

## **APPENDIX C**

# **LAKE WOHLFORD DAM REPLACEMENT PROJECT BIOLOGICAL TECHNICAL REPORT**



**BIOLOGICAL TECHNICAL REPORT  
FOR THE  
LAKE WOHLFORD DAM REPLACEMENT PROJECT**

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## EXECUTIVE SUMMARY

The City of Escondido (City) is planning to construct a replacement for Lake Wohlford Dam. A 2007 seismic analysis of the dam identified a stability concern for the raised portion of the dam in the event of a major earthquake. As a result, the City reduced the reservoir's water level to limit the risk of a potential failure. The water level reduction decreased the reservoir's capacity to approximately 40% of its prior size. To improve the dam's seismic safety and regain the lost water storage capability, the City is planning to construct a replacement dam downstream (west) of the existing dam and partially or completely deconstruct the existing dam. Replacing the dam would require replacement or modification of the existing dam's outlet tower and associated pipes beneath the dam. To accommodate the replacement dam's configuration, the project would also entail realignment of the portion of Oakvale Road that passes the southern dam abutment. This portion of the road would be realigned south of its current location, requiring excavation into the adjacent hillside. The project would allow the City to regain the lost water storage capability and capacity. No changes to the 1,480-foot spillway crest elevation of the existing dam are proposed. Therefore, no changes to the historic high water level of Lake Wohlford are proposed.

The project site is located approximately 7 miles east of Interstate 15 and 2 miles east of Valley Center Road. The majority of the land around the lake is owned by the City of Escondido (City) and is within the City's draft Multiple Habitat Conservation Program (MHCP), but it is not within the City's jurisdictional boundaries. The project site is located within the County of San Diego North County Multiple Species Conservation Program (NCMSCP) and the City's draft MHCP planning areas. However, because both of these plans are in draft form, they do not have regulatory applicability to the project and are discussed for information purposes. The County of San Diego's Biological Mitigation Ordinance (BMO) is used in this report to assess the project's habitat impacts and identify habitat-based mitigation.

The Biological Study Area (BSA) addressed in this report consists of the project's impact area plus an approximately 500-foot buffer. The project's impact areas include approximately 33.64 acres that would be disturbed by project construction (referred to as the limits of disturbance or LOD). In addition to this direct impact area, the BSA includes land within the 1,480-foot elevation maximum reservoir level after completion of the project, which is the same elevation as before the mandated drawdown, and an approximately 500-foot buffer around the 1,480-foot contour. This area would be subject to reinundation following the project and is analyzed for potential indirect impacts on plant and wildlife species. Because the potential inundation would return the reservoir to its pre-project conditions and no new land would be submerged by the

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project, the area within the maximum reservoir level is not included in the project's direct habitat impacts.

Biological resources fieldwork consisted of vegetation mapping; special-status plant surveys; a general wildlife inventory; protocol surveys for coastal California gnatcatcher (*Polioptila californica*; CAGN), least Bell's vireo (*Vireo bellii pusillus*; LBV), and southwestern willow flycatcher (*Empidonax traillii*; SWFL); focused surveys for bat species; and a delineation of wetlands and waters that would be jurisdictional of federal and state resource agencies.

Fifteen vegetation communities and land cover types (six riparian and wetlands communities, eight uplands communities, and one other cover type) were mapped within the BSA: emergent wetland, freshwater marsh, lakeshore, open water, southern willow scrub, coast live oak riparian forest, coast live oak woodland, Diegan coastal sage scrub, Engelmann oak woodland, eucalyptus woodland, nonnative grassland, ornamental woodland, southern mixed chaparral, valley needlegrass grassland, and urban/developed.

Project implementation would result in an impact on habitat due to construction impacts within the LOD. Direct impacts within the LOD are estimated at 1.25 acres of lakeshore, 2.12 acres of open water, 0.41 acre of southern willow scrub, 2.36 acres of Engelmann oak woodland, 8.01 acres of coast live oak woodland, 4.31 acres of Diegan coastal sage scrub, 2.60 acres of nonnative grassland, 8.58 acres of southern mixed chaparral, and 4.00 acres of urban/developed.

Permanent impacts to sensitive habitats would be mitigated at ratios stated in the BMO, as shown below in Table ES-1. Per the BMO, habitats are assigned a tier according to their ecological value and are assigned ratios, which are lower if mitigation occurs inside a Biological Core and Linkage Area (BCLA) and higher if mitigation occurs outside a BCLA. Open water impacts do not warrant off-site mitigation because they would be fully replaced on-site by open water habitat after completion of construction, and because open water acreage would expand as the existing dam is removed and this area is inundated.

**Table ES-1**  
**Mitigation for Direct Impacts to**  
**Sensitive Vegetation Communities (acres)**

<b>Vegetation Community (BMO Tier)</b>	<b>Total Impacted Acreage</b>	<b>Mitigation Ratio<sup>a</sup></b>	<b>Inside Biological Core Area</b>	<b>Outside Biological Core Area</b>
<b>Riparian and Wetlands (jurisdictional waters)</b>				
Lakeshore (Tier I)	1.25	2:1 to 3:1	2.50	3.75
Open Water (Tier I)	2.12	N/A <sup>b</sup>	0.00	0.00
Southern Willow Scrub (Tier I)	0.41	2:1 to 3:1	0.82	1.23
<b>Subtotal Wetlands</b>	<b>3.78</b>	<b>-</b>	<b>3.32</b>	<b>4.98</b>
<b>Uplands</b>				
Engelmann Oak Woodland (Tier I)	2.36	2:1 to 3:1	4.72	7.08
Coast Live Oak Woodland (Tier I)	8.01	2:1 to 3:1	16.02	24.03
Diegan Coastal Sage Scrub (Tier II)	4.31	1.5:1 to 2:1	6.47	8.62
Nonnative Grassland (Tier I)	2.60	1:1 to 1.5:1	2.60	3.90
Southern Mixed Chaparral (Tier III)	8.58	1:1 to 1.5:1	8.58	12.87
<b>Subtotal Uplands</b>	<b>25.86</b>	<b>-</b>	<b>38.39</b>	<b>56.50</b>
<b>Other Cover Types</b>				
Urban/Developed	4.00 <sup>b</sup>	Not regulated	-	-
<b>Total</b>	<b>33.64</b>	<b>-</b>	<b>41.71</b>	<b>61.48</b>

All acreages are rounded to the nearest hundredth (which may account for minor rounding error).

<sup>a</sup> Lower ratio applies where mitigation occurs inside a BCLA; higher ratio where outside a BCLA.

<sup>b</sup> Open water impacts do not warrant off-site mitigation because they would be fully replaced on-site by open water habitat after completion of construction.

Jurisdictional waters delineations indicate that approximately 10.33 acres of waters of the U.S. and state occur within the LOD. Of this, 3.08 acres are waters of the U.S. and state, considered jurisdictional by the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW), and 7.25 acres are waters of the state only, considered jurisdictional by CDFW. The project would require permits from the jurisdictional agencies, with mitigation required in the form of restoring and/or enhancing wetlands habitat. Recommended wetland habitat mitigation described in this report follows the County BMO, which would address local regulatory requirements. However, state and federal (i.e., CDFW and USACE) regulatory agencies may require additional habitat mitigation, which will be negotiated during the project’s jurisdictional wetlands and waters permitting phase.

One sensitive plant species, Englemann oak (*Quercus englemannii*), was documented within the BSA. Englemann oak does not have any state or federal listing status, but it does appear in the California Native Plant Society’s Inventory of Rare and Endangered Plants as California Rare Plant Rank List 4.2 and is a covered species under the City’s draft MHCP and the draft NCMSCP. Englemann oak was found in both the LOD and in the maximum inundation area, as well as the 500-foot buffer area. The project’s impact on this nonlisted special-status plant

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species would be mitigated to less than significant through acreage-based mitigation for the Engelmann oak woodland habitat type within the LOD.

Habitat assessments were conducted for the BSA based on a review of the California Natural Diversity Database and existing environmental documentation, and a review of the U.S. Fish and Wildlife Service species list. Based on these habitat assessments, it was determined that the BSA did not contain habitats suitable for arroyo toad (*Anaxyrus californicus*) or Stephens' kangaroo rat (*Dipodomys stephensi*), but it did contain suitable habitat for the federally listed threatened CAGN and the federally and state listed LBV and SWFL; however, these three species were not detected during protocol surveys. The federally delisted and state-listed endangered bald eagle (*Haliaeetus leucocephalus*) was documented at Lake Wohlford during CAGN surveys. Six other special-status species were also documented within the BSA during the protocol avian surveys and the focused bat surveys: the CDFW Species of Special Concern yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechial brewsteri*); the CDFW watch list Cooper's hawk (*Accipiter cooperii*) and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and two bat Species of Special Concern, the pallid bat (*Antrozous pallidus*) and the western mastiff bat (*Eumops perotis californicus*). The project's impact on non-listed special-status wildlife species would be mitigated to less than significant through implementation of avoidance, minimization, and mitigation measures, including habitat-based mitigation for indirect impacts and measures that would be implemented during construction to prevent direct and indirect impacts on these species.

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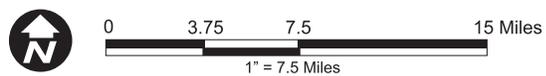
## **CHAPTER 1.0 INTRODUCTION**

### **1.1 PURPOSE OF STUDY AND PROJECT BACKGROUND**

The purpose of this study is to analyze the effects of the proposed Lake Wohlford Dam Replacement Project (project) on biological resources. This study will be used during the environmental regulatory compliance and permitting process. The City of Escondido (City) is lead agency for the project under the California Environmental Quality Act (CEQA) and will use this report in preparation of an Environmental Impact Report and in obtaining environmental permits for the project. The Federal Energy Regulatory Commission (FERC), which has regulatory oversight of Lake Wohlford Dam because of its connection to a downstream hydroelectric generation facility under FERC jurisdiction, is the federal lead agency for purposes of the National Environmental Policy Act.

The project site is located in unincorporated San Diego County, northeast of the jurisdictional limits of the City (Figure 1). Lake Wohlford is a man-made reservoir located along Escondido Creek that is filled by runoff from its 7.3-square-mile drainage area, as well as water released from the Lake Henshaw reservoir, which is diverted from the San Luis Rey River through the 13-mile-long Escondido Canal. Lake Wohlford Dam was originally constructed as a rock-fill structure in 1895 to create a reservoir for the City's municipal water supply. In 1924, the dam was enlarged and raised to expand the reservoir's capacity by placing hydraulic fill upstream and on top of the original rock-fill dam. A 2007 seismic analysis of the dam identified a stability concern for the raised portion of the dam in the event of a major earthquake. As a result, in a September 19, 2007, letter, FERC directed the City to reduce the reservoir's water level to 1,460 feet above mean sea level (AMSL) to limit the risk of a potential failure, and stated the reservoir should not be allowed to rise above 1,460 feet AMSL without prior approval from FERC. To improve the dam's seismic safety and regain the lost water storage capability, the City is planning to construct a replacement dam and partially or completely deconstruct the existing dam. The project is intended to return the reservoir to its previous height and regain lost water storage capacity, but the project would not increase capacity beyond its historic level, so no changes to the historic high water level are proposed.

The Biological Study Area (BSA) addressed in this report consists of the project's impact area and the maximum reservoir level after project construction, plus an approximately 500-foot



**Figure 1**  
**Regional Map**

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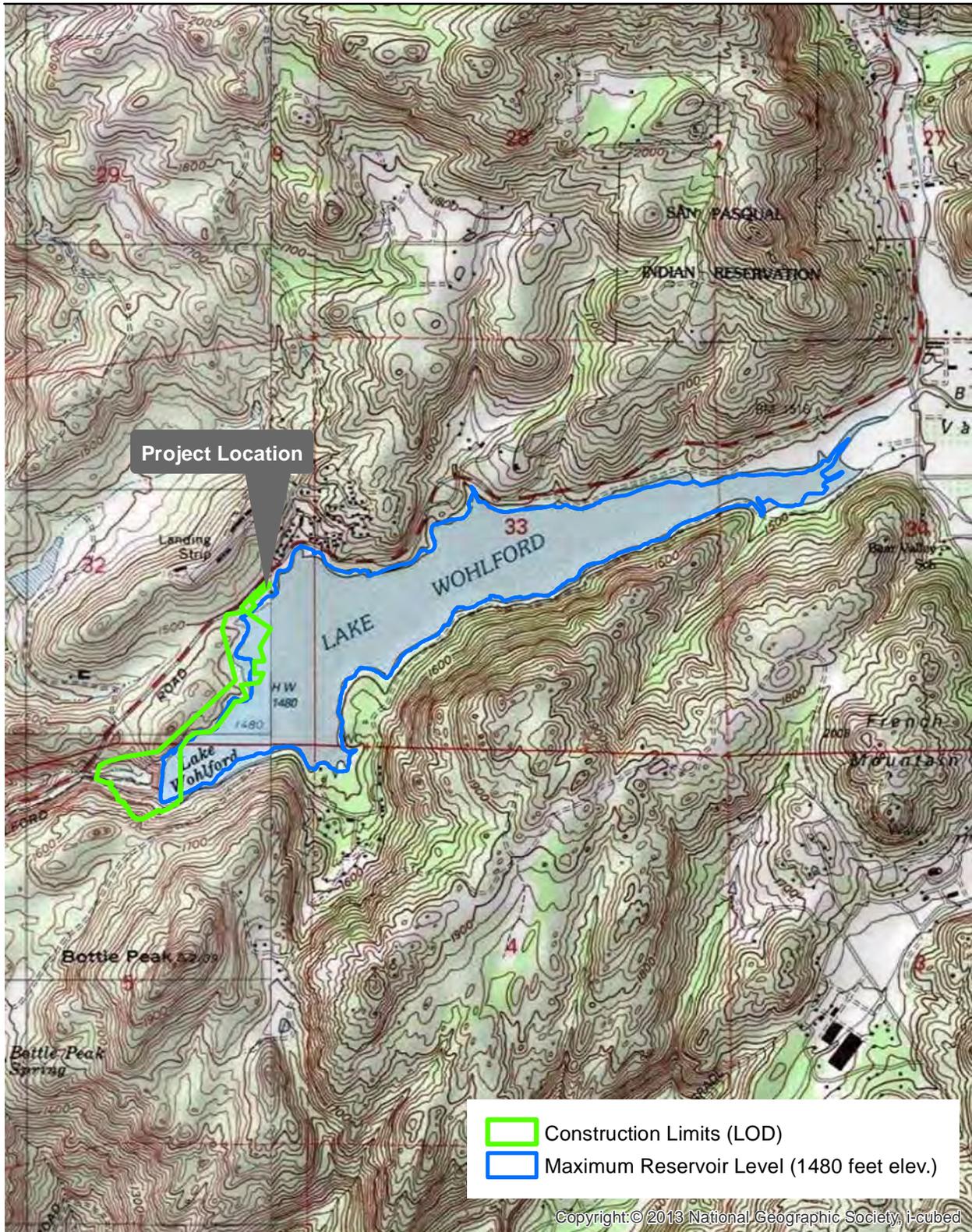
buffer.<sup>1</sup> The project's impact areas include approximately 33.64 acres that would be directly disturbed by project construction activity (referred to as the limits of disturbance or LOD in this report). The BSA also includes an additional 217.35 acres representing the maximum surface area of the reservoir, which is equal to the maximum surface area prior to the mandated drawdown (Figure 2). This is the maximum area that would be subject to reinundation following the project and is analyzed in this report for potential indirect impacts on plant and wildlife species. Because the potential inundation would return the reservoir to its pre-project conditions, where land was subject to seasonal fluctuations in water level, and because no new land would be submerged by the project, the area within the maximum reservoir level is not included in the project's direct habitat impacts.

Within the BSA, AECOM conducted vegetation mapping; rare plant surveys; general wildlife reconnaissance surveys; U.S. Fish and Wildlife Service (USFWS) protocol surveys for coastal California gnatcatcher (*Polioptila californica*; CAGN), least Bell's vireo (*Vireo belli pusillus*; LBV), and southwestern willow flycatcher (*Empidonax traillii*; SWFL); and a jurisdictional wetland delineation. The purpose of the surveys was to inventory and evaluate biological resources found or having the potential to occur within the BSA that could be affected by the proposed project.

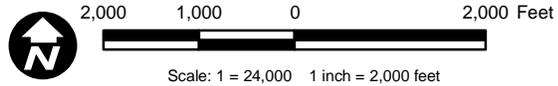
The County of San Diego's draft North County Multiple Species Conservation Program (NCMSCP) and the draft Escondido Subarea Plan are not likely to be approved for several years; therefore, these guiding documents do not have any regulatory standing at this time and are discussed in this report for informational purposes. Because these plans are not in place, the San Diego County Biological Mitigation Ordinance (BMO) (County of San Diego 2010) is used in this report to assess the project's habitat impacts and identify habitat-based mitigation. The BMO includes standards with which to classify vegetation communities into "tiers" with related biological values, and assess mitigation acreages for project impacts by assigning mitigation ratios that are dependent on the location of mitigation lands (i.e., inside versus outside of an identified Biological Core and Linkage Area [BCLA]).

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<sup>1</sup> The buffer area shown as part of the BSA in Figure 2 includes an area that is actually greater than 500 feet around the project's impact area for two reasons. First, the buffer around the construction area was based on a previous LOD that was refined and scaled back as project design progressed; secondly, the 1,480-foot contour used as the maximum reservoir level, which was originally based on USGS topographic mapping from the 1970s, was refined based on topographic survey data performed as part of project engineering design. The previous buffer area remains in the BSA identified in this report for informational purposes because it correctly shows the areas subject to mapping, plant and wildlife surveys, and jurisdictional delineation performed for this project.



Source: USGS 7.5' Topo Quads Rodriguez Mtn 1988 and Valley Center 1975



**Figure 2**  
**Project Vicinity**

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## 1.2 PROJECT DESCRIPTION

### 1.2.1 Project Location

The proposed project's BSA surrounds Lake Wohlford, which is located within an unincorporated area of San Diego County northeast of the incorporated limits of the City of Escondido, approximately 7 miles east of Interstate 15 and 2 miles east of Valley Center Road. Lake Wohlford Road provides access to the northern side of the reservoir, and Oakvale Road skirts the southwestern side of the reservoir. Figure 3a shows an aerial image with the project's BSA; Figure 3b shows the LOD and its respective impact buffer area; and Figure 3c shows the maximum inundation limits with the BSA. The inundation level used in this analysis is based on a topographic contour of 1,480 feet AMSL elevation, which represents the spillway elevation of the replacement dam and, therefore, the maximum reservoir inundation level after completion of the project.<sup>2</sup>

### 1.2.2 Project Purpose

The project is being implemented to regain lost water storage capacity for the City's municipal water system and improve seismic safety of Lake Wohlford Dam.

### 1.2.3 Project Description

The replacement dam is planned to be constructed of roller compacted concrete, which uses the materials of conventionally placed concrete (cement, coarse aggregate, sand, and water), but minimizes water content to allow material handling with conventional soil-placing methods using conveyors, dump trucks, dozers, and roller compactors. The replacement dam is proposed to be constructed immediately downstream of the existing dam, with the replacement dam's crest approximately 200 feet west of the existing dam's crest. Material would be excavated from the downstream canyon floor and rocky slopes to create a solid foundation and suitable surfaces to place the abutments. Excavation may require blasting and hydraulic drilling to remove rock. The new dam crest would rise approximately 125 feet above the foundation grade, to an elevation of 1,490 feet AMSL, and the crest would span approximately 650 feet from the right (north) abutment to the left (south) abutment. A spillway would be constructed of cast-in-place concrete in the center of the dam, with an elevation of 1,480 feet AMSL. It would feature a stepped configuration on the downstream slope to dissipate energy from flowing water in the event of an overtopping of the dam. The spillway would empty into a settling basin constructed of cast-in-

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<sup>2</sup> As 1,480 AMSL is also the spillway crest elevation of the existing dam and represents the maximum elevation of the reservoir prior to the water-level restriction, no project-related change would occur in the reservoir's maximum inundation level.

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place concrete at the foot of the dam, which would hold water before its release into the downstream channel. The dam crest would feature a maintenance access path for pedestrians and vehicles, and a pedestrian access bridge would be constructed over the spillway. A new outlet tower would be constructed on the upstream side of the dam, anchored to the dam's face, and the old outlet tower would be demolished above 1,442 feet AMSL. The old outlet tower below 1,442 feet AMSL and the associated tunnel would be filled and abandon in place. To accommodate the configuration of the replacement dam's left abutment and to provide maintenance access to the replacement dam, the project also entails realignment of a portion of Oakvale Road toward the south, requiring excavation into the adjacent hillside to create room for the realignment (Figure 3b).

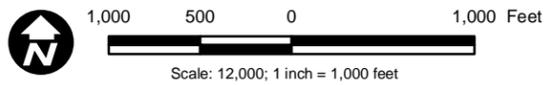
The primary staging area for project construction is planned at the lakeshore area west of the Lake Wohlford Marina. Construction activity would also occur in the canyon downstream of the dam. To enable worker and material access from the staging area to the dam construction zone, the project entails construction of a gravel access road northeast of the existing dam that would be maintained in perpetuity for maintenance and inspection purposes. The road would require some excavation into the hillside to create a level surface for installation of the road. At completion of the project, the road would be removed and the area would be restored.

The replacement dam would be constructed so that the resultant maximum reservoir level and storage capacity are equal to the maximum elevation and capacity prior to the water level restriction, at 1,480 feet elevation and 6,500 acre feet, respectively. The project proposes no changes to Lake Wohlford's historic high water level or storage capacity. After completion of the project and following FERC authorization to fill the reservoir beyond the 1,460 feet AMSL restricted level, the City would have the ability to fill the reservoir up to its 1,480 feet AMSL capacity, but the reservoir would not be immediately filled to full capacity following project completion. Filling the reservoir depends on rainfall within the reservoir's watershed, the availability of water deliveries from Lake Henshaw, and demand for water in the reservoir's service area. Following project completion, the reservoir would return to its pre-drawdown conditions and be subject to seasonal and occasional fluctuation in water levels.



