo

No least Bell's vireos were detected.

Brown-headed Cowbird

Only three brown-headed cowbirds were observed during the survey. Single female cowbirds were observed in Habitat Area 2 on 20 April and 30 April. A male cowbird was observed in this area on 11 June. These low numbers and the lack of parasitism observed during nesting bird surveys associated with the EPA project (HGL and Envicom 2011) suggest that cowbird parasitism rates may be low within Area IV.

Special-status Species

Two California Department of Fish and Game (CDFG) Watchlist species (CDFG 2011) were observed during the survey: Cooper's hawk (*Accipiter cooperii*) and rufous-crowned sparrow (*Aimophila ruficeps*), which was presumably the *A. r. canescens* subspecies due to its geographic location. An inactive nest strongly resembling that of a Cooper's hawk was located in a coast live oak in Habitat Area 1 on 30 April. An adult Cooper's hawk was keeping near the nest site on that day, but follow-up visits confirmed that the nest remained inactive. Four USFWS Bird Species of Conservation Concern (CDFG 2011) were observed during the survey: Allen's hummingbird (*Selasphorus sasin*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), and Lawrence's goldfinch (*Spinus lawrencei*), and an oak titmouse nest was observed in Habitat Area 1 on 20 April. Four species on the American Bird Conservancy's U.S. Watch List of Bird of Conservation Concern (CDFG 2011) were observed: Costa's hummingbird (*Calypte costae*), Nuttall's woodpecker, oak titmouse, and Lawrence's goldfinch.

Conclusion

A protocol survey for least Bell's vireo in approximately 14 acres previously identified as potential vireo habitat was conducted from 10 April to 21 June, 2012, with negative results. The least Bell's vireo is considered absent from Area IV and the NBZ in the context of the EPA Radiological Study.

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Tables and Figures

Table 1. Summary of Least Bell's Vireo survey dates, times, and conditions.

Survey #	Date	Time		Temp. (°F)		Clouds (%)		Wind (mph)	
		Start	Stop	Start	Stop	Start	Stop	Start	Stop
1	10-Apr	0805	1030	60	73	0	0	5	5
2	20-Apr	0745	1000	70	78	0	0	0	0
3	30-Apr	0930	1100	60	70	60	5	0	0
4	10-May	0800	1020	65	75	90	10	0	5
5	21-May	0815	1010	75	82	0	0	0	5
6	31-May	0800	1008	70	78	0	0	0	0
7	11-Jun	0820	1018	65	75	100	0	2	5
8	21-Jun	0800	1020	60	70	100	90	0	0

Table 2. List of avian species observed during the 8 survey visits. Bold type indicates a special-status species, as listed in CDFG's *Special Animals List* (CDFG 2011).

Common Name	Scientific Name
California quail	<i>Callipepla californica</i>
Great blue heron	<i>Ardea herodias</i>
Turkey vulture	<i>Cathartes aura</i>
Cooper's hawk¹	<i>Accipiter cooperii</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
American kestrel	<i>Falco sparverius</i>
Killdeer	<i>Charadrius vociferus</i>
Rock pigeon	<i>Columba livia</i>
Mourning dove	<i>Zenaida macroura</i>
White-throated swift	<i>Aeronautes saxatalis</i>
Anna's hummingbird	<i>Calypte anna</i>
Costa's hummingbird²	<i>Calypte costae</i>
Allen's hummingbird³	<i>Selasphorus sasin</i>
Acorn woodpecker	<i>Melanerpes formicivorus</i>
Nuttall's woodpecker^{2,3}	<i>Picoides nuttallii</i>
Western wood-pewee	<i>Contopus sordidulus</i>
Black phoebe	<i>Sayornis nigricans</i>
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>
Western kingbird	<i>Tyrannus verticalis</i>
Warbling vireo	<i>Vireo gilvus</i>
Western scrub-jay	<i>Aphelocoma californica</i>
American crow	<i>Corvus brachyrhynchos</i>
Common raven	<i>Corvus corax</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Oak titmouse^{2,3}	<i>Baeolophus inornatus</i>
Bushtit	<i>Psaltiriparus minimus</i>
White-breasted nuthatch	<i>Sitta carolinensis</i>
Rock wren	<i>Salpinctes obsoletus</i>
Canyon wren	<i>Catherpes mexicanus</i>
Bewick's wren	<i>Thryomanes bewickii</i>
House wren	<i>Troglodytes aedon</i>
Ruby-crowned Kinglet	<i>Regulus calendula</i>
Wrentit	<i>Chamaea fasciata</i>
California thrasher	<i>Toxostoma redivivum</i>

Common Name	Scientific Name
European starling	<i>Sturnus vulgaris</i>
Phainopepla	<i>Phainopepla nitens</i>
Orange-crowned warbler	<i>Oreothlypis celata</i>
Common yellowthroat	<i>Geothlypis trichas</i>
Townsend's warbler	<i>Setophaga townsendi</i>
Wilson's warbler	<i>Cardellina pusilla</i>
Spotted towhee	<i>Pipilo maculatus</i>
California towhee	<i>Melospiza crissalis</i>
Rufous-crowned sparrow¹	<i>Aimophila ruficeps</i>
Lark sparrow	<i>Chondestes grammacus</i>
Song sparrow	<i>Melospiza melodia</i>
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Blue grosbeak	<i>Passerina caerulea</i>
Lazuli bunting	<i>Passerina amoena</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Hooded oriole	<i>Icterus cucullatus</i>
House finch	<i>Carpodacus mexicanus</i>
Lesser goldfinch	<i>Spinus psaltria</i>
Lawrence's goldfinch^{2,3}	<i>Spinus lawrencei</i>