Biological Study Area (BSA)

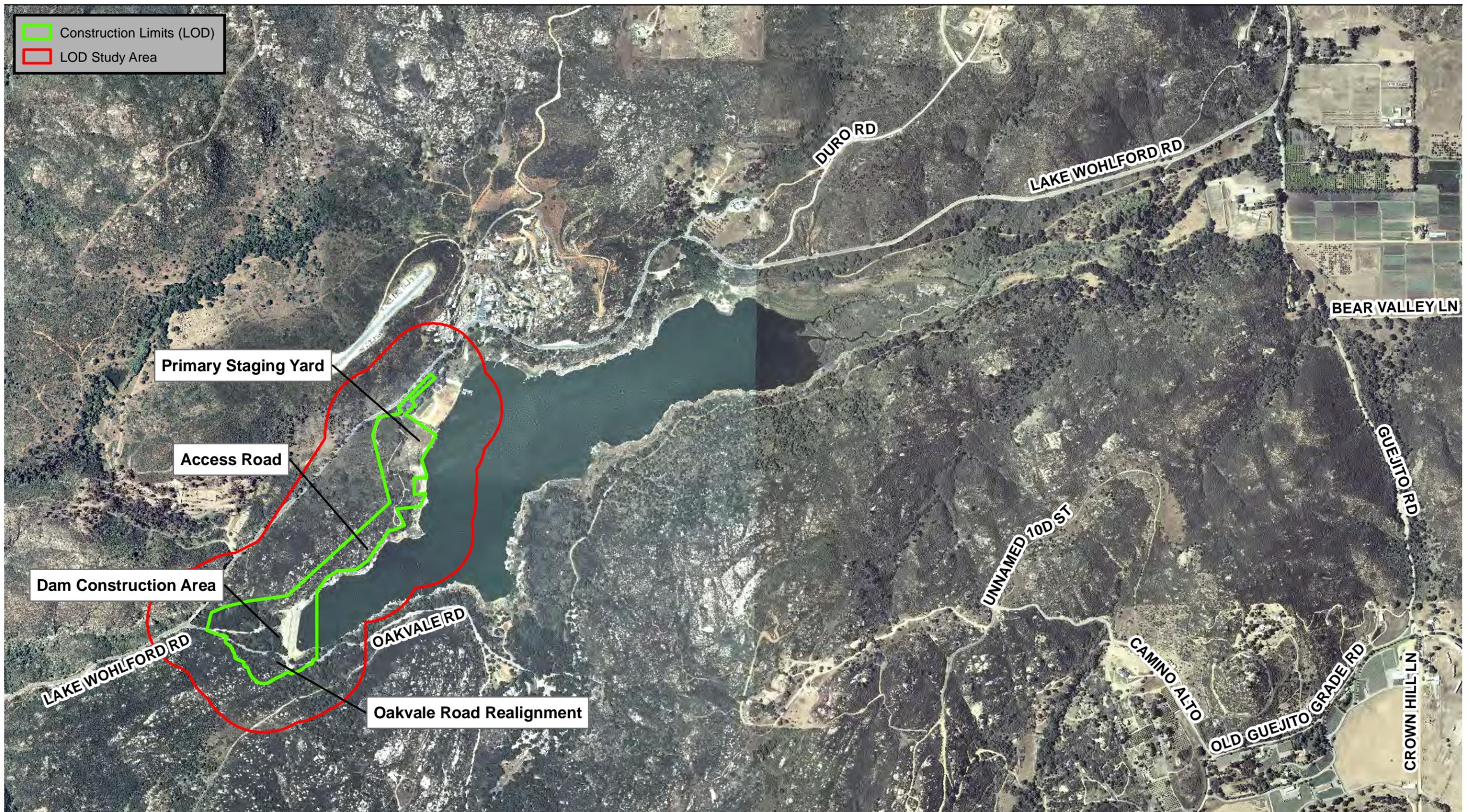
Source: SanGIS 2012; Black & Veatch 2014; USGS 2013



**Figure 3a**  
**Biological Study Area**

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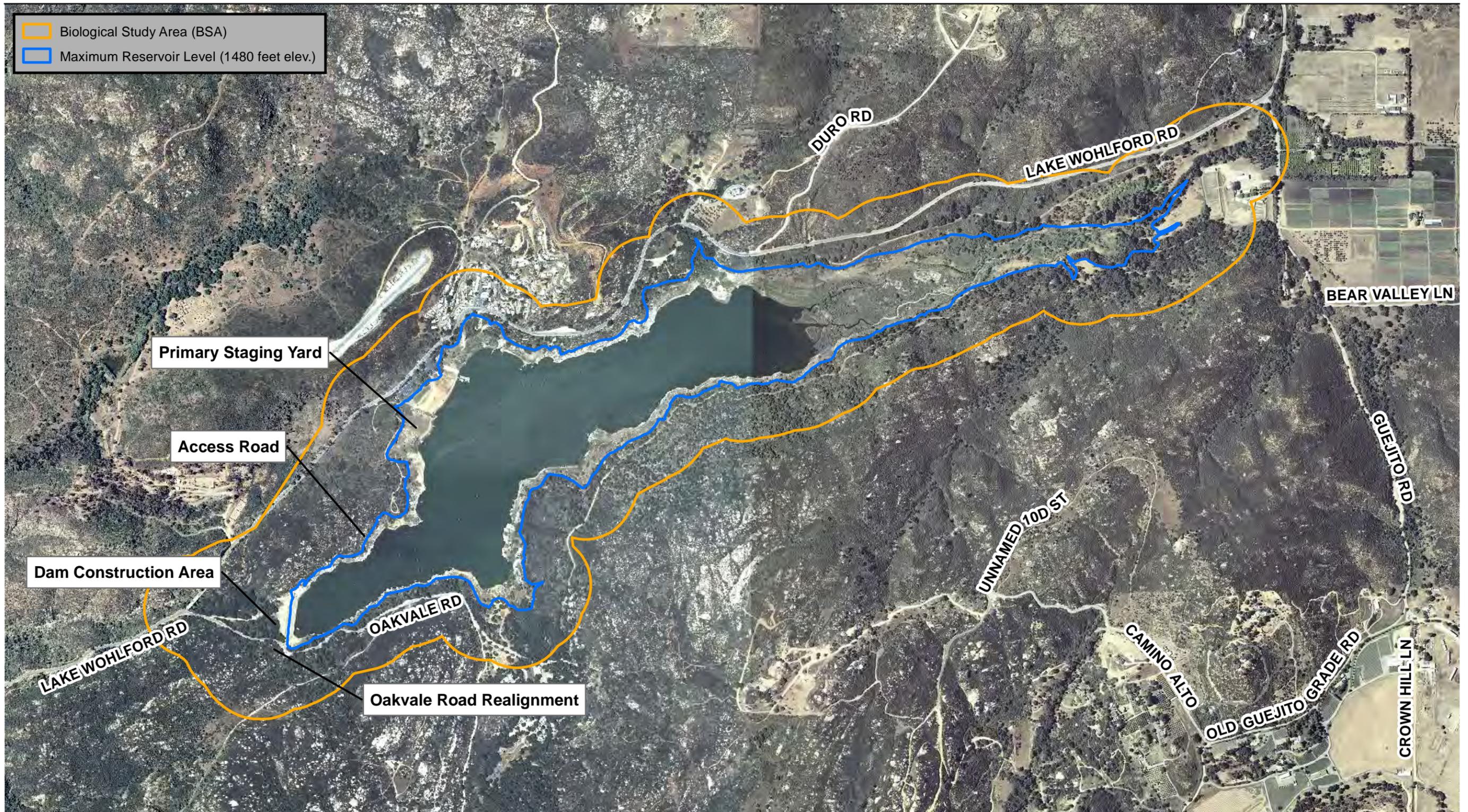
Source: SanGIS 2012; Black & Veatch 2014; USGS 2013



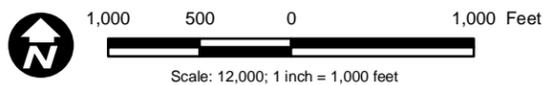
**Figure 3b**  
**Limits of Disturbance (LOD) and Buffer**

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Source: SanGIS 2012; Black & Veatch 2014; USGS 2013



**Figure 3c**  
**Proposed Reservoir Level and**  
**Biological Study Area**

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## **CHAPTER 2.0 METHODS**

### **2.1 BIOLOGICAL STUDY AREA**

The BSA occurs 2 miles east of Valley Center Road and immediately south of Lake Wohlford Road. The BSA includes all areas that may be directly impacted by project construction (LOD), the maximum reservoir level (1,480 feet AMSL contour), plus an approximate 500-foot buffer around the LOD and maximum reservoir level, to assess any potential indirect impacts to the various components that comprise the BSA.

The BSA is within the Escondido Northeastern Subarea Planning Area, which is implemented under the Draft Multiple Habitat Conservation Plan (MHCP). The City's soft line Focused Planning Area (FPA) includes all land surrounding the reservoir that is owned by the City. This includes parcels on both sides of Lake Wohlford Road north of the dam site and south of Oakvale Road, the land south of the trailer park and south of Lake Wohlford Road, continuing east near the eastern end of the lake. At the eastern end of the lake, the City owns large parcels that extend north of the road and south of the reservoir surrounding two Bureau of Land Management (BLM) parcels. Generally on the southwestern side of the lake, the City owns the parcels touching the water, except for a 37-acre BLM parcel. The draft Pre-Approved Mitigation Area on the County of San Diego's draft NCMSCP encompasses the land north and south of the City's parcels.

### **2.2 BIOLOGICAL FIELD SURVEYS**

Biological field surveys completed on-site included vegetation mapping; rare plant surveys; general wildlife reconnaissance surveys; focused protocol surveys for CAGN, LBV, and SWFL; and a delineation of wetlands and waters that are jurisdictional of federal and state agencies. For the purposes of this report, species are considered to have special status if they meet at least one of the following criteria:

- Covered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA) (CDFW 2013)
- California Department of Fish and Wildlife (CDFW) Species of Special Concern (CDFW 2013)
- CDFW fully protected species (CDFW 2013)

- 
- Listed as sensitive by the California Native Plant Society (CNPS 2013)
  - Covered under the draft NCMSCP (County of San Diego 2009) and/or Escondido Subarea Plan

Prior to the initiation of biological field surveys and the environmental analyses, existing data were compiled and reviewed for the BSA. This process included a review of the available databases from the California Native Plant Society's (CNPS) California Rare Plant Rank (CRPR) List, California Natural Diversity Database (CNDDDB), and SanGIS (CNPS 2013; CDFW 2013).

Habitat conditions for special-status species were evaluated with respect to conditions in the BSA, and surveys were initiated to determine presence/absence of species with the potential to occur on or near the BSA. Special-status species identified as having the potential to occur on or near the BSA are discussed in Chapter 3.

AECOM conducted vegetation mapping in winter 2013 and jurisdictional waters mapping in summer 2014. AECOM conducted botanical surveys in spring and summer 2013 to determine the presence or absence of special-status plant and wildlife species in the BSA. Focused bat surveys were conducted in the summer and fall of 2013. These surveys were conducted in accordance with applicable regulations and in accordance with established survey protocols for various special-status species.

### **2.2.1 Vegetation Mapping**

Plant communities were delineated in the field on a 1:4,800-scale map (1 inch = 400 feet) using National Agriculture Imagery Program color imagery from June 2012. The minimum mapping unit was 0.10 acre for riparian areas and 1.0 acre for all other cover types. This map was digitized using ArcGIS 10 supplemented with (Infrared imagery). Existing vegetation community maps (ICF 2008) were used to supplement field surveys for additional input. Plant community classification followed Oberbauer et al. (2008), which revised and expanded on Holland (1986). A Manual of California Vegetation (MCV) (Sawyer et al. 2009) and the Vegetation Classification Manual for Western San Diego County (Sproul et al. 2011) were also used.

During plant community mapping, a habitat suitability assessment for federally listed species was conducted. The Jepson Manual (Baldwin et al. 2012) was used for plant identification and current scientific names; common names follow local convention in the Checklist of the Vascular Plant of San Diego County (Rebman and Simpson 2014).

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## **2.2.2 Jurisdictional Waters and Wetlands Delineation Surveys**

Delineation of jurisdictional wetlands and waters potentially under the jurisdiction of the U.S. Army Corps of Engineers (USACE), CDFW, and/or the Regional Water Quality Control Board (RWQCB) were performed within the project LOD and for the existing reservoir and maximum inundation area. This survey was completed in August and September 2014. Before conducting the field delineation for potential waters of the U.S. and state, an AECOM biologist reviewed local and regional climactic data, soil data, and areas with topographical configurations and vegetative signatures occurring within the waters survey area that may suggest the potential for or presence of waters of the U.S. and state at the time of the field survey. This information was evaluated by consulting the following available sources: the 7.5-minute Valley Center and Rodriguez Mountain quadrangle (USGS 1975, 1988); the national hydrography dataset (USGS 2014); the 2012 U.S. Department of Agriculture (USDA) national agriculture imagery aerial maps of the waters survey area (USDA 2012); the national wetlands inventory wetlands mapper (USFWS 2014b); and the soil survey of San Diego County, California (USDA 1973).

Delineations for waters of the U.S. in the form of wetlands were based on the three-parameter method (Environmental Laboratory 1987). The three-parameter method for identifying and delineating wetlands is outlined in, and was done in accordance with the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987); Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (Environmental Laboratory 2008); and the 2014 Updated National Wetland Plant List (Lichvar et al. 2014). These guidelines require co-occurrence of positive wetland indicators for each parameter: hydrophytic vegetation, wetland hydrology, and hydric soil.

Delineations for “other waters” of the U.S. in the form of other nonwetland waters were based on field indicators to define and identify the jurisdictional lateral extent of the ordinary high water mark (OHWM), as defined by 33 Code of Federal Regulations (CFR) 238.3(e), and federal guidance, methodologies, and procedures, including the following:

- A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (Lichvar and McColley 2008)
- Review and Synopsis of Natural and Human Controls on Fluvial Channel Processes in the Arid West Channels (Lichvar and Field 2007)
- Distribution of Ordinary High Water Mark (OHWM) Indicators and their Reliability in Identifying the Limits of “Waters of the United States” in Arid Southwestern Channels (Lichvar et al. 2006)

- 
- All applicable USACE Regulatory Guidance Letters (RGLs) and Special Public Notices for other waters (including RGL 88-06 and RGL 05-05)

As outlined in the guidance discussed above, OHWM indicators used included water marks; clear natural lines impressed on the banks; scour and shelving; distinct and indistinct terraces; changes in the character of soil; and type, abundance, and relative age of vegetation and/or destruction of terrestrial vegetation.

Delineations for waters of the state under the jurisdiction of CDFW in the form of unvegetated channels were completed (and recorded) by identifying the presence of shelving and/or scour resulting in an established bank, bed, or channel (where applicable). State waters under the purview of CDFW are also represented by the associated riparian component of riverine features. The riparian component is aquatic-related resources that include the habitat upon which fish and/or wildlife depend for continued viability. Therefore, the jurisdictional limits of waters of the state under the purview of CDFW were extended to the top of the bank of a stream or lake, or to the continuous outer edge of its riparian extent, whichever was wider.

Delineations for waters of the state under the jurisdiction of RWQCB were completed identically as the wetland and nonwetland waters as noted above. In addition, RWQCB jurisdiction was delineated based on the presence of aquatic features that simultaneously meet the definition for waters of the state (California Water Code Section 13050[e]) and present “beneficial use” as outlined in the Water Quality Control Plan for the San Diego Basin (RWQCB 1994 [as amended]). Therefore, if it was determined that any type of aquatic and/or aquatic-related features occurring within the waters survey area would present “beneficial use,” the aquatic feature was delineated as a water of the state under the purview of RWQCB (this includes swale features).

### **2.2.3 Sensitive Plant Surveys**

The BSA was surveyed during the appropriate blooming period for the presence of sensitive plant species in January, March, and June 2013. The potentially occurring sensitive plants were determined using current CNDDDB searches. Surveys conducted by AECOM botanists involved searching for target sensitive species expected in the region by walking meandering transects through all habitats within and immediately surrounding the BSA. Sensitive plant species observed in the field were quantified, mapped, and documented. All of the potentially occurring sensitive plant species would have been detectable during these surveys because their blooming periods overlap the survey months or they are perennial shrubs species.

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#### **2.2.4 General Wildlife Surveys**

General wildlife surveys coincided with times when the species determined to potentially occur in the BSA would be more conspicuous or readily observable in the field (e.g., breeding season). All vegetated areas within the BSA were surveyed for wildlife. The suitability of habitats for sensitive wildlife species was also evaluated during the general wildlife surveys. These surveys occurred concurrently with focused protocol surveys during spring and summer 2013. AECOM biologists walked accessible areas of each habitat type within the BSA and recorded sign, track, or direct observations of wildlife species.

#### **2.2.5 Coastal California Gnatcatcher Surveys**

AECOM qualified biologists conducted focused surveys to determine the presence or absence of CAGN within the BSA. CAGN surveys were conducted within the survey area in potentially suitable CAGN habitat. All surveys followed the current U.S. Fish and Wildlife (USFWS) protocol for the species, dated February 28, 1997 (and as amended July 28, 1997) (USFWS 1997). Survey data recorded during each survey included date of survey, survey number, time, weather conditions, field biologists, and CAGN observations. All wildlife species observed during surveys were recorded. The CAGN survey area is located within the NCMSCP area (an active Natural Community Conservation Plan area); therefore, protocol requires three surveys to be conducted during the breeding season (February 15 through August 30). The three protocol surveys were separated by a minimum of 7 days, and were conducted from February 28 through August 15, 2013. Approximately 47 acres of potentially suitable CAGN habitat spread across the BSA were surveyed, per the protocol. A 45-day report was submitted to USFWS and CDFW on October 4, 2013, and can be found in Appendix A.

#### **2.2.6 Least Bell's Vireo Surveys**

AECOM biologists experienced with conducting LBV surveys conducted focused surveys to determine the presence or absence of LBV within the BSA during the breeding season of 2013. Focused surveys followed the current USFWS survey guidelines for the species, dated January 19, 2001 (USFWS 2001). Eight surveys were conducted at least 10 days apart, and were typically completed between dawn and 11:00 a.m. All surveys occurred between April 22 and July 23, 2013. Approximately 28.24 acres of southern willow scrub vegetation suitable as LBV habitat was surveyed within the BSA in 2013. AECOM biologists walked meandering transects in all habitats with potential to support LBV. Survey data recorded during each survey included the date of survey, survey number, time, weather conditions, names of field biologists, and LBV observations. All wildlife species observed during surveys were recorded. A 45-day report for the 2013 survey was submitted to USFWS and CDFW on October 4, 2013, and can be found in Appendix B.

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### **2.2.7 Southwestern Willow Flycatcher Surveys**

AECOM qualified biologists conducted focused surveys to determine the presence or absence of SWFL within the BSA from May 23 through July 11, 2013. Surveys followed the current survey protocol adopted by USFWS (Sogge et al. 2010). Per the current protocol, suitable habitat within the BSA was surveyed five times during the 2013 breeding season per the following schedule: once during the first survey period (May 15 through May 31), twice during the second survey period (June 1 through June 24), and twice during the third survey period (June 25 through July 17). Surveys were conducted at least 5 days apart between dawn and 11 a.m. Approximately 30.99 acres of suitable habitat (28.24 acres of southern willow scrub vegetation and 2.75 acres of coast live oak riparian forest vegetation) for SWFL within the project BSA was surveyed. Survey data recorded during each survey included date of survey, survey number, time, weather conditions, field biologists, and any SWFL observations. All wildlife species observed during surveys were also recorded. A 45-day report was submitted to USFWS and CDFW on October 4, 2013, and can be found in Appendix C.

### **2.2.8 Bat Surveys**

Rahn Conservation Consulting (RCC) biologists conducted focused surveys to determine the presence or absence of sensitive bat species within the BSA from May 29 through November 3, 2013. Surveys involved acoustic detection and thermal imaging equipment. Surveys of potential roosting and foraging areas were conducted to determine if any bats were present, and to determine if any special-status bat species were present within the BSA. Additional discussion of the bat survey methods are discussed in the Bat Surveys and Habitat Assessment for Lake Wohlford Dam Replacement Project, which is included as Appendix D of this report.

## **2.3 PERSONNEL AND SURVEY DATES**

A list of the survey personnel and dates of survey activity for the project is provided in Appendix E.

## **2.4 AGENCY COORDINATION**

A current list of endangered, threatened, proposed, or sensitive species within the vicinity of the proposed project was requested from USFWS, pursuant to the federal ESA of 1973, as amended. In addition, focused protocol survey preactivity notification letters were sent to USFWS to state the intent to conduct protocol surveys for CAGN, LBV, and SWFL in suitable habitats within the BSA in 2013.

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## CHAPTER 3.0 EXISTING CONDITIONS

This section describes the existing environmental setting of the BSA, including the regional context of the site, vegetation communities, plant species, wildlife species, rare and sensitive plant and wildlife species either known or potentially occurring in the proposed project site, jurisdictional waters, and wildlife corridors. Figure 4 shows the results of a 5-mile-radius CNDDDB query around the BSA. Additionally, USFWS provided a list of special-status species to be considered (USFWS 2014a). Species included on the USFWS list are Quino checkerspot butterfly (*Euphydryas editha quino*), arroyo toad (*Anaxyrus californicus*), CAGN, LBV, SWFL, and Stephens' kangaroo rat (*Dipodomys stephensi*).

The information provided in the following sections is based on the biological surveys conducted within the BSA in 2013 and 2014.

### 3.1 VEGETATION COMMUNITIES

Vegetation communities are assemblages of plant species that usually coexist in the same area. These vegetation communities also provide habitat for wildlife species. The classification of vegetation communities is based on the life form of the dominant species within that community and the associated flora. Fourteen native and naturalized plant communities—two upland woodlands, two scrub communities, four wetland types, two herbaceous communities, and one other land cover type—were determined to be present in the BSA. Plant communities within the BSA and adjacent 500-foot buffer were mapped in the field from January 29 through June 12, 2013 (Figure 5).

The BMO classifies vegetation communities into tiers that reflect their relative biological resource values. The tiers range from Tier I (highest value) to Tier IV (lowest value). Figure 5 shows the vegetation communities found in the BSA. Analysis of these vegetation communities and other cover types are provided in the following discussion. Table 1 shows total acreage of each vegetation community/habitat within the BSA.

Vegetation communities and other land cover types classified as “sensitive” within this report were determined by applying the regulatory context provided by the resource agencies (CDFW and CNPS) and supporting documentation such as the CNDDDB. These federal, state, and local agencies and publications are typically in concurrence on the classification of sensitive vegetation communities and other land cover types. For example, vegetation communities or other cover types that are considered potential jurisdictional U.S. and state waters typically result in the vegetation community or nonvegetated area being considered sensitive. For this proposed

project, these waters are regulated by Sections 401 and 404 of the Clean Water Act (CWA), Sections 1600 et seq. of the California Fish and Game Code, and the Porter-Cologne Water Quality Control Act. Additionally, the occurrence of suitable habitat for special-status plant and animal species also raises the sensitivity of a vegetation community. Biologically, the vegetation communities that provide the highest habitat values within the BSA are the structurally diverse riparian communities and the native upland communities.

**Table 1**  
**Vegetation Communities and Cover Types within the LOD and Maximum Inundation Area**

Vegetation Community	BMO Tier Designation	Holland Code <sup>a</sup>	LOD (acres)	Maximum Inundation Area (acres) <sup>b</sup>	Total (acres)
<b>Wetlands</b>					
Emergent Wetland	I	N/A	0.00	4.13	4.13
Freshwater Marsh	I	52400	0.00	13.75	13.75
Lakeshore	I	N/A	1.25	11.63	12.88
Open Water	I	N/A	2.12	126.85	128.97
Southern Willow Scrub	I	63320	0.41	26.75	27.16
Coast Live Oak Riparian Forest	I	61000	0.00	1.03	1.03
<b>Subtotal Riparian and Wetlands</b>			<b>3.78</b>	<b>184.14</b>	<b>187.92</b>
<b>Uplands</b>					
Engelmann Oak Woodland	I	71181	2.36	1.70	4.06
Coast Live Oak Woodland	I	71162	8.01	8.25	16.26
Diegan Coastal Sage Scrub	II	32500	4.31	1.21	5.08
Nonnative Grassland	III	42200	2.60	18.77	21.37
Southern Mixed Chaparral	III	37121	8.58	0.14	8.72
<b>Subtotal Uplands</b>			<b>25.86</b>	<b>30.07</b>	<b>55.93</b>
<b>Other Cover Types</b>					
Urban/Developed	N/A	12000	4.00	3.14	7.14
<b>Subtotal Other Cover Types</b>			<b>4.00</b>	<b>3.14</b>	<b>7.14</b>
<b>Total (acres)</b>			<b>33.64</b>	<b>217.35</b>	<b>250.99</b>

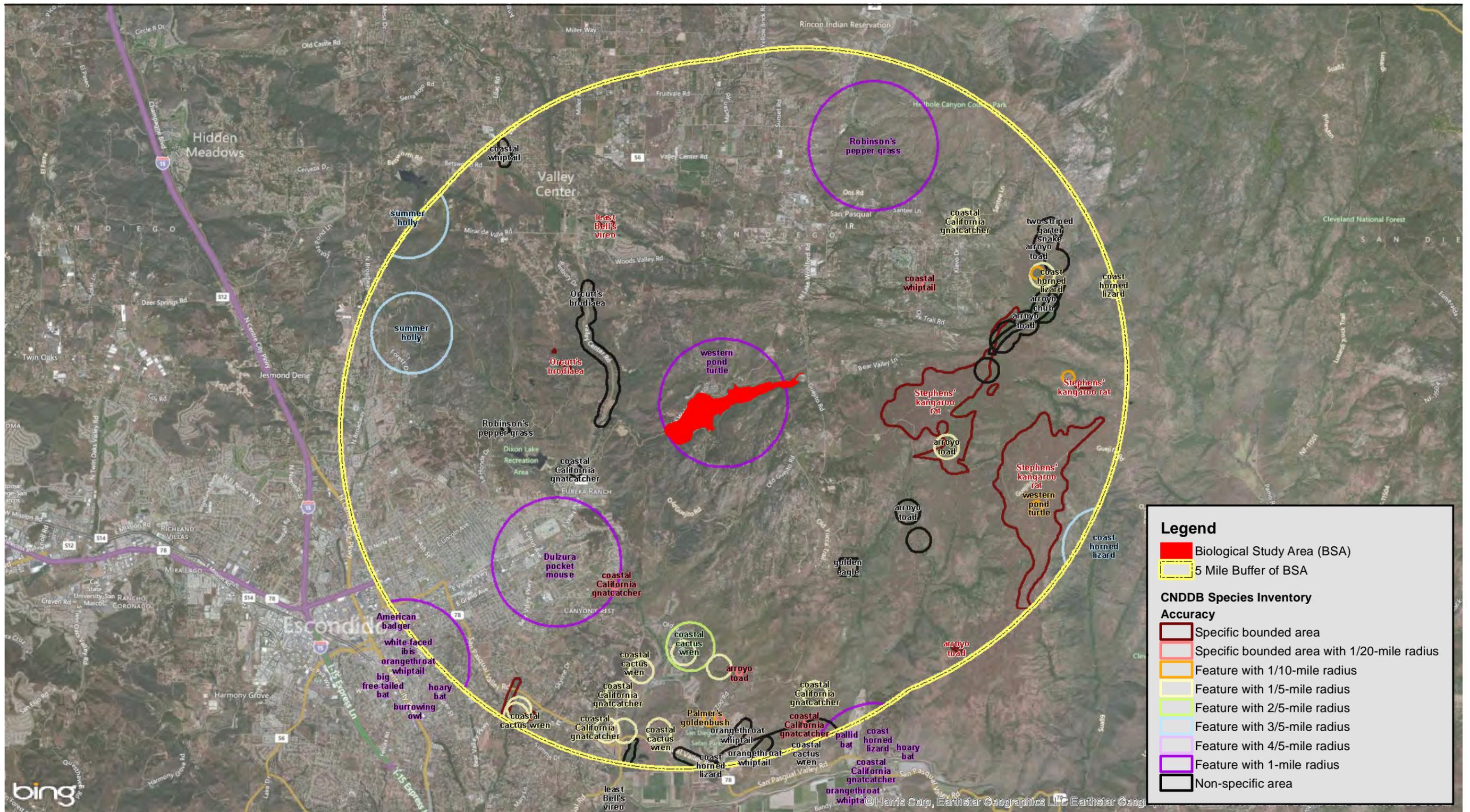
<sup>a</sup> Based on the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008).

<sup>b</sup> Acres in this column only include areas within the 1,480 foot elevation that are outside the LOD; there is no overlap.

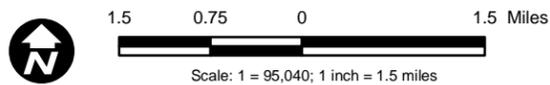
Note: All acreages are rounded to the nearest hundredth, which may account for minor rounding error in totals.

### **3.1.1 Riparian and Wetland Vegetation Communities**

Emergent wetland, freshwater marsh, lakeshore, open water, southern willow scrub, and coast live oak riparian forest are considered sensitive by the County of San Diego (2009), the City (City of Escondido 2001), CDFW, USACE, and RWQCB. Riparian and wetland habitats are considered sensitive due to extensive historic losses of wetlands nationwide and the value of these habitats for sensitive species and wildlife movement. Woodland overstory provides valuable roosting, foraging, and breeding areas, and foraging birds and mammals use the understory. The trees themselves provide extensive foliage and bark surface for foraging, insectivorous birds. Although overall wildlife diversity is generally greater where vertical



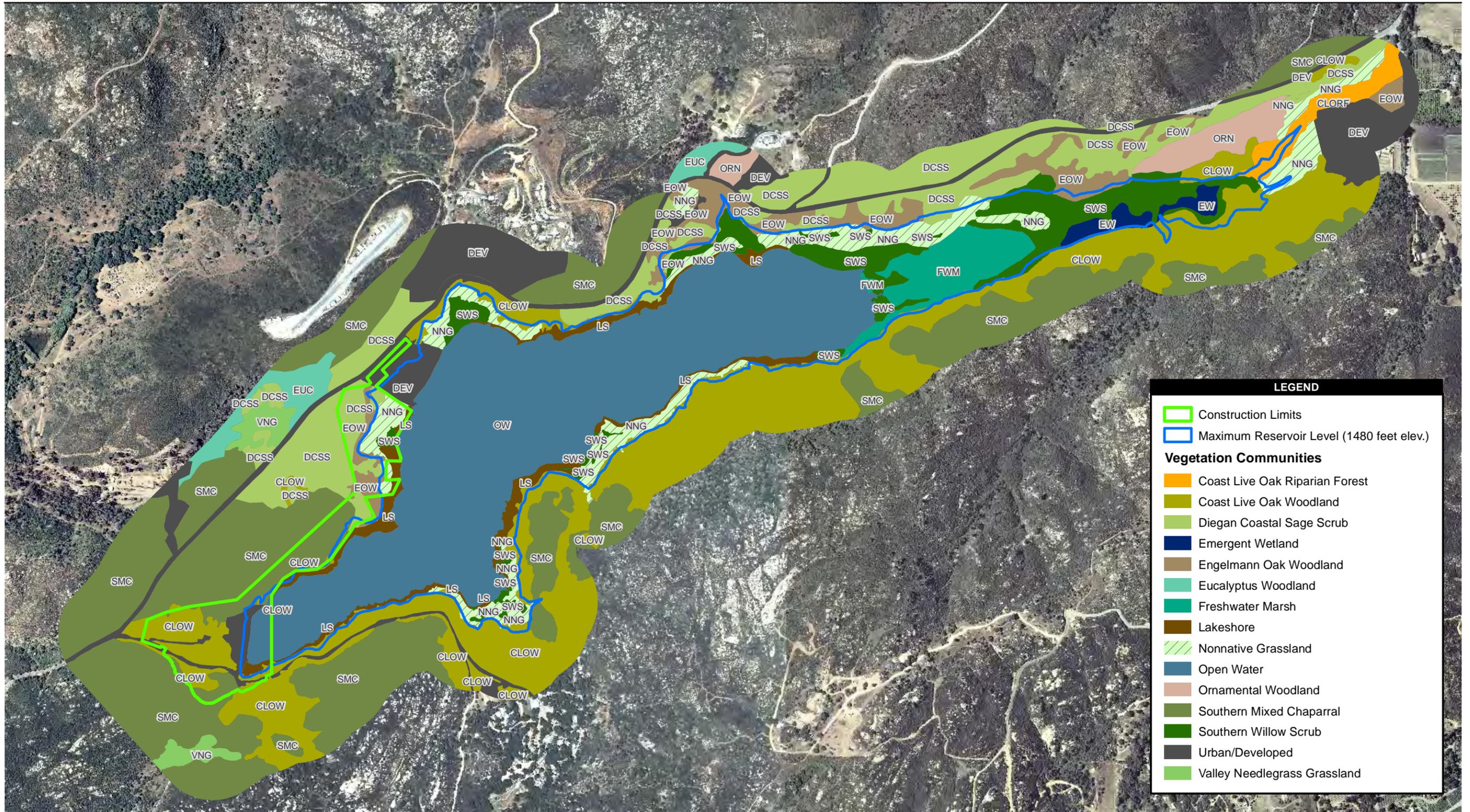
Source: CDFW 2014



**Figure 4**  
CNDDDB Species Inventory

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**LEGEND**

- Construction Limits
- Maximum Reservoir Level (1480 feet elev.)

**Vegetation Communities**

- Coast Live Oak Riparian Forest
- Coast Live Oak Woodland
- Diegan Coastal Sage Scrub
- Emergent Wetland
- Engelmann Oak Woodland
- Eucalyptus Woodland
- Freshwater Marsh
- Lakeshore
- Nonnative Grassland
- Open Water
- Ornamental Woodland
- Southern Mixed Chaparral
- Southern Willow Scrub
- Urban/Developed
- Valley Needlegrass Grassland

Source: ; AECOM 2014; SanGIS 2012.

850 0 850 Feet

Scale: 1:10,200; 1 inch = 850 feet

**Figure 5**  
**Vegetation Communities**

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vegetation structure is well developed, species-specific occurrence can frequently be linked to the quality or presence of one component of the vertical structure. Riparian areas usually harbor greater wildlife diversity and abundance than upland areas, and frequently serve as wildlife corridors due to their linear nature and the cover they provide.

### **Emergent Wetland**

Emergent wetland occurs at the mouth of Escondido Creek where it enters the Lake Wohlford impoundment in the floodplain at its east end. It occurs mostly at the drier margin of the tree canopy. Riparian herbs such as mugwort (*Artemisia douglasiana*), giant nettle (*Urtica dioica*), Mexican rush (*Juncus mexicanus*), muhley grass (*Muhlenbergia rigens*), some remnant stands of bulrush (*Schoenoplectus californicus*), and common mullein (*Verbascum thapsus*) dominate the outer portions of this lowland habitat. This habitat is apparently shifting to less aquatic plant species such as brome grasses and velvet ash (*Fraxinus velutina*) after the draw-down of the reservoir (circa 2008). This shifting community has no MCV equivalent. This wetland habitat is a Tier I plant community in the BMO.

### **Freshwater Marsh**

Freshwater marsh is composed mostly of emergent wetland species, and occurs where marshes or lake edges are permanently inundated. It is dominated by cattail (*Typha domingensis*) and bulrush. At Lake Wohlford, it occurs in the reservoir's upstream floodplain since the draw-down of the lake, although it appears this community is being replaced by willows (*Salix gooddingii*, *S. lasiolepis*, *S. exigua*) and mulefat (*Baccharis salicifolia*). Large clones of these emergent wetland species persist as thickets of dried stems and leaves that are being gradually replaced by southern willow scrub. This compares to the *Typha* Alliance in the MCV. This wetland habitat is a Tier I plant community in the BMO.

### **Lakeshore**

Lakeshore is the region at the margin of the water level that varies according to rainfall and inputs from the Escondido Canal and Escondido Creek. At Lake Wohlford, this habitat type is dominated by wetland/upland transitional species such as telegraph weed (*Heterotheca grandiflora*), dock (*Rumex* spp.), knotweed (*Polygonum* sp.), Hooker's primrose (*Oenothera elata*), salt heliotrope (*Heliotropium curassavicum*), Bermuda grass (*Cynodon dactylon*), narrow-leaf frog fruit (*Phyla nodiflora*), willows (mostly *Salix gooddingii*, but including *S. exigua* and *S. lasiolepis*), cattail, and bulrush. This community has no MCV equivalent. This wetland habitat is a Tier I plant community in the BMO.

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## **Open Water**

Open water is any open body of water, including rivers, streams, bays, or ponds, or any inundated waterway that has no emergent vegetation. In the BSA, it applies strictly to the Lake Wohlford reservoir itself and Escondido Canal, its upstream source. The lake surface may change seasonally according to rainfall, input from Escondido Creek, and the lake surface level as it is maintained by the City. It is mapped for this report according to the date of the aerial imagery on June 2012. Although there are some plants, such as algae, open water is mostly unvegetated and has no MCV equivalent. This wetland habitat is a Tier I land cover type in the BMO.

## **Southern Willow Scrub**

Southern willow scrub occurs mostly at the mouth of Escondido Creek where it enters the Lake Wohlford impoundment in a floodplain at its east end. Streams that meander through the alluvium at the east end of this basin support linear stands of riparian scrub composed mostly of black willow (*Salix gooddingii*), with some mulefat at its margins. Recently, the lake has been drawn down, reducing the level of the lake surface and exposing more of this alluvium above the formerly inundated zone. This draw-down has allowed the expansion of willow scrub that had formerly been dominated exclusively by freshwater marsh. The change in these two communities due to the drawdown mirrors what likely occurred during occasional fluctuations in the reservoir's water level prior to the mandatory drawdown. The lowered level of the lakeshore has also become populated by dense thickets of willows, especially along portions of the southern lakeshore and at several tributaries that enter the lake along its northern lakeshore. Other wetland trees associated with this habitat include western sycamore (*Platanus racemosa*) and western cottonwood (*Populus fremontii*). This community compares to the *Salix gooddingii* Alliance in the MCV. This wetland habitat is a Tier I plant community in the BMO.

## **Coast Live Oak Riparian Forest**

Coast live oak riparian forest occurs along the mouth of Escondido Creek along a riparian stream that carries water from the Escondido Canal. It is an open-to-dense evergreen riparian forest that is dominated by coast live oak (*Quercus agrifolia*). Coast live oak riparian forest is associated with bottomlands and outer floodplains along larger streams, and occurs on fine-grained, rich alluvium (Holland 1986). Structurally, this habitat generally consists of western sycamores, cottonwoods, and willows at the channel margins, bordered by coast live oak at slightly higher elevations. It is dominated by arroyo willow (*Salix lasiolepis*), with some black willow and western sycamore, with a dense understory of giant nettle. This community compares most closely to the *Quercus agrifolia/Salix lasiolepis* Association in the MCV as it is interpreted in Sproul et al. (2011). This wetland habitat is a Tier I plant community in the BMO.

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### 3.1.2 Upland Vegetation Communities

Many upland vegetation communities are considered sensitive because they provide valuable nesting, breeding, and/or foraging habitat for special-status wildlife species. In addition, some upland vegetation communities, such as coast live oak woodland and coastal sage scrub, are rapidly in decline due to development. Unlike riparian corridors, which are linear (in association with riverine systems), upland habitats typically form a large matrix and provide a broad variety of species structure and composition. Dense sage scrub vegetation or dense-canopied woodlands provide useful habitat and movement corridors for wildlife. Nonnative grasslands are considered sensitive because they provide important foraging habitat for raptors, and may support other sensitive wildlife and plant species. Engelmann oak woodland, coast live oak woodland, Diegan coastal sage scrub, and nonnative grasslands are considered sensitive by the County of San Diego (2009) and the City (City of Escondido 2001).

#### **Engelmann Oak Woodland**

Engelmann oak woodland is scattered along the upland perimeter of Lake Wohlford, most prominently along its northern boundary. Woodlands on this side of the lake have a much more open, discontinuous canopy, and are somewhat scattered among sage scrub and chaparral communities. Although there are some uniform stands of Engelmann oak (*Quercus engelmannii*) where it is the dominant tree cover, more often it is co-dominant in mixed stands with coast live oak (*Quercus agrifolia* var. *agrifolia*). These mixed oak stands are more typical of the southern boundary of the lake. Classification of this vegetation type, according to the Manual of California Vegetation (Sawyer et al. 2009), would equate to the *Quercus engelmannii-Quercus agrifolia/Toxicodendron diversilobum/Grass* Association (Sproul et al. 2011), indicated by the presence of Engelmann oak in any proportion. This upland habitat is a Tier I plant community in the BMO.

#### **Coast Live Oak Woodland**

In Southern California, coast live oak woodland exists on the outer fringes of riparian habitats and on steep, mesic north-facing slopes. At Lake Wohlford, it is mostly along the lake's southern perimeter, dominated by coast live oak, with fewer Engelmann oak occurring in scattered locations, especially at the east end of the lake. The subdivision of these two oak tree species into separately mapped woodlands is based on the quantitative dominance of each species, with coast live oak clearly dominating the tree canopy. Along steep, north-facing slopes, this woodland has an herbaceous understory of highly diverse native flora. Important plants include poison oak (*Toxicodendron diversilobum*), heart-leaf Penstemon (*Keckiella cordifolia*), virgin's bower (*Clematis lasiantha*), giant wild-rye (*Elymus condensatus*), California blackberry (*Rubus*

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*ursinus*), milk maids (*Cardamine californica*), and several fern species—California polypody (*Polypodium californicum*), silverback fern (*Pentachaeta triangularis*), California lace fern (*Aspidotis californica*), coastal wood fern (*Dryopteris arguta*), California saxifrage (*Saxifraga californica*), and Southern maidenhair (*Adiantum capillus-veneris*). This community compares to the *Quercus agrifolia*/*Toxicodendron diversilobum* Alliance in Sproul et al. (2011). This upland habitat is a Tier I plant community in the BMO.

### **Diegan Coastal Sage Scrub**

Diegan coastal sage scrub is a diverse community of shrubs that are generally soft-leaved and drought-deciduous and occupy most of the lower slopes within 20 miles of the coast. At Lake Wohlford, Diegan coastal sage scrub occurs as a mosaic in combination with Engelmann oak woodland, and on lower slopes, mostly along the north perimeter of the lake. Dominant shrubs are California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), flat-top buckwheat (*Eriogonum fasciculatum*), and laurel sumac (*Malosma laurina*). Some drier sites have other shrub species such as monkeyflower (*Mimulus aurantiacus*), white sage (*Salvia apiana* and *S. apiana* X *S. mellifera*), broom (*Baccharis* spp.), and saw-tooth goldenbush (*Hazardia squarrosa* ssp. *grindelioides*). It is a sensitive vegetation type according to CDFW, San Diego County, and the City. In the Manual of California Vegetation (Sawyer et al. 2009), Diegan coastal sage scrub is subdivided into 20 to 30 vegetation types or associations. It compares most closely to the *Artemisia californica*-*Eriogonum fasciculatum*-*Malosma laurina* Alliance in Sproul et al. (2011). This upland habitat is a Tier II plant community in the BMO.

### **Eucalyptus Woodland**

Eucalyptus woodland occurs where large stands of these nonnative trees have been planted, with one stand north of Lake Wohlford Road in the western portion of the BSA, and another north of Lake Wohlford Road in the central portion of the BSA. At the western location, the eucalyptus tree canopy dominates the site, with a substantially intact coastal sage scrub shrub understory. There is no eucalyptus woodland within the LOD or maximum inundation area. This nonnative community compares to Eucalyptus Semi-Natural Stands in the MCV. This upland habitat is a Tier IV plant community in the BMO.

### **Nonnative Grassland**

Nonnative grassland occurs in many different disturbed natural plant communities as a result of natural and unnatural disturbances such as soil tillage, excavation, overgrazing, and wildfires. It is typically devoid of native plant species and dominated by alien grasses such as brome (*Bromus* spp.), fescue (*Festuca* spp.), Bermuda grass, mustards (*Brassica* spp. and *Hirschfeldia incana*), and thistles (*Centaurea* spp., *Carduus pycnocephala*, *Cynara cardunculus*, *Silybum maritimum*),

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and many other ruderal plants. This largely nonnative community compares to Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands in Sproul et al. (2011). This upland habitat is a Tier III plant community in the BMO.

### **Ornamental Woodland**

Mixed stands of other ornamental trees have been planted around the east end of the reservoir, including black locust (*Robinia pseudoacacia*), Cypress (*Hesperocyparis macrocarpa*), Peruvian pepper (*Schinus molle*), Canary Island date palm (*Phoenix canariensis*), pines (*Pinus* sp.), and eucalyptus. There is no eucalyptus woodland within the LOD or maximum inundation area. This community has no equivalent in the MCV. This upland habitat is a Tier IV plant community in the BMO.

### **Southern Mixed Chaparral**

Southern mixed chaparral is a highly diverse community of shrubs with thick evergreen leaves that occupy steep, rocky slopes and ridges. This chaparral vegetation type is restricted mostly to San Diego County and northern Baja California, Mexico. This habitat occurs mostly in the inland foothills, replacing Diegan coastal sage scrub habitat except on lower slopes with deeper soils. This plant community surrounds much of the western perimeter of Lake Wohlford, and occurs in scattered stands along the southern perimeter of the lake. Dominant plants at Lake Wohlford include Ramona lilac (*Ceanothus tomentosus*), chaparral whitethorn (*C. leucodermis*), buck brush (*C. crassifolius*), chamise (*Adenostoma fasciculatum*), chaparral candle (*Hesperoyucca whipplei*), and California bricklebrush (*Brickellia californica*). Other associates are toyon (*Heteromeles arbutifolia*), holly-leaf redberry (*Rhamnus ilicifolia*), San Diego mountain mahogany (*Cercocarpus minutiflorus*), holly-leaf cherry (*Prunus ilicifolia*), and scrub oak (*Quercus acutidens*). Some small stands on dry exposures could be designated as chamise chaparral, although they are mostly integrated with Diegan coastal sage scrub species. This community compares to the *Ceanothus tomentosus* Association in Sproul et al. (2011). This upland habitat is a Tier III plant community in the BMO.

### **Valley Needlegrass Grassland**

Valley needlegrass grassland is an herbaceous community of native grasses and herbs that occupies deep, often clayey soils in meadows, valleys, and low hills. Valley needlegrass grassland has been mostly developed for agriculture or degraded through a variety of land uses where it has been highly invaded by nonnative annual grasses and forbs. Although some small unmapped patches of this habitat occur among both Diegan coastal sage scrub and Engelmann oak woodland, the only mapped occurrence in the BSA is in a level area of Las Posas soils

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(gabbro) outside the LOD and maximum inundation area. This site has a relatively high density of purple needlegrass (*Stipa pulchra*) and native forbs such as blue-eyed grass (*Sisyrinchium bellum*) and fascicled tarplant (*Deinandra fasciculata*). This community compares to the *Nasella pulchra* Association in Sproul et al. (2011). This upland habitat is a Tier I plant community in the BMO.

### 3.1.3 Other Cover Types

#### Urban/Developed

Urban/developed refers to areas that no longer support native vegetation and have been permanently converted to structures, roads, parking areas, residential development, landscaped areas, orchards, and other structures. This is mostly unvegetated except by ornamental plantings. It has no equivalent in the MCV. This land cover type is not regulated under the BMO.