¹ CDFG: Watchlist Species

² American Bird Conservancy: United States Watch List of Birds of Conservation Concern

³ USFWS: Bird Species of Conservation Concern

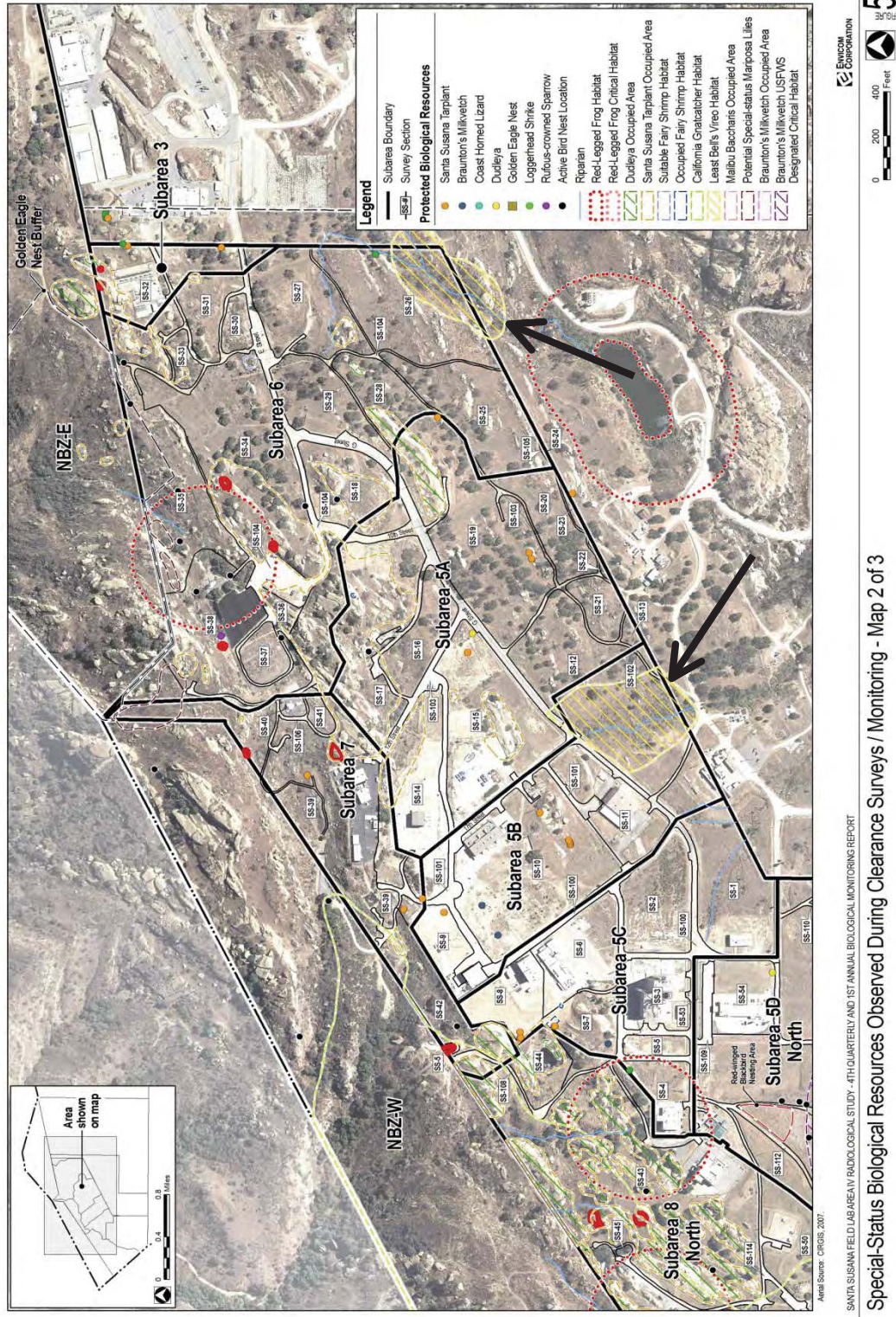


Figure 1. Two least Bell's vireo habitat areas surveyed in 2012 (yellow hashed polygons with black arrows) on Area IV of Santa Susana Field Laboratory. Source: HGL and Envirom (2011).



Figure 2. Aerial photo of least Bell's vireo Habitat Area #1 in Area IV (Subarea 5B) and Area III.



Figure 3. Least Bell's vireo Habitat Area #1 in Area IV (Subarea 5B).



Figure 4. Least Bell's vireo Habitat Area #1 in Area III.



Figure 5. Aerial photo of least Bell's vireo Habitat Area #2 in Area IV (Subarea 6) and Area III.



Figure 6. Least Bell's vireo Habitat Area #2 in Area IV (Subarea 6).



Figure 7. Least Bell's vireo Habitat Area #2 looking south toward Area III.