## 3.2 JURISDICTIONAL WATERS AND WETLANDS

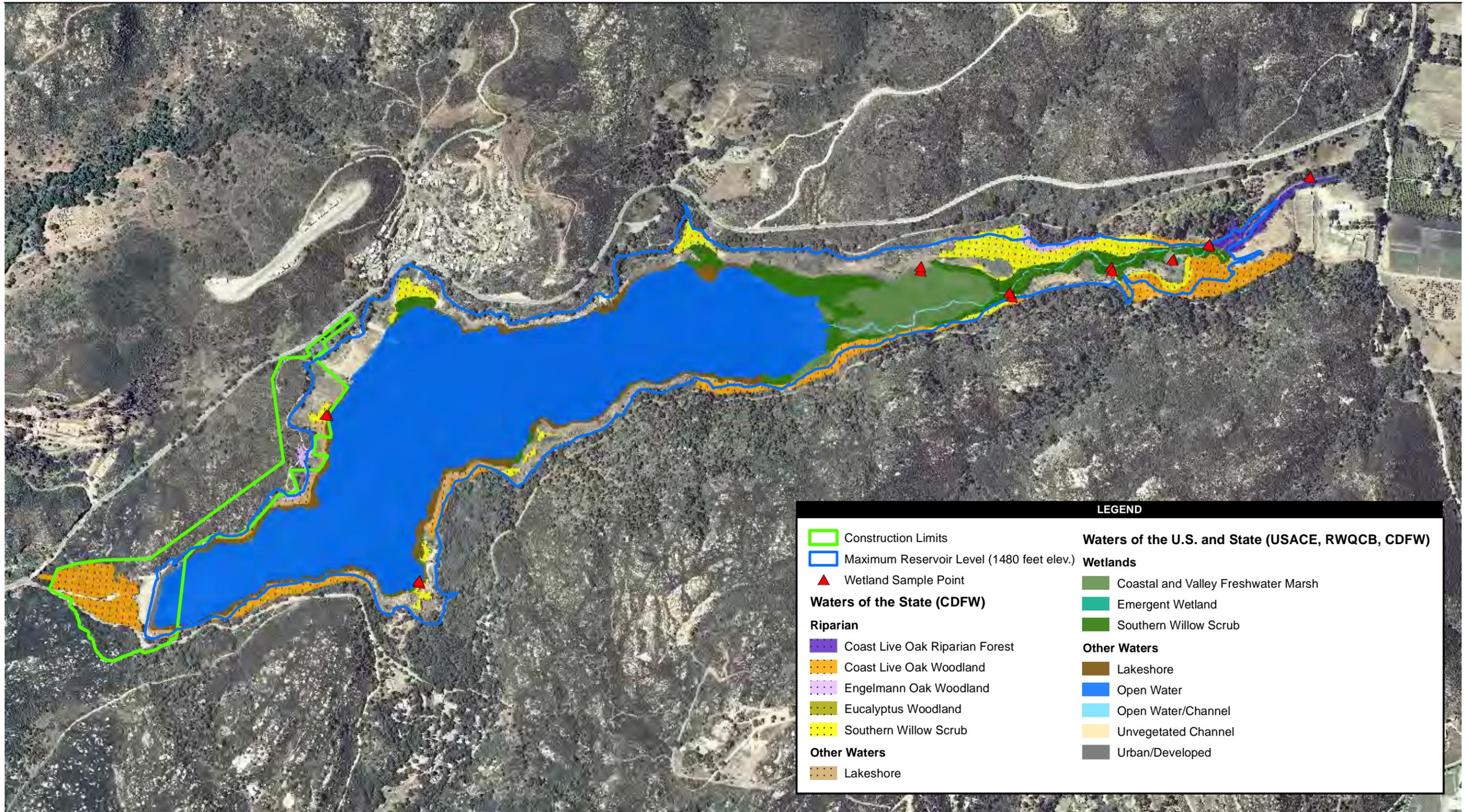
This section presents a summary of the findings from the Lake Wohlford Dam Replacement Project Jurisdictional Delineation Report (AECOM 2015). Table 2 presents the amount and type of waters of the U.S. and state that were delineated for the project within the LOD and maximum inundation area; refer to Figure 6 for locations of all jurisdictional waters of the U.S. and state.<sup>3</sup> As presented in Table 3, a total of 205.17 acres of waters of the U.S.<sup>4</sup> and state<sup>5</sup> were delineated. Of the 205.17 acres, 167.05 acres is waters of the U.S. and state under the purview of USACE, RWQCB, and CDFW consisting of Escondido Creek and Lake Wohlford and their abutting wetlands. In addition, several small ephemeral channels that are tributary to Escondido Creek and Lake Wohlford were delineated. The additional 38.12 acres is exclusively waters of the state under the purview of CDFW, which consists of the outer limits of the riparian corridor that surrounds Escondido Creek and Lake Wohlford.

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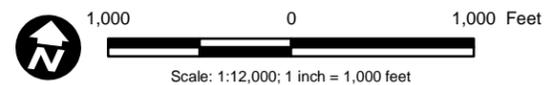
<sup>3</sup> The wetland delineation fieldwork conducted for this project was performed based on an assumption of the construction limits of disturbance that was later updated by the project design engineers, which reduced the potential impact area. In addition, the survey area around the reservoir was based on a 1,480-foot elevation level from 1975 USGS mapping information, which was subsequently updated with data from a topographic survey conducted for the project. The figures provided in this report show the updated project limits and maximum reservoir elevation, but they show the area delineated based on the original information. All acreages listed in this report are based on the updated limits as shown in the figures.

<sup>4</sup> Jurisdictional waters of the U.S. include jurisdictional waters of the state.

<sup>5</sup> State jurisdictions often exceed, in lateral extent and area, federal jurisdiction. Therefore, jurisdictional waters of the U.S. include waters of the state. Although federal and state jurisdictions do overlap, they remain distinct for regulatory administration and permitting purposes.



Source: SANDAG 2012; AECOM 2014



**Figure 6**  
**Jurisdictional Waters**

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**Table 2**  
**Delineated Waters of the U.S. and State**

Type of Jurisdictional Waters	Type of Habitat (Holland 1986; Oberbauer et al. 2008)	Type of Habitat (Cowardin et al. 1979)	Area of Aquatic Resource (acres/linear feet) <sup>a,b</sup>
<b>Waters of the U.S. (USACE, RWQCB, and CDFW)</b>			
Wetland	Coastal and Valley Freshwater Marsh	Palustrine, Emergent, Persistent, Permanently Flooded, Fresh	12.39
Wetland	Southern Willow Scrub	Palustrine, Emergent, Persistent, Permanently Flooded, Fresh	14.80
Wetland	Emergent Wetland	Palustrine, Emergent, Persistent, Permanently Flooded, Fresh	0.08
Other Waters	Open Water	Riverine; Unconsolidated Bottom, Sand, Perennially Flooded, Fresh	130.11/11,792 <sup>c</sup>
Other Waters	Unvegetated Channel	Riverine; Unconsolidated Bottom, Sand, Perennially Flooded, Fresh	0.11/1,526
Other Waters	Lakeshore	N/A	9.08
Other Waters	Urban/Development (Dam)	N/A	0.48
<i>Subtotal Waters of the U.S.</i>			<i>167.05/13,318</i>
<b>Waters of the State, Exclusively CDFW</b>			
Riparian Canopy	Coast Live Oak Riparian Forest	Palustrine; Forested Broad-leaved, Deciduous, Seasonally Flooded, Fresh	2.42
Riparian Canopy	Southern Willow Scrub	Palustrine, Emergent, Persistent, Permanently Flooded, Fresh	11.32
Riparian Canopy	Coast Live Oak Woodland	N/A	19.89
Riparian Canopy	Engelmann Oak Woodland	N/A	1.60
Other Waters	Lakeshore	N/A	2.88
<i>Subtotal Waters of the State, Exclusively CDFW</i>			<i>38.12</i>
<b>Grand Total Jurisdictional Waters</b>			<b>205.17/13,318</b>

<sup>a</sup> Jurisdictional waters acreage of the survey area was determined by using ArcGIS. All acreages are rounded to the nearest hundredth (which may account for minor rounding error).

<sup>b</sup> USACE only uses the measurement of linear feet for impacts to stream/riverine features. Therefore, only stream features have acreage *and* linear feet provided as a component of measurement for established features and potential projected impacts.

<sup>c</sup> Open water includes the Escondido Creek channel prior to entering Lake Wohlford and the lake itself. Escondido Creek accounts for 1.20 acres and 5,260 linear feet, and the lake accounts for the remaining 128.91 acres and 6,532 linear feet.

N/A = not applicable

**Table 3**  
**Summary of Delineated Waters of the U.S. and State**

Type of Habitat	USACE (acres) <sup>a</sup>	RWQCB (acres) <sup>a</sup>	CDFW (acres) <sup>a</sup>
<b>Waters of the U.S.</b>			
Wetland	27.27	27.27	27.27
Other Waters	139.78	139.78	139.78
<i>Subtotal Waters of the U.S.</i>			<i>167.05</i>
<b>Waters of the State</b>			
Riparian Component	-	-	35.23
Other Waters	-	-	2.88
<i>Subtotal Waters of the State</i>			<i>38.12</i>
<b>Grand Total Jurisdictional Waters</b>			<b>205.17</b>

<sup>a</sup> Jurisdictional waters acreage of the survey area was determined by using ArcGIS. All acreages are rounded to the nearest hundredth (which may account for minor rounding error).

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Wetlands and other aquatic environments and habitats occurring within California are regulated under the following federal and state laws, as applicable to the project.

### **Federal Regulations**

Pursuant to Section 404 of the CWA, USACE is authorized to regulate any activity that would result in the discharge of dredged or fill material into jurisdictional waters of the U.S., which include those waters listed in 33 CFR 328.3 (Definitions). USACE, with oversight by the U.S. Environmental Protection Agency (USEPA), has the principal authority to issue CWA Section 404 Permits.

Pursuant to Section 401 of the CWA, RWQCB certifies that any discharge into jurisdictional waters of the U.S. will comply with state water quality standards. RWQCB, as delegated by USEPA, has the principal authority to issue a CWA Section 401 water quality certification or waiver.

### **State Regulations**

Pursuant to Section 1600 et seq. of the California Fish and Game Code, CDFW is authorized to regulate any activity that would alter the flow, bed, channel, or bank of streams and lakes. Jurisdictional waters of the state include the channel, bed, or bank of a lake, river, or stream. In practice, CDFW usually extends its jurisdictional limit to the top of the bank of a stream or lake, or to the continuous outer edge of its riparian extent, whichever is wider.

Pursuant to Section 13000 et seq. of the California Water Code (the 1969 Porter-Cologne Water Quality Control Act), RWQCB is authorized to regulate activity that would result in discharges of waste and fill material into waters of the state, including “isolated” waters and wetlands. Waters of the state include any surface or groundwater within the boundaries of the state (California Water Code Section 13050[e]).

## **3.3 FLORA**

This section discusses plant species detected within the BSA or with potential to occur on-site. In total, 224 plant species were detected in the BSA during vegetation mapping and rare plant surveys (Appendix F). The CNDDDB search identified 49 special-status plant species that have potential to occur within the BSA based on the project’s regional location. Table 4 lists the plants, their sensitivity status, their habitats, the presence or absence of suitable habitat for these species, the results of the rare plant survey, and the rationale for these plants’ presence or absence in the BSA. Only one sensitive plant species, Englemann oak, was observed within the BSA.

**Table 4**  
**Listed and Proposed Plant Species Potentially Occurring or Known to Occur**  
**in the Lake Wohlford Dam Replacement Project Biological Study Area**

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
<b>Plants</b>						
San Diego thorn-mint	<i>Acanthomintha ilicifolia</i>	FESA: Threatened CESA: Endangered CRPR: 1B.1 MHCP: Covered NCMSCP: Covered	Clay soils, openings in chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 10–960 meters. Annual herb.  Blooms April–June.	Grassy openings in chaparral or sage scrub with broken clay soils. All sites have a crumbly or deeply fissured soil that noticeably compresses when treaded upon, even during the dry season.	Absent	Absent  Nearest occurrences Rancho Santa Fe, Encinitas, San Marcos, Escondido, Ramona. Clay soils within the BSA are not typical of appropriate habitat.
California adolphia	<i>Adolphia californica</i>	CRPR: 2B.1	Clay soils, chaparral, coastal scrub, and valley and foothill grassland. Elevation 45–740 meters. Perennial deciduous shrub.  Blooms December–May.	Peripheral chaparral habitat with Diegan sage scrub, particularly near hillsides and next to creeks. Associated with California buckwheat and California sagebrush.	Present	Absent  Nearest occurrences Rancho Peñasquitos, Carlsbad, Rancho Bernardo. Chaparral and coastal scrub of the site are more mesic than is typical for this species.
San Diego ambrosia	<i>Ambrosia pumila</i>	FESA: Endangered CRPR: 1B.1 MHCP: Covered NCMSCP: Covered	Sandy loam or clay, often in disturbed areas, sometimes alkaline chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 20–415 meters. Perennial rhizomatous herb.  Blooms April–October.	Creek beds, seasonally dry drainages, floodplains, on the periphery of willow woodland. Soils include sandy alluvium.	Present	Absent  Nearest occurrences Bonsall, Alberhill, Escondido, Gavilan Hills, Temecula, Murrieta. Sandy, alluvial soils of the site could support this species along the lake shore; fluctuations in lake level probably preclude its persistence.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
rainbow manzanita	<i>Arctostaphylos rainbowensis</i>	CRPR: 1B.1 NCMSCP: Covered	Granitic and Gabbro, chaparral, cismontane. Elevation 205–670 meters. Perennial evergreen shrub.  Blooms December–March.	Mesic chaparral slopes.	Present	Absent  The only two manzanitas observed are <i>A. glauca</i> and <i>Xylococcus bicolor</i> . Nearest occurrences Rainbow, De Luz, Pala, Santa Rosa Plateau.
San Diego sagewort	<i>Artemisia palmeri</i>	CRPR: 4.2	Sandy, mesic soils, chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland. Elevation 15–915 meters. Perennial deciduous shrub.  Blooms February–September.	Found along creeks and drainages near the coast. Found in rocky, sandy loams. Grows commonly in shaded understory beneath willow, sycamore, and cottonwood.	Present	Absent  Nearest occurrences Ramona, Poway, Del Dios, Escondido, Santa Ana River. Riparian habitat could support this species.
Coulter's saltbush	<i>Atriplex coulteri</i>	CRPR: 1B.2 NCMSCP: Covered	Alkaline or clay soils, coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland. Elevation 3–460 meters. Perennial herb.  Blooms March–October.	Sea bluff habitat, coastal dunes, coastal scrub, valley and foothill grassland (alkaline or clay).	Absent	Absent  No <i>Atriplex</i> spp. observed. Nearest extant occurrences in Winchester, Hemet, Ramona. Alkaline or clay soils not present within the Biological Study Area (BSA).
Parish's brittlescale	<i>Atriplex parishii</i>	CRPR: 1B.1 NCMSCP: Covered	Alkaline or clay soils, Chenpod scrub, playas, vernal pools (alkaline). Elevation 25–1,900 meters.  Blooms June–October.	Alkaline playas, seasonally flooded in alluvial soils of broad valleys.	Absent	Absent  No <i>Atriplex</i> sp. observed. Nearest extant occurrences in Encinitas, Oceanside, San Pasqual, Ramona, Mesa Grande. Alkaline or clay soils not present within the BSA.
Encinitas baccharis	<i>Baccharis vanessae</i>	FESA: Threatened CESA: Endangered CRPR: 1B.1 MHCP: Covered NCMSCP: Covered	Sandstone, maritime chaparral, and cismontane woodland. Elevation 60–720 meters. Perennial deciduous shrub.  Blooms August–November.	Found in low-growing chaparral, Corralitos loamy sand, and Cieneba rocky coarse sandy loam.	Present	Absent  Nearest occurrences, Poway, Ramona, San Pasqual, Escondido, Encinitas, Margarita Peak.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
Nevin's barberry	<i>Berberis nevinii</i>	FESA: Endangered CESA: Endangered CRPR: 1B.1 NCMSCP: Covered	Chaparral, cismontane woodland, coastal scrub, riparian scrub (sandy or gravelly). Elevation 274–825 meters. Evergreen shrub.  Blooms March–June.	Chaparral with strong desert affinities.	Absent	Absent  Nearest occurrences Dripping Springs (near Palomar Mountain), Temecula Creek, Redlands. Xeric riparian habitat typical of this species is not present in the BSA.
San Diego goldenstar	<i>Bloomeria clevelandii</i>	CRPR: 1B.1 NCMSCP: Covered	Clay, chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 50–465 meters. Perennial bulbiferous herb.  Blooms April–May.	Undocumented.	Present	Absent  Nearest occurrences Ramona, Rancho Santa Fe, San Marcos. Clay soils were carefully searched for this species; only <i>Chorizanthe fimbriata</i> was observed.
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>	CRPR: 1B.1 MHCP: Covered NCMSCP: Covered	Mesic, clay, sometimes serpentinite, closed cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation 30–1,692 meters. Perennial bulbiferous herb.  Blooms April–May.	Mima mound topography, vernal moist grasslands, periphery of vernal pools. Soils consist of stockpen gravelly loam and Redding gravelly loam.	Present	Absent  Nearest occurrences Rainbow, San Marcos, Palomar Mountain, Santa Rosa Plateau, Black Mountain (near Pamo Valley). Mesic drainages could support this species.
Dunn's mariposa-lily	<i>Calochortus dunnii</i>	CESA: Rare CRPR: 1B.2	Gabbroic, metavolcanic, rocky, closed cone coniferous forest, chaparral, and valley and foothill grassland. Elevation 185–1830 meters. Perennial bulbiferous herb.  Blooms February–June.	Rocky openings in chaparral; restricted to metavolcanic and gabbroic-derived soils.	Present	Absent  Nearest occurrences Black Mountain (near Pamo Valley), Inspiration Point (south of Julian). Gabbro soils are present, although the elevation range is not appropriate.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
round-leaved filaree	<i>California macrophylla</i>	CRPR: 1B.1	Cismontane woodland, valley and foothill grassland. Elevation 15–1,200 meters. Annual herb.  Blooms March–May.	Expansive clayey soils.	Present	Absent  Nearest occurrences Ramona, Gavilan Hills, Otay Valley, Jamul, Cajalco Road (Riverside), Murrietta. Clay soils were carefully searched for this species; only <i>Chorizanthe fimbriata</i> was observed.
wart-stemmed ceanothus	<i>Ceanothus verrucosus</i>	CRPR: 2B.2 MHCP: Covered NCMSCP: Covered	Chaparral. Elevation 1–380 meters. Perennial evergreen shrub.  Blooms December–May.	Coastal chaparral intermixed with chamise. Soils consist of exchequer rocky silt loams and San Miguel-Exchequer rocky silt loams.	Present	Absent  Nearest occurrences Encinitas, Del Dios, San Marcos, Carlsbad, Rancho Bernardo, Temecula. Coastal chaparral and soils of inland sites not appropriate.
southern tarplant	<i>Centromadia parryi</i> ssp. <i>australis</i>	CRPR: 1B.1 NCMSCP: Covered	Margins of marshes and swamps, valley and foothill grassland, vernal pools. Elevation 0–425 meters. Annual herb.  Blooms May–November.	Alkaline playas and intermittent streams.	Present	Absent  Ramona, Escondido, Del Mar, San Dieguito Valley. Alkaline and wetland habitats within the BSA not appropriate.
smooth tarplant	<i>Centromadia pungens</i> ssp. <i>laevis</i>	CRPR: 1B.1	Alkaline habitat, chenopod scrub, meadows and seeps, playas, riparian woodlands, valley and foothill grasslands. Elevation 0–640 meters. Annual herb.  Blooms April–September.	Alkaline playas and intermittent streams.	Present	Absent  Nearest occurrences Santa Rosa Plateau, Murrieta, Temecula Valley, Hemet, Escondido, Camp Pendleton (Mass III ponds), Santee.
long-spined spineflower	<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	CRPR: 1B.2	Clay, chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation 30–1,530 meters. Annual herb.  Blooms April–July.	Found on clay lenses that are devoid of shrubs and occasionally found on the periphery of vernal pool habitat. Long-spined spine flower	Present	Absent  Nearest occurrences Warners Ranch, Aguanga, Pechanga, Encinitas. Clay soils were carefully searched for this species; only <i>Chorizanthe fimbriata</i> was observed.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
				can also be found near the periphery of montane meadows near vernal seeps.		
delicate clarkia	<i>Clarkia delicata</i>	CRPR: 1B.2	Gabbroic soils, chaparral, and cismontane woodland. Elevation 235–1,000 meters. Annual herb.  Blooms April–June.	Found on the periphery of oak woodlands and cismontane chaparral. Found in vernal mesic situations. Soils include banacas stony loam.	Present	Absent  Nearest occurrences Witch Creek, Ramona, San Vicente Reservoir, San Pasqual Valley (San Diego Zoo Safari Park), Mesa Grande, Poway, Orosco Ridge, Guejito Truck Trail, Plaisted Creek (south slope Palomar Mountain), Corona, Pala. Appropriate habitat is present; only other <i>Clarkia</i> spp. observed.
San Miguel savory	<i>Clinopodium chandleri</i> ( <i>Satureja chandleri</i> )	CRPR: 1B.2 NCMSCP: Covered	Chaparral. Rocky, gabbroic, or metavolcanic habitat, chaparral, cismontane woodland, coastal scrub, riparian scrub, valley and foothill grassland. Elevation 120–1,075 meters. Perennial shrub.  Blooms March–July.	Chaparral and oak woodland and may be restricted to metavolcanic-derived soils. Soils on McGinty Peak include Las Posas stony fine sandy loam.	Present	Absent  Nearest occurrences Santa Rosa Plateau, Ramona, Elsinore Mountains, San Miguel Mountain, San Juan Creek, Santa Ana Mountains. Potential habitat does occur within the BSA.
summer holly	<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	CRPR: 1B.2 NCMSCP: Covered	Chaparral and cismontane woodland. Elevation 30–790 meters. Perennial evergreen shrub.  Blooms April–June.	Southern mixed chaparral, usually in mesic areas, north-facing slopes. Found west of Interstate 15.	Present	Absent  Nearest occurrences Ramona, Rancho Santa Fe, Encinitas, San Marcos, Del Dios, San Dieguito River (west of dam), Camp Pendleton (Delta west), Laguna Niguel. Potential habitat does exist within the BSA.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
variegated dudleya	<i>Dudleya variegata</i>	CRPR: 1B.2 MHCP: Covered	Clay habitat, chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 3–580 meters. Perennial herb.  Blooms April–June.	Openings in sage scrub, chaparral, open grasslands, isolated rocky substrates, and near vernal pools. Soils include stockpen gravelly loams and Redding gravelly loams.	Present	Absent  Nearest occurrences Escondido, San Luis Rey. Clay soils in BSA with native grassland searched carefully for this species.
Palmer's goldenbush	<i>Ericameria palmeri</i> var. <i>palmeri</i>	CRPR: 1B.1	Mesic habitat, chaparral, and coastal scrub. Elevation 30–600 meters. Perennial evergreen shrub.  Blooms July–November.	Coastal drainages, mesic chaparral, occasionally as a hillside element. Soils include Las Posas fine sandy loam.	Present	Absent  Nearest occurrences Escondido, San Vicente Reservoir, San Pasqual. This tall brush herb closely resembles broom Baccharis, but with bright yellow flowers. None were observed.
San Diego button-celery	<i>Eryngium aristulatum</i> var. <i>parishii</i>	FESA: Endangered CESA: Endangered CRPR: 1B.1 NCMSCP: Covered	Mesic habitat, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 20–620 meters. Annual and perennial herb.  Blooms April–June.	Areas with vernal pools, mima mounds, and vernal moist conditions. Soils include Redding gravelly loams.	Absent	Absent  Nearest occurrences Ramona, Santa Rosa Plateau, Murrietta, Oceanside, Encinitas, San Marcos. Vernal pool habitat was searched carefully for vernal pools. None are present.
San Diego barrel cactus	<i>Ferocactus viridescens</i>	CRPR: 2B.1 MHCP: Covered NCMSCP: Covered	Chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 3–450 meters. Perennial stem succulent.  Blooms May–June.	Diegan sage scrub hillsides, often at the crest of slopes and growing in cobbles, occasionally found on the periphery of vernal pools and mima mounds. Soil types include San Miguel-Exchequer rocky silt loams and Redding gravelly loams.	Absent	Absent  Nearest occurrences Poway, San Marcos. Cobbly dry slopes are not present in the BSA.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
Mission canyon bluecup	<i>Githopsis diffusa</i> ssp. <i>filicaulis</i>	CRPR: 3.1	Mesic chaparral habitat. Elevation 400–700 meters. Annual herb.  Blooms April–June.	Sandy openings in chaparral. Soils include Visalia sandy loam.	Present	Absent  Nearest occurrences Pala, Moosa Canyon(Valley Center). Appropriate habitat is present within the BSA.
Palmer’s grapplinghook	<i>Harpagonella palmeri</i>	CRPR: 4.2	Clay habitat, chaparral, coastal scrub, and valley and foothill grassland. Elevation 20–955 meters. Annual herb.  Blooms March–May.	Clay vertisols with open grassy slopes and open Diegan sage scrub. Diablo clays are favored on the coast.	Absent	Absent  Nearest occurrences Alberhill, Temescal Canyon, Temecula, north of Agua Tibia Mountain, San Marcos. Clay soils were carefully searched for this species; only <i>Chorizanthe fimbriata</i> was observed.
beach goldenaster	<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	CRPR: 1B.1	Chaparral (coastal), coastal dunes, and coastal scrub. Elevation 0–1,225 meters. Perennial herb.  Blooms March–December.	Coastal sage scrub in sandy locales. Found on beach bluffs and maritime locales.	Present	Absent  Nearest occurrences Valley Center, Ramona, Santa Ana Mountains, Lake Henshaw, Vail Lake, Santa Ysabel, Camp Pendleton. Only <i>Heterotheca grandiflora</i> observed.
mesa horkelia	<i>Horkelia cuneata</i> ssp. <i>puberula</i>	CRPR: 1B.1	Meadows and seeps, dry sandy, gravelly substrate in chaparral, alluvial scrub. Elevation 50–610 meters. Perennial herb.  Blooms January–September.	Canyon bottoms in oak woodland understory.	Present	Absent  Pala, Santa Ana Mountains, Weir Canyon (Orange County), Temecula, Magee Road (near Pala). Only <i>Potentilla</i> sp. observed.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
Ramona horkelia	<i>Horkelia truncata</i>	CRPR: 1B.3	Clay and gabbroic habitat. Elevation 400–1300 meters. Perennial herb.  Blooms May–June.	Chamise chaparral. Soil types include Cieneba very rocky coarse sandy loams and gabbro.	Present	Absent  Nearest occurrences Black Mountain (near Pamo Valley), Ramona, Magee Truck Trail, Santa Margarita Mountains, Temescal Valley, Hellhole Canyon (Valley Center). Gabbro, clay soils were carefully searched for this species; only <i>Chorizanthe fimbriata</i> was observed.
San Diego marsh-elder	<i>Iva hayesiana</i>	CRPR: 2B.2	Marshes, swamps, and playas. Elevation 10–500 meters. Perennial herb.  Blooms April–October.	Alkaline creeks and intermittent streambeds, open riparian canopy allowing substantial sunlight.	Present	Absent  Nearest occurrences Leucadia, Oceanside, San Marcos, Warner’s Ranch. Appropriate alkaline streams not present within the BSA.
heart leaved pitcher sage	<i>Lepechinia cardiophylla</i>	CRPR: 1B.2	Closed cone coniferous forest, chaparral, cismontane woodland. Elevation 520–1,370 meters.  Blooms April–July.	Mesic sites, chaparral and cismontane woodland. Soils include granitics, and Exchequer or volcanically derived soils.	Present	Absent  Nearest occurrences Santa Ana Mountains, Dos Picos Park, south of Mount Woodson (Ramona). Mesic chaparral habitat is present within the BSA.
lemon lily	<i>Lilium parryi</i>	CRPR: 1B.2	Montane coniferous forest, meadows, streams and seeps. Elevation 1,220–2,745 meters.  Blooms July–August.	Wet seep, bracken fern meadow.	Absent	Absent  Palomar Mountain, San Jacinto Mountains, San Gabriel Mountains. Appropriate montane habitat not present within the BSA.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
Robinson's pepper-grass	<i>Lepidium virginicum</i> ssp. <i>menziesii</i> (= <i>L.v.</i> var. <i>robinsonii</i> )	CRPR: 1B.2	Chaparral and coastal scrub. Elevation 1–885 meters. Annual herb.  Blooms January–July.	Openings in chaparral and sage scrub, usually in foothill elevations. Sites are dry, exposed locales.	Present	Absent  Nearest occurrences Ramona, Marine Corps Air Station (MCAS) Miramar, Rancho Bernardo, Santa Ana Mountains, Vail Lake, Camp Pendleton, Chihuahua Valley (near Combs Peak). No <i>Lepidium</i> spp. observed within the BSA.
Orcutt's linanthus	<i>Linanthus orcuttii</i>	CRPR: 1B.3	Montane coniferous forest, Pinyon Juniper woodland, chaparral. Elevation 915–2,145 meters.  Blooms May–June.	Sandy or gravelly scree of decomposed granite.	Absent	Absent  Nearest occurrences Palomar Mountain, Hot Springs Mountain, Laguna Mountains, Warner Springs. Appropriate montane habitat not present within the BSA.
felt-leaved monardella	<i>Monardella hypoleuca</i> ssp. <i>lanata</i>	CRPR: 1B.2 NCMSCP: Covered	Chaparral and cismontane woodland. Elevation 300–1,575 meters. Perennial rhizomatous herb.  Blooms June–August.	Chaparral understory usually under stands of chamise in xeric situations. Soils include San Miguel-Exchequer rocky silt loams often near Otay Mountain. Often on rocky peaks.	Present	Absent  Nearest occurrences Lake Hodges, Mount Woodson (Ramona), Black Mountain (near Pamo Valley), Lake Henshaw, Santa Ana Mountains. Mesic chaparral does occur within the BSA, although elevation range is not very likely for this species.
Hall's monardella	<i>Monardella macrantha</i> ssp. <i>hallii</i>	CRPR: 1B.3	Cismontane woodland, montane coniferous forest, valley and foothill grassland, chaparral. Elevation 730–2,195 meters.  Blooms June–October.	Open rocky sites.	Absent	Absent  Nearest occurrences Agua Tibia – Palomar Mountains, San Jacinto Mountains, Santa Ana Mountains. Appropriate montane habitat not present within the BSA.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
little mousetail	<i>Myosurus minimus</i> ssp. <i>apus</i>	CRPR: 3.1 NCMSCP: Covered	Valley and foothill grassland and alkaline vernal pools. Elevation 20–640 meters. Annual herb.  Blooms March–June.	Vernal pools. Soils include Huerhuero loam.	Absent	Absent  Nearest occurrences Ramona, Santa Rosa Plateau, Lake Elsinore, Camp Pendleton. Vernal pool habitat is not present within the BSA.
mud nama	<i>Nama stenocarpum</i>	CRPR: 2B.2	Marshes and swamps (lake margins, riverbanks). Elevation 5–500 meters. Annual or perennial herb.  Blooms January–July.	This herb grows on muddy embankments, shorelines of ponds and lakes. Associations spp. <i>Malvella l.</i> , <i>Crypsis s.</i> , <i>Juncus</i> spp., <i>Glinus l.</i>	Present	Absent  Nearest occurrences San Luis Rey (near Oceanside), Lake Henshaw (0.5 mile north of dam), Sweetwater Reservoir, Irvine, Mystic Lake at Gliman Springs (near Hemet, Riverside). Potential habitat is present within the BSA.
spreading navarretia	<i>Navarretia fossalis</i>	FESA: Threatened CRPR: 1B.1 NCMSCP: Covered	Chenopod scrub, marshes and swamps, playas, and vernal pools. Elevation 30–655 meters. Annual herb.  Blooms April–June.	Vernal pools and vernal pool swales. Soils include Huerhuero loam.	Absent	Absent  Nearest occurrences Perris, San Jacinto River, Mesa de Burro, San Marcos, Ramona, Del Mar, MCAS Miramar. Vernal pool habitat is not present within the BSA.
prostrate vernal pool navarretia	<i>Navarretia prostrata</i>	CRPR: 1B.1 MHCP: Covered	Mesic habitat, coastal scrub, meadows, seeps, valley and foothill grassland (alkaline), and vernal pools. Elevation 15–1,210 meters. Annual herb.  Blooms April–July.	Alkaline vernal pools.	Absent	Absent  Nearest occurrences Santa Rosa Plateau, San Clemente State Beach, MCAS Miramar. Vernal pool habitat is not present within the BSA.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
chaparral nolina	<i>Nolina cismontana</i>	CRPR: 1B.2 NCMSCP: Covered	Chaparral (gabbroic, metavolcanic, serpentinite habitat and sandstone). Chaparral, coastal scrub. Elevation 140–1,275 meters. Perennial shrub (evergreen).  Blooms (March) May–July.	Open southern mixed chaparral and chamise chaparral. Soils include Las Posas stony fine sandy loams.	Present	Absent  Nearest occurrences Rice Canyon and Magee Truck Trail (near Pala), Santa Ana Mountains, Hell Hole Canyon (near Valley Center), Viejas Mountain. Gabbro soils were examined for this species.
Gander's ragwort	<i>Packera ganderi</i>	FESA: Species of Concern CESA: Rare CRPR: 1B.2 NCMSCP: Covered	Chaparral, burns, gabbroic outcrops. Elevation 400–1,200 meters. Perennial herb.  Blooms April–June.	Understory herb of chaparral.	Present	Absent  Nearest occurrences Magee Truck Trail (near Pala), Black Mountain (near Pamo Valley). Gabbro soils were examined for this species.
Engelmann oak	<i>Quercus engelmannii</i>	CRPR: 4.2 NCMSCP: Covered MHCP: Covered	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Tree. Elevation 120–1,300 meters. Blooms March–June.	Occurs in pure stands and in association with coast live oak woodland.	Present	Present  Within the potential impact area and 500-foot buffer.
southern mountains skullcap	<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	CRPR: 1B.2	Chaparral, cismontane woodland, montane coniferous forest. Elevation 425–2,000 meters. Perennial herb.  Blooms June–August.	Usually in wetlands/riparian, pond edges.	Present	Absent  Nearest occurrences Iron Springs (Palomar Mountain), Santa Rosa Plateau, northwest of Angel Mountain (near Mesa Grande), Carrizo Creek (near Lake Henshaw), Witch Creek, Viejas, Cuyamaca. Appropriate habitat is present within the BSA.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
chaparral ragwort	<i>Senecio aphanactis</i>	CRPR: 2B.2	Sometimes alkaline habitat, chaparral, cismontane woodland, and coastal scrub. Elevation 15–800 meters. Annual herb.  Blooms January–April.	Coastal sage scrub on cismontane woodlands and alkaline flats.	Present	Absent  Nearest known locations are Oceanside, La Mesa, Mission Valley, San Marcos. No <i>Senecio</i> spp. observed.
purple stemodia	<i>Stemodia durantifolia</i>	CRPR: 2B.1	Sonoran desert scrub. Elevation 180–300 meters. Perennial herb.  Blooms January–December.	In association with streams and riparian habitats.	Present	Absent  Nearest known locations Santa Ysabel, Rancho Santa Fe. Riparian habitat within the BSA is relatively recent since lake level was lowered.
Laguna Mountains jewel-flower	<i>Streptanthus bernardinus</i>	CRPR: 4.3	Chaparral and lower montane coniferous forest. Elevation 670–2,500 meters. Perennial herb.  Blooms May–August.	Lower montane coniferous forest, partial shade, or near Boomer stony loams. All have been found with conifers. Commonly found in mesic situations, but can occupy drier embankments in granitic gravels and sand.	Absent	Absent  Nearest known locations Santa Ysabel, Warners Ranch, Live Oak Springs. Appropriate elevation range not present within the BSA.
San Bernardino aster	<i>Symphotrichum defoliatum</i> (= <i>Aster bernardinus</i> )	CRPR: 1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland. Elevation 2–2,040 meters.  Blooms July–November.	On margins of moist habitats in association with such plants as deergrass, western ragweed, and checkerbloom.	Present	Absent  Nearest known locations Warners Ranch, Santa Ysabel. No <i>Aster</i> spp. observed within the BSA.

Common Name	Scientific Name	Sensitivity Status <sup>a</sup>	General Habitat Description <sup>b</sup>	Microhabitat Description <sup>c</sup>	Habitat Present/Absent	Species Present or Absent/Rationale
Parry's tetracoccus	<i>Tetracoccus dioicus</i>	CRPR: 1B.2 NCMSCP: Covered	Chaparral and coastal scrub. Elevation 165–1,000 meters. Perennial deciduous shrub.  Blooms April–May.	Low-growing chamise chaparral with moderately dense canopy cover. Soils include Las Posas and xeric conditions.	Present	Absent  Nearest known locations San Marcos, Ramona, Rainbow. Gabbro soils extensively searched for this species within the BSA.

<sup>a</sup>Sensitivity Status Key (CNPS 2013)

Federal Federal Endangered Species Act (FESA) listed as Endangered, Threatened, or a Species of Concern

State California Endangered Species Act (CESA) listed as Endangered or Rare

California Native Plant Society – California Rare Plant Ranks (CRPR) Lists

1A: Plants presumed extirpated in California and either rare or extinct elsewhere

1B: Considered rare, threatened, or endangered in California and elsewhere

2A: Plants presumed extirpated in California, but more common elsewhere

2B: Plants rare, threatened, or endangered in California, but more common elsewhere

3: Plants for which we need more information – review list

4: Plants of limited distribution a watch list

Decimal notations: .1 – Seriously threatened in California, .2 – Moderately threatened in California, .3 – Not very threatened in California

City

MHCP: Covered – A Covered Species in the draft Escondido Multiple Habitat Conservation Plan

NCMSCP: Covered – A Covered Species in the draft San Diego North County Multiple Species Conservation Plan

<sup>b</sup> General Habitat Descriptions from CNPS 2013

<sup>c</sup> Microhabitat Descriptions from Reiser 1994

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### 3.3.1 Sensitive Plant Species

Englemann oak was observed within the BSA (Figure 7). Englemann oak is a CRPR List 4.2 species and a species covered under the draft Escondido Subarea Plan. No other federally listed, state listed, or other state sensitive special-status plant species were observed within the BSA.

#### **Englemann Oak**

Engelmann oak occurs from the southern base of the San Gabriel Mountains in Los Angeles County; in non-contiguous stands east to San Bernardino County; south into the foothills of Orange and west-central Riverside Counties (Santa Rosa Plateau in the Santa Ana Mountains); and south through the Santa Margarita, Palomar, Cuyamaca, and Laguna Mountains to Tecate, Baja California, Mexico (Roberts 1995). This species is locally common on alluvial fans and interior valleys, and occasional on slopes in southern oak woodland, oak savannah, and chaparral communities (Roberts 1995).

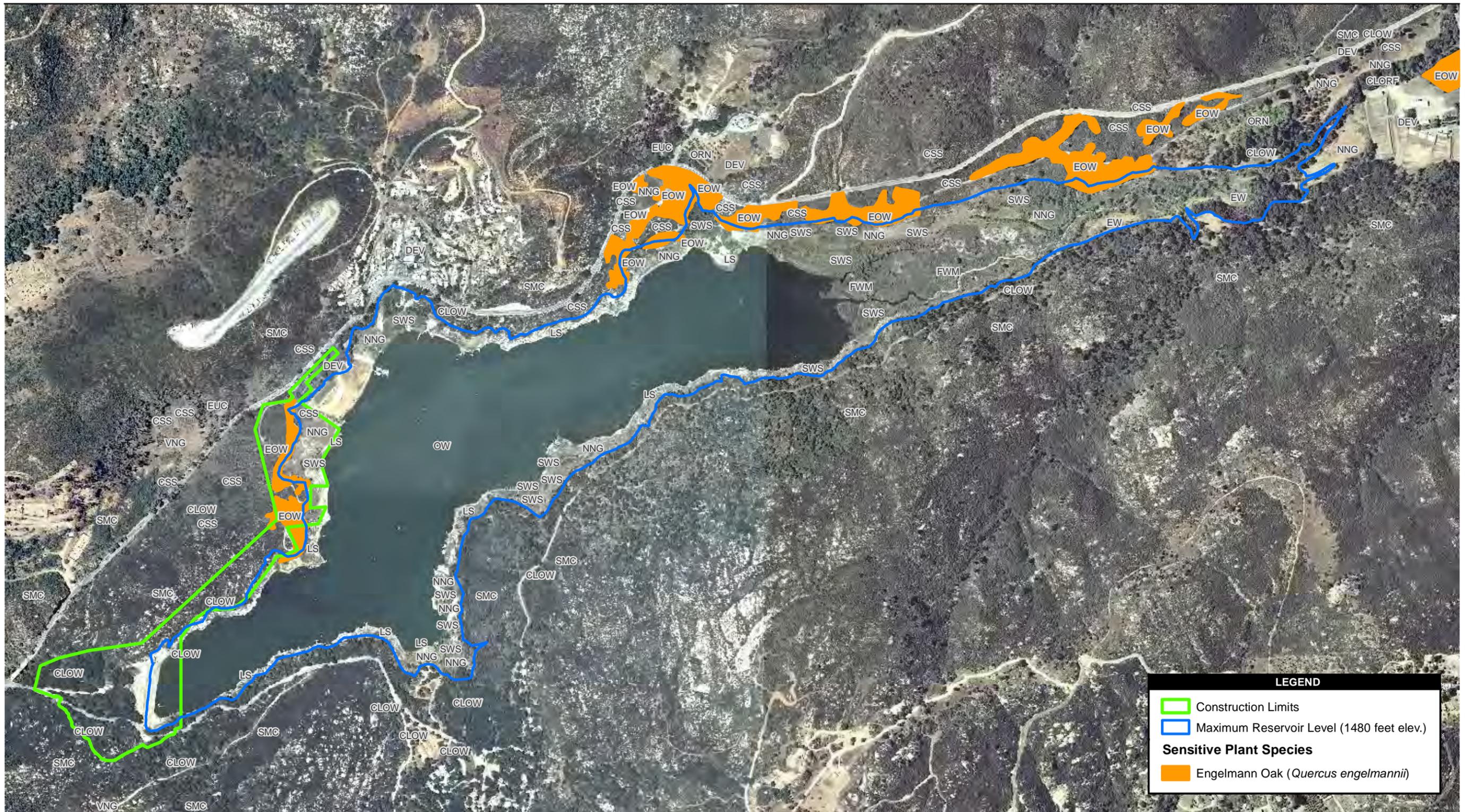
Engelmann oak is present in the LOD, the maximum inundation area, and areas of the project's buffer (Figure 7). This species is considered sensitive by CNPS and is classified as CRPR List 4.2. It is also a covered under the NCMSCP and Draft Escondido Subarea Plan.

### 3.4 WILDLIFE

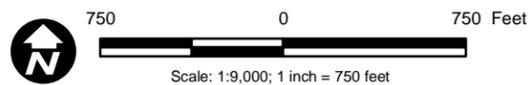
This section discusses wildlife species detected within the BSA or with potential to occur on-site. In total, 126 wildlife species were detected in the BSA during project surveys (Appendix G). According to a CNDDDB search and the USFWS species list, 41 special-status wildlife species have potential to occur within the BSA based on the project's regional location (Table 5). Based on habitat assessments, 10 of those species are not expected to occur within the BSA due to lack of habitat or the assumption by CDFW or local experts that the species has been extirpated from San Diego County (CDFW 2013).

Focused protocol surveys were conducted in the BSA for CAGN, LBV, and SWFL in 2013. No CAGN, LBV, or SWFL were detected in the BSA, and suitable habitats within the BSA are currently unoccupied. Cowbird observations were noted during LBV and SWFL surveys, since presence of this nest parasite can often indicate a negative influence on breeding success by LBV and SWFL. Additionally, a focused survey for bat species was conducted in 2013 by RCC.

Seven sensitive wildlife species were detected within the BSA during surveys: bald eagle (*Haliaeetus leucocephalus*), a state-listed endangered species and CDFW Fully Protected species; Cooper's hawk (*Accipiter cooperii*) and southern California rufous-crowned sparrow



Source: ; AECOM 2014; SanGIS 2012.



**LEGEND**

- Construction Limits
- Maximum Reservoir Level (1480 feet elev.)
- Sensitive Plant Species**
- Engelmann Oak (*Quercus engelmannii*)

**Figure 7**  
**Sensitive Plants (*Quercus engelmannii*)**

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**Table 5**  
**Sensitive Wildlife Species with Potential to Occur within the Biological Study Area**

Common Name <i>Scientific Name</i>	Sensitivity Status <sup>a</sup>	General Habitat Description	Findings <sup>b</sup>	Probability of Occurrence
<b>Invertebrates</b>				
Quino checkerspot butterfly <i>Euphydryas editha quino</i>	USFWS: Endangered NCMSCP: Covered MHCP: Covered	Restricted to open grassland and sunny openings within shrubland habits of Riverside and San Diego Counties, where its distribution is defined primarily by that of its larval host plants, <i>Plantago erecta</i> and <i>Castilleja exserta</i> .	ND	This species is not expected to occur within the survey area due to the lack of suitable habitat within the Biological Study Area (BSA).
<b>Fish</b>				
arroyo chub <i>Gila orcuttii</i>	CDFW: Species of Special Concern NCMSCP: Covered	Typically found in warm stream habitats within Los Angeles County, and historically into northern San Diego County. Stream habitat is often turbid in the winter and clear and calm in the summer.	ND	Not expected to occur within the BSA. Although historic records are in the California Natural Diversity Database, arroyo chub is believed to be extirpated from San Diego County.
<b>Reptiles</b>				
northern red-diamond rattlesnake <i>Crotalus ruber ruber</i>	CDFW: Species of Special Concern NCMSCP: Covered	Chaparral, coastal sage scrub, along creek banks, and in rock outcrops or piles of debris. Habitat preferences include dense vegetation in rocky areas.	ND	This species has a high potential to occur within the BSA due to the presence of highly suitable habitat.
two-striped garter snake <i>Thamnophis hammondi</i>	CDFW: Species of Special Concern NCMSCP: Covered	Occurs in or near permanent fresh water, usually along streams with rocky beds bordered by willow and other riparian vegetation.	ND	This species has a moderate potential to occur within the BSA due to the presence of suitable willow riparian habitat.
coast patch-nosed snake <i>Salvadora hexalepis virgultea</i>	CDFW: Species of Special Concern	A variety of habitats including coastal sage scrub, chaparral, riparian, grasslands, and agricultural fields (Stebbins 2003). Prefers open habitats with friable or sandy soils, burrowing rodents for food, and enough cover to escape predation.	ND	This species has a moderate potential to occur within the BSA due to the presence of moderately suitable habitat.

<b>Common Name Scientific Name</b>	<b>Sensitivity Status<sup>a</sup></b>	<b>General Habitat Description</b>	<b>Findings<sup>b</sup></b>	<b>Probability of Occurrence</b>
Coronado skink <i>Eumeces skitonianus interparietalis</i>	CDFW: Species of Special Concern	Most commonly found in open areas, sparse brush, and in oak woodlands, usually under rocks, leaf litter, logs, debris, or in the shallow burrows it digs (Stebbins 2003).	ND	This species has a high potential to occur within the BSA due to the presence of highly suitable habitat.
San Diego coast horned lizard <i>Phrynosoma coronatum (blainvillei)</i>	CDFW: Species of Special Concern NCMSCP: Covered	Prefers friable, rocky, or shallow sandy soils in coastal sage scrub, and chaparral in arid and semiarid climates.	ND	This species has a moderate potential to occur within the BSA due to the presence of moderately suitable habitat.
coastal whiptail <i>Aspidoscelis tigris stejnegeri</i>	CDFW: Special Animal	A variety of habitats including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, mixed conifer, pine-juniper, chamise-redshank chaparral, mixed chaparral, desert scrub, desert wash, alkali scrub, and annual grassland (Stebbins 2003). Found in and around dense vegetation with openings. Also associated with sandy washes and arroyos.	ND	This species has a moderate potential to occur within the BSA due to the presence of moderately suitable habitat.
orange-throated whiptail <i>Aspidoscelis hyperythra beldingi</i>	CDFW: Species of Special Concern NCMSCP: Covered MHCP: Covered	A variety of habitats, including sage scrub, chaparral, coniferous and broadleaf woodlands (Stebbins 2003). Found on sandy or friable soils with open scrub. Requires open areas, bushes, and fine loose soil.	ND	This species has a moderate potential to occur within the BSA due to the presence of moderately suitable habitat.

<b>Common Name Scientific Name</b>	<b>Sensitivity Status<sup>a</sup></b>	<b>General Habitat Description</b>	<b>Findings<sup>b</sup></b>	<b>Probability of Occurrence</b>
southwestern pond turtle <i>Actinemys marmorata pallid</i>	CDFW: Species of Special Concern NCMSCP: Covered MHCP: Covered	Associated with permanent water or nearly permanent water from sea level to 6,000 feet. Prefers habitats with basking sites such as floating mats of vegetation, partially submerged logs, rocks, or open mud banks.	ND	Although this species is recorded in the California Natural Diversity Database, southwestern pond turtle has a low potential to occur within the BSA due to the presence of marginally suitable habitat under existing conditions. The section of Escondido Creek that occurs within the BSA is thickly vegetated and has very limited open water available for basking sites.
<b>Amphibians</b>				
arroyo toad <i>Anaxyrus californicus</i>	USFWS: Endangered CDFW: Species of Special Concern NCMSCP: Covered	Prefers sandy or gravelly soil in grasslands, open chaparral, and pine-oak woodlands. Breeds in quiet streams with gravel or cobble substrate.	ND	This species is not expected to occur within the BSA. A habitat assessment was conducted for the species, and no suitable habitat was documented.
California red-legged frog <i>Rana draytonii</i>	USFWS: Threatened CDFW: Species of Special Concern MHCP: Covered	Prefer slow-moving streams, and standing deep ponds or pools. Tall vegetation provides protection from predators and the sun.	ND	This species is not expected to occur within the BSA. Species is believed to be extirpated from San Diego County.
<b>Birds</b>				
Cooper's hawk <i>Accipiter cooperii</i>	CDFW: Watch List MHCP: Covered	Usually in oak woodlands, but occasionally in willow or eucalyptus woodlands.	P	Four Cooper's hawks were encountered within the central portion of the BSA near the riparian and wetland area.
Swainson's hawk <i>Buteo swainsoni</i>	CDFW: Threatened	Swainson's hawks often nest in the vicinity of riparian systems. They will also use lone trees in agricultural fields or pastures and roadside trees when available, if adjacent to suitable foraging habitat.	ND	This species has a very low potential to occur within the BSA due to very limited and fragmented coastal sage scrub habitat within the BSA.
white-tailed kite <i>Elanus leucurus</i>	CDFW: Fully Protected	Inhabits riparian or oak woodland adjacent to grassland or open fields where it hunts rodents.	ND	This species has a moderate potential to occur within the BSA in association with the oak woodland vegetation within the BSA.

<b>Common Name Scientific Name</b>	<b>Sensitivity Status<sup>a</sup></b>	<b>General Habitat Description</b>	<b>Findings<sup>b</sup></b>	<b>Probability of Occurrence</b>
golden eagle <i>Aquila chrysaetos</i>	CDFW: Fully Protected, Watch List NCMSCP: Covered MHCP: Covered	Uncommon resident forages over grassland and broken chaparral or sage scrub.	ND	This species has a moderate potential to occur within the BSA as an occasional foraging species over the scrub habitat within the BSA.
bald eagle <i>Haliaeetus leucocephalus</i>	USFWS: Delisted CDFW: Endangered, Fully Protected	Inhabits lakes, rivers, marshes, and seacoasts.	P	Observed incidentally during 2013 protocol coastal California gnatcatcher surveys. Bald eagle has been historically documented at Lake Wohlford, but not as a nesting species.
coastal California gnatcatcher <i>Poliioptila californica californica</i>	USFWS: Threatened CDFW: Species of Special Concern NCMSCP: Covered MHCP: Covered	Diegan coastal sage scrub dominated by California sagebrush ( <i>Artemisia californica</i> ) and flat-topped buckwheat ( <i>Eriogonum fasciculatum</i> ) below 2,500 feet elevation in Riverside County and below 1,000 feet elevation along the coastal slope; generally avoids steep slopes more than 25% and dense, tall vegetation for nesting.	ND	This species is not expected to occur within the BSA based on the results of 2013 protocol-level surveys. Suitable habitat within the BSA is currently unoccupied.
yellow warbler <i>Dendroica petechia brewsteri</i>	CDFW: Species of Special Concern	A fairly common summer breeding resident found along mature riparian woodlands that consist of cottonwood, willow, alder, and ash trees. It is restricted to this increasingly patchy habitat.	P	Yellow warblers were routinely found throughout the riparian areas of the BSA.
yellow-breasted chat <i>Icteria virens</i>	CDFW: Species of Special Concern NCMSCP: Covered MHCP: Covered	Riparian woodland with a dense undergrowth.	P	Yellow-breasted chats were detected throughout riparian and wetland habitat in the BSA.
California horned lark <i>Eremophila alpestris actia</i>	CDFW: Watch List	Inhabits sandy ocean or bay shores, grasslands, and open scrublands and woodlands with low, sparse vegetation.	ND	This species has a moderate potential to occur within the BSA in suitable habitat.

<b>Common Name Scientific Name</b>	<b>Sensitivity Status<sup>a</sup></b>	<b>General Habitat Description</b>	<b>Findings<sup>b</sup></b>	<b>Probability of Occurrence</b>
Bell's sage sparrow <i>Amphispiza belli belli</i>	CDFW: Watch List NCMSCP: Covered MHCP: Covered	Occurs mainly in coastal sage scrub and chaparral habitats.	ND	This species has a low potential to occur within the BSA due to the presence of marginally suitable habitat.
burrowing owl <i>Athene cunicularia</i>	CDFW: Species of Special Concern NCMSCP: Covered MHCP: Covered	Found mainly in grassland and open scrub from the seashore to foothills. Strongly associated with California ground squirrel ( <i>Spermophilus beecheyi</i> ) burrows.	ND	This species is not expected to occur within the BSA due to the lack of suitable habitat.
coastal cactus wren <i>Campylorhynchus brunneicapillus couesi</i>	CDFW: Species of Special Concern NCMSCP: Covered MHCP: Covered	Coastal sage scrub with extensive stands of tall prickly pear or cholla cacti ( <i>Opuntia</i> sp.).	ND	This species is not expected to occur within the BSA due to the lack of suitable habitat. There is very limited and fragmented coastal sage scrub habitat within the BSA.
southwest willow flycatcher <i>Empidonax traillii extimus</i>	USFWS: Endangered CDFW: Endangered NCMSCP: Covered MHCP: Covered	Riparian and oak woodland with perennial flow. Nests typically in willow thickets or other dense shrubby habitats.	ND	This species was not observed during protocol-level surveys in 2013. This species has a low potential to occur within the BSA due to the small and isolated appropriate habitat.
least Bell's vireo <i>Vireo bellii pusillus</i>	USFWS: Endangered CDFW: Endangered NCMSCP: Covered MHCP: Covered	Riparian woodland with understory of dense young willows or mulefat and willow canopy. Nests often placed along internal or external edges of riparian thickets (USFWS 1986).	ND	This species was not observed during protocol-level surveys in 2013. This species has a low potential to occur within the BSA due to the small and isolated appropriate habitat.
southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	CDFW: Watch List NCMSCP: Covered MHCP: Covered	Grassy or rocky slopes with open scrub at elevations from sea level to 1,969 feet. Occurs mainly in coastal sage scrub.	P	This species was observed in suitable scrub habitats within the BSA.
white faced ibis <i>Plegadis chihi</i>	CDFW: Species of Special Concern NCMSCP: Covered MHCP: Covered	Found in shallow areas of freshwater marshes and wet grass. Colonial nesters, with two known colonies in San Diego County, along Guajome Lake and near a pond in San Luis Rey River valley.	ND	This species has a low probability to occur within the BSA in the marsh vegetation, but is not expected to breed or nest due to the restricted nature of known nesting colonies within San Diego County.

<b>Common Name Scientific Name</b>	<b>Sensitivity Status<sup>a</sup></b>	<b>General Habitat Description</b>	<b>Findings<sup>b</sup></b>	<b>Probability of Occurrence</b>
<b>Mammals</b>				
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	CDFW: Species of Special Concern NCMSCP: Covered MHCP: Covered	Typical habitats include early stages of chaparral, open coastal sage scrub, and grasslands near the edges of brush.	ND	This species is not expected to occur within the BSA due to the lack of suitable habitat.
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	CDFW: Species of Special Concern	Common to abundant in Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats.	ND	This species is not expected to occur within the BSA due to the lack of suitable habitat.
American badger <i>Taxidea taxus</i>	CDFW: Species of Special Concern NCMSCP: Covered	Coastal sage scrub, mixed chaparral, grassland, oak woodland, chamise chaparral, mixed conifer, pinyon-juniper, desert scrub, desert wash, montane meadow, open areas, and sandy soils.	ND	This species has a low potential to occur within the BSA due to the presence of marginally suitable habitat.
Stephens' kangaroo rat <i>Dipodomys stephensi</i>	USFWS: Endangered CDFW: Threatened NCMSCP: Covered MHCP: Covered	Native to open grasslands and sparse coastal sage scrub where it burrows and feeds primarily on seeds. Requires soils with low clay content for burrowing.	ND	This species is not expected to occur within the BSA due to lack of suitable habitat.
Dulzura California pocket mouse <i>Chaetodipus californicus femoralis</i>	CDFW: Species of Special Concern	Slopes covered with chaparral and live oaks.	ND	This species has a low potential to occur within the BSA due to the presence of marginally suitable habitat.
northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	CDFW: Species of Special Concern MHCP: Covered	Open sandy habitats grown to weeds.	ND	This species has a low potential to occur within the BSA due to the presence of marginally suitable habitat.
pallid bat <i>Antrozous pallidus</i>	NCMSCP: Covered	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect them from high temperatures.	NDP	This species was documented during 2013 surveys as foraging and passing through the BSA. However, pallid bat was not detected roosting within the BSA.

<b>Common Name Scientific Name</b>	<b>Sensitivity Status<sup>a</sup></b>	<b>General Habitat Description</b>	<b>Findings<sup>b</sup></b>	<b>Probability of Occurrence</b>
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	CDFW: Candidate Threatened, Species of Special Concern NCMSCP: Covered MHCP: Covered	Requires roosts in caves, tree hollows, mines, tunnels, buildings, or other structures.	ND	This species has a moderate potential to occur within the BSA due to the presence of moderately suitable habitat. However, Townsend's big-eared bat was not detected during focused acoustic and visual surveys for bat species within the BSA.
California (western) mastiff bat <i>Eumops perotis californicus</i>	CDFW: Species of Special Concern MHCP: Covered	Chaparral, live oaks, and arid, rocky regions. Requires downward-opening crevices.	NDP	This species was documented as passing through the BSA during focused acoustic and visual surveys for bat species in 2013. However, the species was not documented as roosting within the study area.
hoary bat <i>Lasiurus cinereus</i>	CDFW: Special Animal	Found throughout California, but breeding habitat consists of inland forests and woodlands of medium to large-size trees with dense foliage.	ND	This species has a low potential to occur within the BSA due to the presence of marginally suitable habitat. However, it was not detected during focused acoustic and visual surveys for bat species within the BSA.
western yellow bat <i>Lasiurus xanthinus</i>	CDFW: Species of Special Concern	Found in valley foothills riparian, desert riparian, desert wash, and palm oases. Forages among trees and over water. Roosts in trees.	ND	This species has a low potential to occur within the BSA due to the presence of marginally suitable habitat. However, western yellow bat was not detected during focused acoustic and visual surveys for bat species within the BSA.
pocketed free-tailed bat <i>Nyctinomops fmorosaccus</i>	CDFW: Species of Special Concern	Prefers rock crevices in cliffs as roosting sites. Must drop from the roost to gain flight speed. Reproduces in rock crevices, caverns, or buildings. Prefers rocky desert areas with high cliffs or rock outcrops.	ND	This species has a low potential to occur within the BSA due to the presence of marginally suitable habitat. However, pocketed free-tailed bat was not detected during focused acoustic and visual surveys for bat species within the BSA.

<b>Common Name</b> <i>Scientific Name</i>	<b>Sensitivity Status<sup>a</sup></b>	<b>General Habitat Description</b>	<b>Findings<sup>b</sup></b>	<b>Probability of Occurrence</b>
big free-tailed bat <i>Nyctinomops macrotis</i>	CDFW: Species of Special Concern	Roosts in buildings, caves, crevices, rock outcrops, high cliffs, and occasionally in holes in trees. Prefers rugged, rocky canyons.	ND	This species has a low potential to occur within the BSA due to the presence of marginally suitable habitat. However, big free-tailed bat was not detected during focused acoustic and visual surveys for bat species within the BSA.

<sup>a</sup> **Sensitivity Status Key**

Federal: USFWS

State: CDFW

City: MHCP: Covered – Draft City of Escondido Subarea Plan Proposed Covered Species. Coverage for the species within the Escondido Subarea may be contingent on other MHCP cities that control major/critical locations or the majority of the species or its habitat. If no city is listed as a contingency, then the species will be covered within the Escondido Subarea when Escondido meets all Section 10(a), Natural Community Conservation Planning and MHCP criteria within its boundaries.

NCMSCP: Covered – Draft San Diego North County Multiple Species Conservation Program Proposed Covered Species

<sup>b</sup> **Findings:**

P (Present) – Species detected during project surveys

ND (Not Detected) – Species not detected during project surveys

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(*Aimophila ruficeps canescens*), both CDFW Watch List species; and yellow warbler (*Dendroica petechia brewsteri*) and yellow-breasted chat (*Icteria virens*), both CDFW Species of Special Concern (Figure 8). During the focused bat surveys, two nonlisted CDFW bat Species of Special Concern were detected, including the pallid bat (*Antrozous pallidus*) and the western mastiff bat (*Eumops perotis californicus*). These species are discussed below.

In addition to special-status species discussed below, several non-listed bird species were detected that are subject to the federal Migratory Bird Treaty Act (MBTA), which restricts the killing, taking, collecting, selling, or purchasing of native bird species or their parts, nests, or eggs. This law provides legal protection for almost all breeding bird species occurring in the United States. Congress passed the MBTA in 1918 to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. No permit is issued under the MBTA; however, the proposed project would need to comply with the measures that would avoid or minimize effects on migratory birds.

### **Bald Eagle**

Bald eagle was delisted as a federally threatened species under the ESA in 2007. However, it remains federally protected under the federal Bald and Golden Eagle Protection Act, and is a fully protected state-listed endangered species within its breeding and wintering sites. It inhabits lakes, rivers, marshes, and seacoasts. This species breeds from Alaska east across Canada and south to California. Winters are spent along coasts and large rivers in much of the United States. Bald eagles occur in San Diego County as rare winter visitors, most frequently sighted at Lake Henshaw and occasionally at other lakes (Unitt 2004). The observation during project surveys was a single occurrence of an individual bald eagle. Eagles that nest in Ramona are known to visit Lake Wohlford to fish, but are not known to nest in the vicinity of Lake Wohlford. Although this species was observed at Lake Wohlford during project wildlife surveys, its known roosting area at the lake is outside of the construction LOD and above the historic maximum inundation level of the lake. Therefore, no direct impacts to bald eagle are anticipated, and no avoidance, minimization, or compensatory mitigation measures would be required for this species.

### **Cooper's Hawk**

Cooper's hawk is designated as a Special Animal and is on the CDFW Watch List. This species is a breeding resident throughout most of the wooded portion of California. In San Diego County, Cooper's hawk occurs as a year-long resident and a winter migrant. Cooper's hawk nests primarily in oak woodlands, but occasionally in willows or eucalyptus. The species prefers dense stands of oak, riparian deciduous, or other forest habitat near water. The species usually

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nests and forages near open water or riparian vegetation. Cooper's hawk will catch small birds, especially young, during the nesting season, and small mammals. They will also take reptiles and amphibians.

During the surveys, four Cooper's hawks were encountered within the BSA near the riparian and wetland habitats (Figure 8). Observations of Cooper's hawks were incidental, although infrequent, during focused surveys for LBV and SWFL in 2013. Thus, this species is expected to occur within suitable riparian and wetland habitat throughout the BSA.

### **Southern California Rufous-Crowned Sparrow**

Southern California rufous-crowned sparrow is a CDFW Species of Special Concern. It is a fairly common, localized resident of sage scrub on steep rocky slopes of the coastal plain of Southern California and Baja California, Mexico, from sea level to 1,800 feet (548.64 meters). This species is found throughout the region wherever large sections of suitable coastal sage scrub habitat occur. This species was documented throughout suitable upland habitats during protocol-level CAGN surveys.

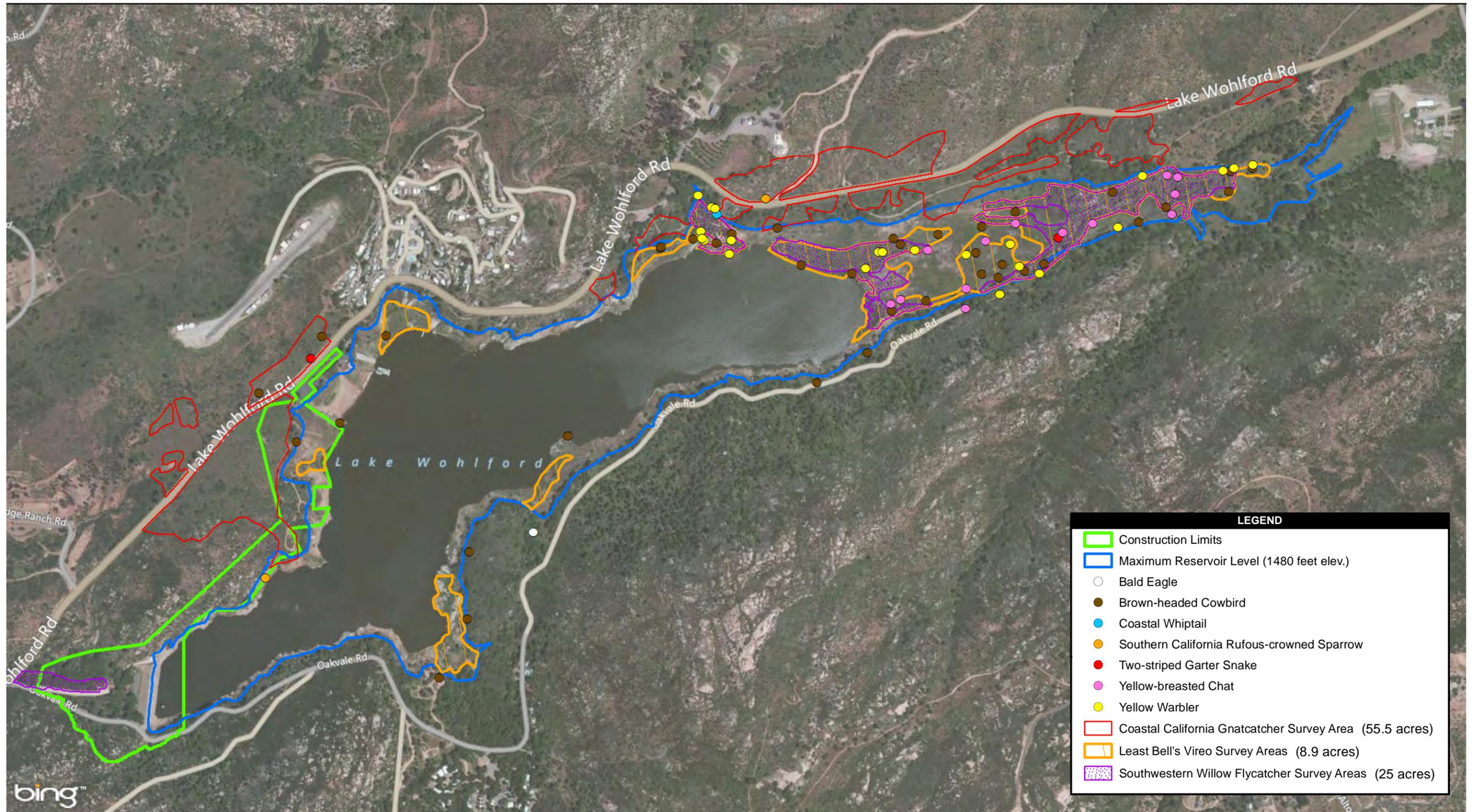
### **Yellow Warbler**

Yellow warbler is a CDFW Species of Special Concern. Yellow warbler breeds from northern Alaska and Canada southward to the middle United States, and in the western United States southward into Mexico. It winters in Mexico and Central and South America. Nest building may occur as early as April in San Diego County, with fledglings reaching independence by August (Unitt 2004). This species occurs most commonly in riparian woodlands dominated by willows.

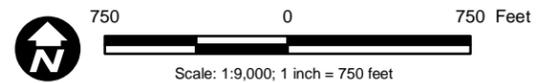
Yellow warblers were routinely found throughout the riparian areas of the BSA during focused protocol surveys for LBV and SWFL in 2013 (Figure 8). Differentiating a female from an immature yellow warbler can be challenging; therefore, with the male yellow warblers singing throughout most of the survey periods and the visual detections of immature/female yellow warblers during the later survey periods, breeding was assumed to be successful in the BSA.

### **Yellow-Breasted Chat**

Yellow-breasted chat is a CDFW Species of Special Concern. This species breeds across the central and eastern United States and southern Canada from South Dakota to New Hampshire, and southward to eastern Texas and northern Florida. It also occurs in scattered regions across the western United States from southern Canada to very northern Mexico. In San Diego County, nest building typically occurs in May and fledging is completed by August (Unitt 2004). In



Source: Image courtesy of USGS © 2015 Microsoft Corporation © 2015 HERE © AND ; AECOM 2014



**Figure 8**  
**Wildlife Survey Areas and**  
**Special Status Species Observations**

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California, chats require dense riparian thickets associated with watercourses, saturated soils, or standing water (lakes or ponds). They typically occur in riparian woodland/scrub with dense undergrowth. In San Diego County, this species occurs in the coastal lowlands and is strongly concentrated in the northwest portion of the county (i.e., Santa Margarita River and San Luis Rey River) (Unitt 2004).

Yellow-breasted chats were detected throughout riparian and wetland habitat during focused protocol surveys for LBV and SWFL in 2013 (Figure 8). Observations of chats were incidental and frequent during focused surveys for LBV and SWFL. Thus, this species is expected to nest within suitable riparian habitat throughout the BSA.

### **Pallid Bat**

The pallid bat (*Antrozous pallidus*) is considered a state species of special concern, and is a Covered Species under the draft NCMSCP. It inhabits arid deserts and grasslands, usually near rocky outcroppings and water, and occasionally evergreen and mixed conifer woodland where it roosts most frequently in rock crevices or buildings but also uses caves, tree hollows, and mines as roosts sites. This species is found in western North America, from south-central British Columbia south through the western United States and into southern Baja California and central Mexico. There are no known roost sites within the BSA. The focused bat surveys conducted in 2013 documented the species foraging and passing through the study area (Appendix D).

### **Western Mastiff Bat**

The western mastiff bat (*Eumops perotis californicus*) is considered a state species of concern and is covered under the draft MHCP. It roosts in rugged, rocky areas and high crevices, tall buildings, reservoirs, and dams either solitarily or in small groups. It forages over open grasslands, coastal sage scrub, and chaparral. This species is distributed from north-central California south to central Mexico. Although it is a resident species in California, it likely makes localized seasonal movements. Within the MHCP area, distribution of this species is unknown. No major populations have been designated within the MHCP area; and, although there are no known active roost sites, any that are found would be considered critical locations. The western mastiff bat was detected flying through the BSA during 2013 surveys, but no roosting sites were documented.

## **3.5 WILDLIFE MOVEMENT**

Connectivity, or the ability of organisms to move through a landscape, is essential in heterogeneous landscapes, especially in increasingly urban settings, for the persistence of healthy

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and genetically diverse animal communities. Corridors can facilitate connectivity on different temporal and spatial scales. Corridors are linear landscape features that allow for species movement over time between two patches that would otherwise be disconnected (Beier and Noss 1998; Beier et al. 2008; Lidicker and Peterson 1999). Because many wildlife species have species-specific habitat requirements for survival and dispersal, corridors may also be species specific. At a minimum, corridors promote local colonization or recolonization of distinct habitat patches, and potentially increase genetic variability within and between populations. Isolation of populations can have harmful effects on population genetics and metapopulation dynamics. In addition, increased exposure to an inhospitable urban matrix due to reductions in connectivity can increase general mortality. All of these factors can contribute significantly to local species extinctions. Thus, corridors help species populations, distributed in and among habitat patches, to persist over time.

Wildlife corridors are linear landscape features that allow animal movement between two patches of comparatively undisturbed habitat, or between a patch of habitat and vital resources. Regional corridors link two or more large areas of natural open space. Local corridors allow resident animals to access critical resources (food, water, and cover) in other areas that might otherwise be isolated.

A wildlife movement study was not conducted for this project; however, water impounded within Lake Wohlford represents a high-value resource to wildlife species, and the presence of undeveloped land within and adjacent to the BSA makes the area important to local wildlife movement. In general, wildlife species are likely to use habitat in the BSA for movements related to home range activities (foraging for food and water, defending territories, searching for mates, breeding, and cover). Movement would likely be concentrated in the riparian and wetland habitat because these areas may provide greater foraging opportunities and cover.

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## CHAPTER 4.0 IMPACT ANALYSIS

This section addresses project-related impacts on vegetation communities and special-status plant and wildlife species that would occur during project construction and operation. Direct and indirect impacts may be either permanent or temporary. These impact categories are defined below.

Direct: Direct impacts are caused by the project and occur at the same time and place as the project. Any alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact. Direct impacts would include direct losses to native habitats, potential jurisdictional waters, wetlands, and sensitive species, and diverting natural surface water flows. Direct impacts could include injury, death, and/or harassment of listed and/or sensitive species. Direct impacts could also include the destruction of habitats necessary for species breeding, feeding, or sheltering. Direct impacts to plants can include crushing of adult plants, bulbs, or seeds.

Indirect: As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Indirect impacts may occur later in time or at a place that is farther removed in distance from the project than direct impacts, but they are still reasonably foreseeable and attributable to project-related activities. Examples include habitat fragmentation; elevated noise, dust, and lighting levels; changes in hydrology, runoff, and sedimentation; decreased water quality; soil compaction; increased human activity; and the introduction of invasive wildlife (e.g., domestic cats and dogs) and non-native plants.

Permanent: All impacts that result in the irreversible removal of biological resources are considered permanent. For the purposes of this project, impacts are irreversible if filling activities result in an elevation (gradient) change or an impervious surface. Examples include constructing a building or permanent road on an area containing biological resources.

Temporary: Any impacts considered to have reversible effects on biological resources can be viewed as temporary. For the purpose of this project, if preconstruction contours are maintained and the area can be revegetated in place, then the impact is considered temporary. Examples include the generation of fugitive dust during construction or removing vegetation and then allowing the natural vegetation to recolonize the impact area. The engineering design is currently being developed; therefore, it is assumed that the entire LOD will constitute a direct and

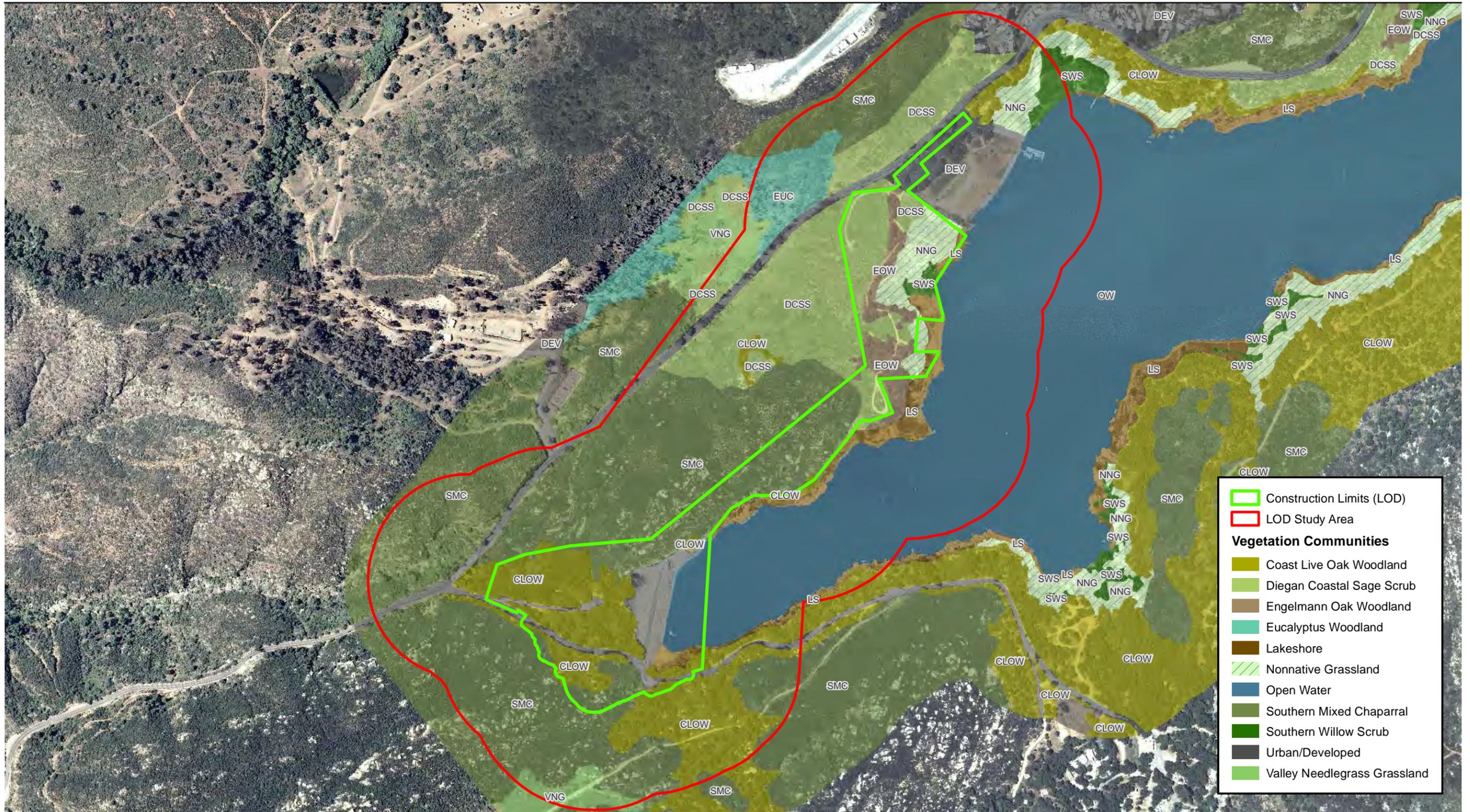
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permanent impact, and no temporary impacts will occur. This represents a worst-case scenario, resulting in the assumption of maximum impact within the LOD.

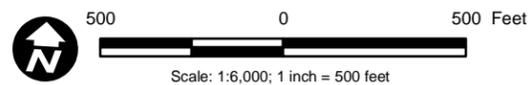
For the purpose of this analysis, the following applicable thresholds of significance were used to determine whether implementing the project would result in a significant impact. These thresholds of significance are based on Appendix G of the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387). A biological resources impact is considered significant if implementation of the proposed project would do any of the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including marshes, vernal pools, and coastal areas) or any state-protected jurisdictional areas not subject to regulation under Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan.
- Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

For the purposes of the following evaluation of the project's impacts on biological resources, all impacts from the dam and intake structure, and all impacts within the construction LOD grading area, would be considered direct permanent impacts (Figure 9). The 500-foot buffer surrounding the construction LOD is considered an area that may experience indirect temporary and/or



Source: ; AECOM 2014; SanGIS 2012.



**Figure 9**  
**Direct and Indirect Impact Areas**  
**with Limits of Disturbance**

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permanent impacts during project construction and/or operation (Figure 9). Additionally, the anticipated rise in water level at the reservoir post-construction would result in a permanent direct impact due to the loss of vegetation communities associated with areas currently above the waterline (Figure 8).

#### **4.1 VEGETATION COMMUNITIES**

Sensitive vegetation communities and other land cover types are defined in Section 3.1. Impacts to sensitive vegetation communities as a result of clearing during project construction would be considered significant. All wetlands inclusive of potential USACE jurisdiction, including freshwater marsh, lakeshore, southern willow scrub, coast live oak riparian forest, emergent wetland, and open water, are also in state jurisdiction and are considered sensitive vegetation communities. In addition, Engelmann oak woodland, coast live oak woodland, Diegan coastal sage scrub, and nonnative grassland are considered sensitive by the County of San Diego (2009) and City (City of Escondido 2001). Impacts to nonsensitive vegetation communities and cover types would not be considered significant.

##### **Direct Impacts**

Table 6 provides a summary of potential direct impacts that would occur to vegetation communities and other cover types coincident with the LOD, as shown in detail in Figure 9. Direct impacts to sensitive vegetation communities within the LOD would occur as a result of construction activities, including grading, construction of new features, and clearing for temporary work areas. Permanent direct impacts would occur where vegetation would be removed within the construction LOD and replaced with a permanent feature such as the dam and its appurtenant structures, the access road, and the graded slope adjacent to Oakvale Road. Where vegetation is removed from work areas that do not include permanent project features, revegetation would occur on-site, as conditions allow. For purposes of conservative analysis, all impacts within the LOD are considered permanent impacts. Impact areas and on-site revegetation of temporary impact areas would be refined as project design progresses and would be incorporated into the project's environmental permits.

**Table 6**  
**Direct Impacts to Vegetation Communities and Cover**  
**Types within the Limits of Disturbance**

Vegetation Community	Sensitive Habitat	Impacts within the LOD (acres)
<b>Riparian and Wetlands (jurisdictional waters)</b>		
Lakeshore	Yes	1.25
Open Water	Yes	2.12
Southern Willow Scrub	Yes	0.41
Coast Live Oak Riparian Forest	Yes	0.00
<b>Subtotal Riparian and Wetlands</b>		<b>3.78</b>
<b>Uplands</b>		
Engelmann Oak Woodland	Yes	2.36
Coast Live Oak Woodland	Yes	8.01
Diegan Coastal Sage Scrub	Yes	4.31
Nonnative Grassland	Yes	2.60
Southern Mixed Chaparral	Yes	8.58
<b>Subtotal Uplands</b>		<b>25.86</b>
<b>Other Cover Types</b>		
Urban/Developed	No	4.00
<b>Subtotal Other Cover Types</b>		<b>4.00</b>
<b>Total Acres</b>		<b>33.64</b>

Notes: All acreages are rounded to the nearest hundredth (which may account for minor rounding error). Acreages for Table 7 include only jurisdictional resources that meet certain criteria as discussed in Section 2.2.2.

Project implementation within the LOD would result in direct impacts on sensitive habitats, including 1.25 acres of lakeshore, 0.41 acre of southern willow scrub, 2.36 acres of Engelmann oak woodland, 8.01 acres of coast live oak woodland, 4.31 acres of Diegan coastal sage scrub, 2.60 acres of nonnative grassland, and 8.58 acres of southern mixed chaparral. These impacts would be considered significant (Impact BIO-1) and would require mitigation based on ratios stated in the BMO, as described in Chapter 5.0. Impacts to 2.12 acres of open water represent areas in the reservoir east of the dam that would be affected during construction. Once the project is complete, these areas would return to open water and there would be no permanent impact; furthermore, the project would expand the amount of open water as the top of the existing dam is removed and this area is inundated. Therefore, impacts on open water would not require off-site mitigation and are not addressed in Chapter 5.0.

In addition to these direct habitat impacts due to construction, the project would inundate habitat around the rim of the reservoir as water levels increase following project construction. In this sense, the reservoir would return to conditions prior to the drawdown. Although the 1,480-foot elevation is shown for information purposes in this report, the reservoir would not necessarily be filled immediately after construction; rather, water levels would be subject to seasonal and temporal fluctuations depending on the availability of water. Habitat along the fringe of the reservoir would be inundated and then exposed again as these cycles continue, and habitat communities will continue to change over time. As the reservoir level increases and the area of

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inundation expands, similar wetland communities are expected to reform along the edge of the expanded water level, but this habitat type-conversion is a complicated process and the ultimate composition and distribution of vegetation adjacent to the new shoreline cannot be predicted with certainty. Because this represents a return to conditions at Lake Wohlford prior to the mandatory drawdown, habitat inundation is not considered a significant impact and does not warrant off-site mitigation.

### **Indirect Impacts**

Potential temporary and permanent indirect impacts to the vegetation communities surrounding the LOD would occur as a result of project construction and operation. Grading activities have the potential to create airborne dust, sedimentation, and erosion. Construction-generated fugitive dust can adversely affect plants by reducing the rates of metabolic processes such as photosynthesis and respiration. Runoff, sedimentation, and erosion can adversely impact plant populations by damaging individuals or by altering site conditions sufficiently to favor other species (native and exotic nonnatives) that would competitively displace native plants. The potential spread of exotic species into the surrounding vegetation communities would be considered a permanent, indirect impact. Exotic species are opportunistic and could occupy disturbed soils within the LOD and spread into adjacent vegetation communities.

Potential indirect impacts to sensitive vegetation communities would be considered a significant impact (BIO-2).

## **4.2 JURISDICTIONAL WATERS**

### **Direct Impacts**

Potential impacts to jurisdictional waters from construction of the replacement dam are listed in Table 7. Some of these impacts overlap with the impacts to similar vegetation community impacts noted in Table 6, but those listed below in Table 7 represent only the jurisdictional wetlands and waters that were delineated in the field. The primary impact on wetlands occurs in the downstream construction area, where the project would result in impacts on approximately 6.10 acres of coast live oak woodland, which is jurisdictional exclusively of CDFW. Some of these impacts would be permanent due to the placement of new downstream facilities and would be considered permanent loss of jurisdictional waters of the state (including wetlands). Impacted areas that are cleared for construction staging and access purposes and do not feature permanent structures would be subject to on-site restoration and would be considered temporary. Acreages of permanent and temporary impacts would be solidified during the project's permitting phase.

**Table 7**  
**Impacts to Waters of the U.S. and State**

Type of Jurisdictional Waters	Type of Habitat (Holland 1986; Oberbauer et al. 2008)	Impacts (Acres/Linear Feet) <sup>a</sup>
<b>Waters of the U.S. (USACE, RWQCB, and CDFW)</b>		
Wetland	Coastal and Valley Freshwater Marsh	-
Wetland	Southern Willow Scrub	0.04
Wetland	Emergent Wetland	-
Other Waters	Open Water	2.12
Other Waters	Lakeshore	0.44
Other Waters	Urban/Developed (Dam)	0.48
<i>Subtotal Waters of the U.S.</i>		<i>3.08</i>
<b>Waters of the State, Exclusively CDFW</b>		
Riparian Canopy	Coast Live Oak Riparian Forest	-
Riparian Canopy	Southern Willow Scrub	0.37
Riparian Canopy	Coast Live Oak Woodland	6.10
Riparian Canopy	Engelmann Oak Woodland	0.37
Other Waters	Lakeshore	0.73
<i>Subtotal Waters of the State, Exclusively CDFW</i>		<i>7.57</i>
<b>Grand Total Jurisdictional Waters<sup>b</sup></b>		<b>8.53</b>

<sup>a</sup> Jurisdictional waters acreage of the BSA was determined by using ArcGIS. All acreages are rounded to the nearest hundredth (which may account for minor rounding error).

<sup>b</sup> Acreage of vegetation communities in Table 6 are for the total of the BSA within the limits of disturbance and calculated separately for impacts from inundation. Acreages for Table 7 include only jurisdictional resources that meet certain criteria, as discussed in Section 2.2.2.

The remaining 4.55 acres of jurisdictional wetlands/waters impacts are upstream of the dam, in areas along the western and northern fringe of the reservoir that are within the identified limits of disturbance for construction work. This includes 3.08 acres of waters of the U.S. and 1.47 acres of waters of the state under the exclusive purview of CDFW. Most of this impact area would become resubmerged as the reservoir returns to its prior function, and would either convert to open water or become reestablished as wetlands habitat as the reservoir level fluctuates over time, similar to conditions prior to the mandatory drawdown. Impacts to open water, which are estimated at 2.12 acres, are temporary only, as they would return to open water after construction.

Direct impacts to jurisdictional waters within the LOD would be considered a significant impact (BIO-3). All of the impacted wetlands and waters areas are included in the acreages of direct project impacts discussed above in Section 4.1; mitigation would be provided by the habitat-based mitigation discussed under impact BIO-1.

After the replacement dam is built, the reservoir would return to its prior state and be subject to seasonal and temporal fluctuation in water levels. Some wetlands established at the fringe of the reservoir would become submerged and others would be subject to the occasional inundation and exposure as the water level rises and recedes, similar to conditions before the mandatory drawdown. This would likely lead to a gradual shifting in wetland habitat types, primarily in the

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reservoir's long eastern arm. There would be no loss of jurisdictional wetland habitat from returning the reservoir to this prior condition, but rather wetlands types would be converted to other wetlands types. Because this represents a return to the reservoir's prior conditions, jurisdictional wetlands in the maximum inundation area and outside the LOD would not be a significant impact subject to mitigation.

### **Indirect Impacts**

Potential temporary and permanent indirect impacts to the jurisdictional waters surrounding the LOD would occur as a result of project construction. Potential temporary, indirect impacts would occur as a result of grading activities creating airborne dust and potentially off-site erosion and sedimentation. Water quality in jurisdictional areas can be adversely affected by surface water runoff and sedimentation during construction. The use of petroleum products (e.g., fuels, oils, and lubricants) and erosion of cleared land during construction could potentially impact surface water. Potential indirect impacts to water quality may occur, and preventive mitigation is required.

Indirect impacts to jurisdictional waters would be considered a significant impact and would require mitigation measures, as described in BIO-4.1 and BIO-4.2, to reduce potential impacts.

## **4.3 SENSITIVE PLANTS**

### **Direct Impacts**

A total of 2.36 acres of Engelmann oak woodland was detected in the LOD. Additional potential direct impacts may occur to Engelmann oak woodland that is along the fringe of the northern lakeshore and adjacent to the future inundated lake area when the Lake Wohlford Reservoir is maintained at its full capacity. Direct impacts to Engelmann oaks would be considered a significant impact (BIO-1 and BIO-5).

### **Indirect Impacts**

Erosion and storm water contaminant runoff may degrade adjacent habitat. Introduced exotic plant species are opportunistic and often outcompete natives for resources, resulting in a reduction in growth, future dispersal, and recruitment of native species. These impacts are the same as stated above in the indirect impact discussion in Section 4.1 (BIO-2).

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## 4.4 SENSITIVE WILDLIFE

### Direct Impacts

Suitable nesting/breeding and foraging habitat for Cooper's hawk, yellow warbler, and yellow-breasted chat is present in the construction LOD and the proposed inundation level. Cooper's hawk is a CDFW Watch List species and yellow warbler and yellow-breasted chat are both CDFW Species of Special Concern, but none of these species are listed as endangered or threatened pursuant to the federal or state ESA. Yellow warblers and yellow-breasted chats were found in the riparian habitat present on-site, and are likely breeding on-site. Cooper's hawks were found in the riparian and oak woodland habitat present on-site, and are also potentially breeding on-site. Direct impacts to habitat for the Cooper's hawk, yellow warbler, and yellow-breasted chat, as well as their habitat, would be considered a significant impact (BIO-6).

Although bald eagle, a state-listed endangered species, was documented at Lake Wohlford, its known roosting area at the lake is outside of the construction LOD and above the historic inundation level of the lake. Therefore, no direct impact to bald eagle is anticipated.

The pallid bat and the western mastiff bat are CDFW Species of Special Concern at roosting sites. Although these two species of bats were detected flying and foraging within the BSA, they were not documented roosting within the study area. Based on the known activities of these species of bats within the County, it is anticipated that these species do not roost within the BSA (Appendix D). Therefore, direct and indirect impacts to pallid bat and western mastiff bat would not be considered significant.

### Indirect Impacts

Temporary, indirect impacts are likely to arise from construction-generated fugitive dust accumulation on surrounding vegetation, noise resulting in destruction and/or avoidance of habitat by wildlife, or the use of lighting during nighttime construction. Indirect impacts from potential deposition of sediment loads during heavy rain events and flooding downstream of the site would impact existing habitat for Cooper's hawk, yellow warbler, and yellow-breasted chat.

A noise study is being prepared for the project that will describe anticipated noise levels with project construction. Based on preliminary information, noise levels in the riparian habitat are expected to be 65 A-weighted decibels (dBA) equivalent noise level ( $L_{eq}$ ) or greater within the construction LOD and adjacent buffer. These noise levels are based on standard propagation over a soft (vegetated) site, and do not include reduction due to topographic features. Noise levels on

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this order have the potential to reduce the use of this habitat for breeding and nesting adjacent to the construction LOD.

Any potential indirect lighting and noise impacts to off-site Cooper's hawk, yellow warbler, and yellow-breasted chat breeding habitat and adjacent foraging habitat would be considered significant (BIO-6).

## **4.5 MIGRATORY BIRDS**

### **Direct Impacts**

The project would result in direct construction-related impacts to bird populations on-site in the form of habitat destruction, and potentially death, injury, or harassment of nesting birds, their eggs, and their young. "Take" under the MBTA and as relevant to the project is generally interpreted as the direct death or injury of a bird from a collision with a vehicle or other machinery. This most frequently occurs during the vegetation clearing stage of construction, and involves impacts to eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Other direct impacts on bird populations using the site are the same as those identified above for listed and nonlisted special-status species. Operation of the project may temporarily directly impact these species when tree trimming is necessary during routine maintenance. Direct impacts to migratory birds protected by the MBTA would be considered significant (BIO-6).

### **Indirect Impacts**

Temporary, indirect impacts are likely to arise from construction-generated fugitive dust accumulation on surrounding vegetation and construction-related erosion, runoff, and sedimentation into plant communities resulting in destruction and/or avoidance of migratory bird habitat. Additionally, construction-related noise is likely to cause bird nest abandonment in areas adjacent to construction in the LOD. Indirect impacts from these construction-related activities would be temporary, as these impacts would end with cessation of project construction.

Operation of the project may result in permanent, indirect impacts to migratory birds, which includes edge effects, where the project would lead to increased lighting, noise, and exotic plant and wildlife invasion. Nighttime lighting could disrupt species and/or cause increased predation rates.

Indirect impacts to migratory birds would be considered significant (BIO-6).

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## **4.6 WILDLIFE MOVEMENT**

### **Direct Impacts**

The proposed project may result in direct impacts to local wildlife movement. Some local movement may be disrupted by the expanded footprint of the dam and by the associated realignment of Oakvale Road. Additionally, raising the water level within the reservoir post-construction would result in impacts to local wildlife movement through the inundation of riparian and wetland vegetation along the fringe of the current inundation line. However, these impacts would likely be temporary, as riparian and wetland habitat distribution would be expected to readjust to the post-construction water levels. From the perspective of regional wildlife movement, the project is anticipated to provide a moderate increase to regional corridor values, as an increase in surface area and an increase in 8,130 linear feet of potential wildlife habitat along the perimeter of the inundation line would occur once the water level is raised at Lake Wohlford. For these reasons, potential direct impacts to wildlife movement are not considered significant.

### **Indirect Impacts**

The project would potentially result in permanent indirect impacts to local wildlife movement. Potential indirect impacts of the proposed project and associated edge effects include altered behavior due to environmental stressors and changes in daily activity patterns. Species that use this area for local movement are likely habituated to anthropogenic indirect impacts already present in the BSA (including the presence of the existing dam and Oakvale Road). For these reasons, potential indirect impacts to wildlife movement are not considered significant.

## CHAPTER 5.0

### RECOMMENDED MITIGATION MEASURES

The following mitigation measures are recommended to address significant direct and indirect impacts identified for the project, including impacts to sensitive vegetation communities, jurisdictional waters/wetlands, sensitive plant species, trees, and sensitive wildlife species. Implementation of these mitigation measures would reduce the project’s impacts to less-than-significant levels.

#### BIO-1: Direct Impacts to Sensitive Vegetation Communities

Permanent impacts to sensitive habitats shall be mitigated at ratios in accordance with the San Diego County BMO, as shown in Table 8. Where vegetation is removed from work areas that do not include permanent project features, such as graded areas where conditions allow for revegetation, mitigation will be provided by on-site restoration, as conditions allow, and this restoration will count toward the project’s mitigation acreage requirements. Otherwise, the City plans to mitigate for project impacts by purchasing credits at the City’s Daley Ranch Conservation Bank, which is considered a BCLA and would qualify for the lower ratios stated below. Open water impacts do not warrant off-site mitigation because they would be fully

**Table 8**  
**Mitigation for Permanent Direct Impacts to Sensitive Vegetation Communities (acres)**

Vegetation Community (BMO Tier)	Total Impacted Acreage	Mitigation Ratio <sup>a</sup>	Mitigated Inside BCLA	Mitigated Outside BCLA
<b>Riparian and Wetlands (jurisdictional waters)</b>				
Lakeshore (Tier I)	1.25	2:1 to 3:1	2.50	3.75
Open Water (Tier I)	2.12	N/A <sup>b</sup>	0.00	0.00
Southern Willow Scrub (Tier I)	0.41	2:1 to 3:1	0.82	1.23
<b>Subtotal Wetlands</b>	<b>3.78</b>	-	<b>3.32</b>	<b>4.98</b>
<b>Uplands</b>				
Engelmann Oak Woodland (Tier I)	2.36	2:1 to 3:1	4.72	7.08
Coast Live Oak Woodland (Tier I)	8.01	2:1 to 3:1	16.02	24.03
Diegan Coastal Sage Scrub (Tier II)	4.31	1.5:1 to 2:1	6.47	8.62
Nonnative Grassland (Tier I)	2.60	1:1 to 1.5:1	2.60	3.90
Southern Mixed Chaparral (Tier III)	8.58	1:1 to 1.5:1	8.58	12.87
<b>Subtotal Uplands</b>	<b>25.86</b>	-	<b>38.39</b>	<b>56.50</b>
<b>Other Cover Types</b>				
Urban/Developed	4.00 <sup>c</sup>	Not regulated	-	-
<b>Total</b>	<b>33.64</b>	-	<b>41.71</b>	<b>61.48</b>

All acreages are rounded to the nearest hundredth (which may account for minor rounding error).

<sup>a</sup> Lower ratio applies where mitigation occurs inside a BCLA; higher ratio where outside a BCLA.

<sup>b</sup> Open water impacts do not warrant off-site mitigation because they would be fully replaced on-site by open water habitat after completion of construction.

<sup>c</sup> Urban/Developed not included in impacted acreage totals.

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replaced on-site by open water habitat after completion of construction, and because the acreage of open water would increase after the existing dam is removed and this area of the modified reservoir would be inundated.

**BIO-1.1:** The City shall mitigate for impacts to 1.25 acres of lakeshore within the LOD through creation and enhancement of suitable habitat or acquisition of suitable habitat credits at an approved mitigation bank. Mitigation acreage shall occur at a 2:1 ratio if the mitigation area is within the BCLA, totaling 2.50 acres, or at 3:1 if the mitigation area is outside the BCLA, totaling 3.75 acres.

**BIO-1.2:** The City shall mitigate for impacts to 0.41 acres of southern willow scrub within the LOD through creation and enhancement of suitable habitat or acquisition of suitable habitat credits at an approved mitigation bank. Mitigation acreage shall occur at a 2:1 ratio if the mitigation area is within the BCLA, totaling 0.82 acre, or at 3:1 if the mitigation area is outside the BCLA, totaling 1.23 acres.

**BIO-1.3:** The City shall mitigate for impacts to 2.36 acres of Engelmann oak woodland within the LOD through creation and enhancement of suitable habitat or acquisition of suitable habitat credits at an approved mitigation bank. Mitigation acreage shall occur at a 2:1 ratio if the mitigation area is within the BCLA, totaling 4.72 acres, or at 3:1 if the mitigation area is outside the BCLA, totaling 7.08 acres.

**BIO-1.4:** The City shall mitigate for impacts to 8.01 acres of coast live oak woodland within the LOD through creation and enhancement of suitable habitat or acquisition of suitable habitat credits at an approved mitigation bank. Mitigation acreage shall occur at a 2:1 ratio if the mitigation area is within the BCLA, totaling 16.02 acres, or at 3:1 if the mitigation area is outside the BCLA, totaling 24.03 acres.

**BIO-1.5:** The City shall mitigate for impacts to 4.31 acres of Diegan coastal sage scrub within the LOD through creation and enhancement of suitable habitat or acquisition of suitable habitat credits at an approved mitigation bank. Mitigation acreage shall occur at a 1.5:1 ratio if the mitigation area is within the BCLA, totaling 6.47 acres, or at 2:1 if the mitigation area is outside the BCLA, totaling 8.62 acres.

**BIO-1.6:** The City shall mitigate for impacts to 2.60 acres of nonnative grassland within the LOD through creation and enhancement of suitable habitat or acquisition of suitable habitat credits at an approved mitigation bank. Mitigation acreage shall occur at a 1:1 ratio if the mitigation area is within the BCLA, totaling 2.60 acres, or at 1.5:1 if the mitigation area is outside the BCLA, totaling 3.90 acres.

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**BIO-1.7:** The City shall mitigate for impacts to 8.58 acres of southern mixed chaparral within the LOD through creation and enhancement of suitable habitat or acquisition of suitable habitat credits at an approved mitigation bank. Mitigation acreage shall occur at a 1:1 ratio if the mitigation area is within the BCLA, totaling 8.58 acres, or at 1.5:1 if the mitigation area is outside the BCLA, totaling 12.87 acres.

**BIO-1.8:** To avoid incidental loss of sensitive habitat types during construction activities, Environmentally Sensitive Area fencing shall be installed along the limits of disturbance prior to the start of construction. In addition, grading limits shall be flagged or fenced, and grading shall not occur beyond this flagging/fencing. Location of fencing shall be confirmed by a qualified biological monitor. Construction crews shall be made fully aware of this boundary.

## **BIO-2: Indirect Impacts to Sensitive Vegetation Communities**

**BIO-2.1:** Storage of soil or fill material from the project site shall be within the LOD or developed areas. The contractor shall delineate stockpile areas on the grading plans for review by the City.

**BIO-2.2:** Construction access would involve portions of native vegetation that may impact Diegan coastal sage scrub, southern mixed chaparral, coast live oak woodland, and Engelmann oak woodland. If new or temporary access routes are determined to be necessary, these areas shall be surveyed for biological resources prior to their use. The contractor shall clearly mark all access routes (i.e., flagged and/or staked) prior to the onset of construction.

**BIO-2.3:** The contractor shall periodically monitor the work area to ensure that construction-related activities do not generate excessive amounts of fugitive dust. Water shall be applied to the construction right-of-way, dirt roads, trenches, spoil piles, and other areas where ground disturbance has taken place to minimize dust emissions and topsoil erosion.

## **BIO-3: Direct Impacts to Jurisdictional Waters**

Impacts to riparian habitats, wetlands, and jurisdictional waters shall obtain the following permits by regulatory federal and state agencies: (1) USACE CWA Section 404 permit for placement of dredged or fill material within waters of the U.S.; (2) RWQCB CWA Section 401 state water quality certification/waiver for an action that may result in degradation of waters of the state; and (3) CDFW California Fish and Game Code Section 1602 agreement for alteration of a streambed. The mitigation could occur in the form of wetland/riparian creation or restoration (which both result in a gain of wetland/riparian area), or creation or restoration combined with enhancement.

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**BIO-3.1:** Mitigation measure BIO-1 requires mitigation for all permanent wetland habitat impacts in the LOD at a ratio of 2:1 if mitigation occurs in the BCLA or 3:1 if mitigation occurs outside the BCLA. In addition, in accordance with resource agency policies, the mitigation shall not result in a net loss of wetland habitat or wetland functions and values. Any proposed mitigation is subject to the resource agencies' review and discretion; thus, the mitigation obligations for the impacts to jurisdictional wetland habitats may change from those presented here.

#### **BIO-4: Indirect Impacts to Jurisdictional Waters**

**BIO-4.1:** A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared to comply with RWQCB requirements. The SWPPP shall identify the design features and best management practices (BMPs) that will be used to manage drainage-related issues (e.g., erosion and sedimentation) during construction. Erosion-control measures shall be regularly checked by the contractor, the project biologist, and/or City staff. Specific BMP plans shall be reviewed by the City and the project biologist, and be modified, if necessary, prior to implementation. Fencing and erosion-control measures of all project areas shall be inspected a minimum of once per week.

**BIO-4.2:** Staging areas and project activities, including equipment access and disposal or temporary placement of excess fill, shall be prohibited within off-site drainages. Implementation of measures as identified in mitigation measure BIO-2 shall be required to reduce any potential indirect impacts to jurisdictional waters to less than significant.

#### **BIO-5: Direct Impacts to Sensitive Plant Species (Engelmann Oaks)**

Impacts to 2.36 acres of Engelmann oak woodland shall be avoided in the construction impact area to the extent feasible, as required in mitigation measure BIO-2.2. As noted in Mitigation Measure BIO-1.3, Engelmann oak habitat shall be mitigated at a minimum 2:1 ratio if mitigated within a BCLA, or at 3:1 if outside of a BCLA.

#### **BIO-6: Direct and Indirect Impacts to Special-Status Bird Species, and Other Migratory Birds**

Significant direct and indirect impacts on special-status bird species, including the state endangered bald eagle, which is also protected under the federal Bald and Golden Eagle Protection Act (BGEPA); Cooper's hawk; yellow warbler; yellow-breasted chat; and other bird species protected by the federal MBTA could occur if active nests or breeding activity is disturbed by project construction. Direct impacts would potentially result from destruction of nests by construction-related vegetation removal; indirect impacts would potentially result from

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construction noise affecting breeding activity. Mitigation Measure BIO-6 (inclusive of BIO-6.1 and BIO-6.2, below) would be employed to ensure that the project's direct and indirect impacts would be reduced to less-than-significant levels. Direct impacts on the sensitive reptiles and mammals listed in Table 5 are not anticipated because none were observed during project surveys.

Other than the potential bird breeding-season impacts discussed in Sections 4.4 and 4.5 and addressed by this mitigation measure, the project is not anticipated to result in significant impacts to the state-endangered and BGEPA-protected bald eagle. Project-related construction activities may occur when bald eagles are present at the reservoir, but construction would be limited to the west/northwest end of the reservoir, leaving the vast majority of fishing territory around the reservoir available for eagle use.

Under California Fish and Game Code Division 4, Part 2, Chapter 1, Section 3503.5, "it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey), or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto," where "take" is defined under Division 0.5, Chapter 1, Section 86 as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." In addition, the MBTA prohibits killing migratory birds and prohibits destruction of active migratory bird nests and/or eggs.

**BIO-6.1:** If vegetation clearing or earthwork is proposed to commence within the bird breeding season (February 15 through September 15), a qualified biologist shall conduct pre-construction nest surveys of the project site and a 500-foot buffer to identify any listed species or bird breeding activity in the vicinity. The pre-construction survey shall be performed within 2 weeks of the start of construction activity. If the pre-construction surveys identify active nests or bird-breeding activity within the 500-foot buffer, a qualified biologist shall prepare a nest avoidance plan and, if necessary, a noise attenuation plan, to identify site-specific measures that shall be incorporated into the project to reduce construction-related impacts on the applicable bird species.

**BIO-6.2:** All construction lighting (e.g., staging areas, equipment storage sites, roadway) shall be directed onto the roadway or construction site and away from adjacent habitat. Light glare shields shall also be used to reduce the extent of illumination into adjoining areas.

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## CHAPTER 6.0

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**APPENDIX A**

**45-DAY REPORT FOR COASTAL  
CALIFORNIA GNATCATCHER**





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October 4, 2013

Ms. Susie Tharratt  
Recovery Permit Coordinator  
Carlsbad Fish and Wildlife Office  
2177 Salk Avenue, Suite 250  
Carlsbad, California 92008

**RE: 2013 Lake Wohlford Dam Replacement Project Coastal California Gnatcatcher  
45-Day Summary Report, San Diego County, California**

Dear Ms. Tharratt:

In compliance with the Special Terms and Conditions for Endangered and Threatened Wildlife Species Permit TE-820658-6, AECOM submits this letter report summarizing the results of focused surveys conducted in 2013 to determine the presence or absence of the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) (CAGN) for the Lake Wohlford Dam Replacement Project (project) within the City of Escondido (City), San Diego County, California. Surveys were conducted under contract with the City.

**Project Description**

The City is planning to construct a replacement dam immediately downstream (west) of the existing dam and partially deconstruct the existing dam. Replacing the dam requires replacement or modification of the existing dam's outlet tower and associated pipes beneath the dam. To accommodate the replacement dam's configuration, the project also entails realignment of the portion of Oakvale Road that passes the southern dam abutment. This portion of the road will be realigned south of its current location, requiring excavation into the adjacent hillside. The intent of the project, in addition to improving the dam's seismic safety, is to return the reservoir to its previous height and regain the lost water storage capability and capacity. No changes to the 1,480-foot spillway crest elevation of the existing dam are proposed. Therefore, no changes to the historic high water level of Lake Wohlford are proposed.

**Site Description**

The proposed project is located approximately 7 miles east of Interstate 15 and 2 miles east of Valley Center Road. The project area is in unincorporated San Diego County, on land that is owned by the City (Figures 1 and 2). Most of the topography within the project area is granitic hills that gently slope toward Lake Wohlford. The surface of the lake has an average elevation of 1,480 feet above mean sea level. The main vegetation communities documented within the project area are coast live oak woodland, southern mixed chaparral, Diegan coastal sage scrub, southern willow scrub, wetlands, woodlands, various types of grasslands, and urban/developed (Figure 3). Most of the Diegan coastal sage scrub is located on south-facing hillsides along the north side of the lake. The majority of the riparian vegetation is located along the lake edge and within a few small drainages the feed into the lake. The primary source of water comes into the lake from the east. The east end of the lake has a gently westward-sloping sandy floodplain where the main river that feeds the lake

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meanders west before emptying into the lake. The majority of the riparian, wetland, and freshwater marsh occurs at the east end of the lake. The lake is surrounded by a few residential areas to the north and southeast, with the remaining area undeveloped natural habitat.

The proposed project is located within both the County of San Diego North County Multiple Species Conservation Program (NCMSCP) and the Multiple Habitat Conservation Program (MHCP) planning areas (County of San Diego 2009).

### **Background Information**

CAGN, a subspecies of the California gnatcatcher (*Polioptila californica*), is federally listed as threatened by the U.S. Fish and Wildlife Service (USFWS) (1993), and is considered a species of special concern by the California Department of Fish and Wildlife (CDFW) (State of California 2011). No recovery plan has been drafted for CAGN. CAGN is an uncommon year-round resident of Southern California. This species is declining proportionately with the continued loss of coastal sage scrub habitat in the six Southern California counties (San Bernardino, Ventura, Los Angeles, Orange, San Diego, and Riverside) located within the coastal plain.

The primary cause of the decline of CAGN is the cumulative loss of coastal sage scrub vegetation to urban and agricultural development. Studies suggest that CAGN may be highly sensitive to the effects of habitat fragmentation and development activity (Atwood 1990; ERCE 1990). USFWS has estimated that coastal sage scrub habitat has been reduced by 70 to 90% of its historical extent (USFWS 1991), and little of what remains is protected in natural open space.

CAGN generally inhabits Diegan coastal sage scrub and Riversidian coastal sage scrub dominated by California sagebrush (*Artemisia californica*) and flat-topped buckwheat (*Eriogonum fasciculatum*), usually at lower than 1,500 feet in elevation along the coastal slope. When nesting, CAGN typically avoids slopes greater than 25% with tall, dense vegetation. CAGN pairs will attempt several nests each year, each placed in a different location inside their breeding territory, but most nest attempts are unsuccessful due to depredation by a variety of species (Atwood and Bontrager 2001). Clutch size ranges from one to five eggs, with three or four eggs most common. CAGN typically experiences a high rate of nest failure, with an annual mean number of four nest attempts per pair in San Diego County (Grishaver et al. 1998). CAGN tends to have slightly smaller clutches in years with poor rainfall, and will experience a higher rate of mortality during cold winters (Atwood and Bontrager 2001; Grishaver et al. 1998). CAGN will remain paired through the nonbreeding season, and will generally expand its home range when not breeding.

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CAGN is particularly vulnerable to habitat destruction and fragmentation because of poor dispersal, reliance on a specific habitat type, and difficulty in successful breeding. On average, juvenile CAGN disperse less than 1.2 miles from their natal territories, making colonization of distant habitat patches difficult. CAGN is closely tied to coastal sage scrub and has been described as “obligate residents of coastal sage scrub” (Atwood and Bontrager 2001).

Critical habitat was originally designated for CAGN by USFWS in 2000, but this was revised, and a final rule was published in 2007 (USFWS 2007). Although there is no USFWS designated critical habitat for CAGN within the project area, critical habitat is located approximately 2,300 feet to the west of the project area. The closest known CAGN location is approximately 1.5 miles to the west of the project area (CNDDDB 2013).

### **Survey Methodology**

The CAGN survey area included all potentially suitable habitat within the project area, plus an adjacent 500-foot survey buffer. Before surveys, AECOM biologists conducted a habitat assessment within the survey area to outline potentially suitable CAGN habitat. This habitat was then digitized onto maps to establish a CAGN survey area of approximately 47 acres (Figure 4). Potentially suitable CAGN habitat includes Diegan coastal sage scrub, Diegan coastal sage scrub intermixed with southern mixed chaparral, and Diegan coastal sage scrub intermixed with grassland. All of the CAGN survey area is located on the north side of the lake.

CAGN surveys were completed during the breeding season of 2013 per USFWS guidelines (USFWS 1997). Surveys were conducted within the survey area in potentially suitable CAGN habitat. All surveys followed the current USFWS protocol for the species, dated February 28, 1997 (and as amended July 28, 1997) (USFWS 1997). AECOM biologists Andrew Fisher and Brennan Mulrooney conducted the surveys under Endangered Species Permit TE-820658-6. Additional AECOM staff Nick Janssen accompanied the permitted biologist on the first CAGN survey. CAGN surveys were conducted during morning hours when conditions were suitable to detect CAGN and continued until noon when bird activity usually decreased. Surveys were not conducted during periods of inclement weather such as extreme wind or during a rain event.

The CAGN survey area is located within the NCMSCP area (an active Natural Community Conservation Plan area); therefore, protocol requires three surveys to be conducted during the breeding season (February 15 through August 30). The three protocol surveys were separated by a minimum of 7 days, and were conducted from February 28 through August 15, 2013. Approximately 47 acres of potentially suitable CAGN habitat spread across the project area were surveyed, per the protocol (Figure 4).

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The survey consisted of walking meandering transects through potential CAGN habitat, including all scrub associations, uplands, and canyons. Biologists conducted passive surveillance (i.e., listening and looking for the species) in all habitats with potential to support CAGN. If an observation was not made after approximately 5 to 10 minutes of passive survey activity, a recorded vocalization of CAGN was played for approximately 5 to 10 seconds (i.e., active survey activity), followed by another period of passive observation. As allowed under AECOM’s endangered species permit (TE-820658-6), this survey activity “takes” CAGN through harassment with playback of taped CAGN vocalizations. No individual CAGN were captured.

**Results**

No CAGN were detected in the survey area during protocol surveys. A summary of survey dates, times, weather conditions, and permitted biologists are presented in Table 1. During surveys, temperature ranged from 50 to 84 degrees Fahrenheit and wind speed ranged from an average of 0 to 4 miles per hour.

**Table 1. Survey Dates, Personnel, and Weather Conditions**

Survey Number	Date	Survey Personnel	Time	Weather Conditions (mph = miles per hour)
1	2/28/2013	Andrew Fisher,* Nick Janssen	0741–1200	Start: 60°F, wind 3 mph, 0% cover End: 75°F, wind 4 mph, 0% cover
2	4/2/2013	Andrew Fisher, Brennan Mulrooney*	0700–1142	Start: 50°F, wind 0 mph, 0% cover End: 73°F, wind 2 mph, 15% cover
3	8/15/2013	Andrew Fisher	0701–0943	Start: 65°F, wind 0 mph, 0% cover End: 84°F, wind 2 mph, 0% cover

\*Permitted biologist

The CAGN survey area included 47 acres of potentially suitable habitat that was spread along the north side of the lake. There majority of the Diegan coastal sage scrub habitat was a mixture of black sage (*Salvia mellifera*), laural sumac (*Malosma laurina*), chamise chaparral (*Adenostoma fasciculatum*), flat-topped buckwheat (*Eriogonum fasciculatum*), and various types of ceanothus. There was very little California sagebrush within the Diegan coastal sage scrub. Most of the habitat was more xeric and exhibited vegetation structural traits more similar to southern mixed chaparral. Overall the habitat quality was fairly low for CAGN. The potential habitat consisted of small narrow areas of habitat along the north side of the lake, and adjacent to both sides of Lake Wohlford Road. The habitat was often intermixed with southern mixed chaparral and was generally tall, dry and dense, with shrubs over head-height.

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During the second protocol survey, at least 10 brown-headed cowbirds (*Molothrus ater*), composed of several pairs, were detected. This species is a potential CAGN nest parasite.

Four special-status wildlife species were detected during protocol surveys within or adjacent to the CAGN survey area: the CDFW species of special concern two-striped garter snake (*Thamnophis hammondi*), the federally delisted and state listed as endangered bald eagle (*Haliaeetus leucocephalus*), the CDFW species of special concern yellow warbler (*Setophaga petechia brewsteri*), and the CDFW watch list southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) (State of California 2011). Locations of these species are depicted in Figure 4. Field data collected during 2013 CAGN surveys is presented in Appendix A, and a list of all wildlife species detected is presented in Appendix B.

### **Discussion**

No CAGN were detected during protocol surveys for the proposed project. According to historical data, there are no known CAGN within the project area or immediate vicinity. Overall habitat quality was low for CAGN due to tall, dense, and dry Diegan coastal sage scrub that is adjacent to and intermixed with southern mixed chaparral.

If you have any questions or require additional information, feel free to contact me at (619) 233-1454.



Andrew Fisher  
Wildlife Biologist

Attachments:    Figure 1 – Regional Map  
                      Figure 2 – Vicinity Map  
                      Figure 3 – Vegetation Map  
                      Figure 4 – Survey Results Map  
                      Appendix A – Field Data Collected during 2013 CAGN Surveys  
                      Appendix B – Wildlife Species Detected during 2013 CAGN Surveys

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**Certification Statement**

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."



Andrew Fisher  
Wildlife Biologist  
TE-820658-6

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."



Nick Janssen  
Biologist

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."



Brennan Mulrooney  
Wildlife Biologist  
TE-820658-6

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- U.S. Fish and Wildlife Service (USFWS). 2007. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California Gnatcatcher (*Polioptila californica californica*); Final Rule. *Federal Register* 72:72009–72213.

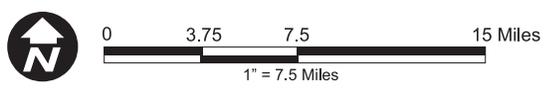


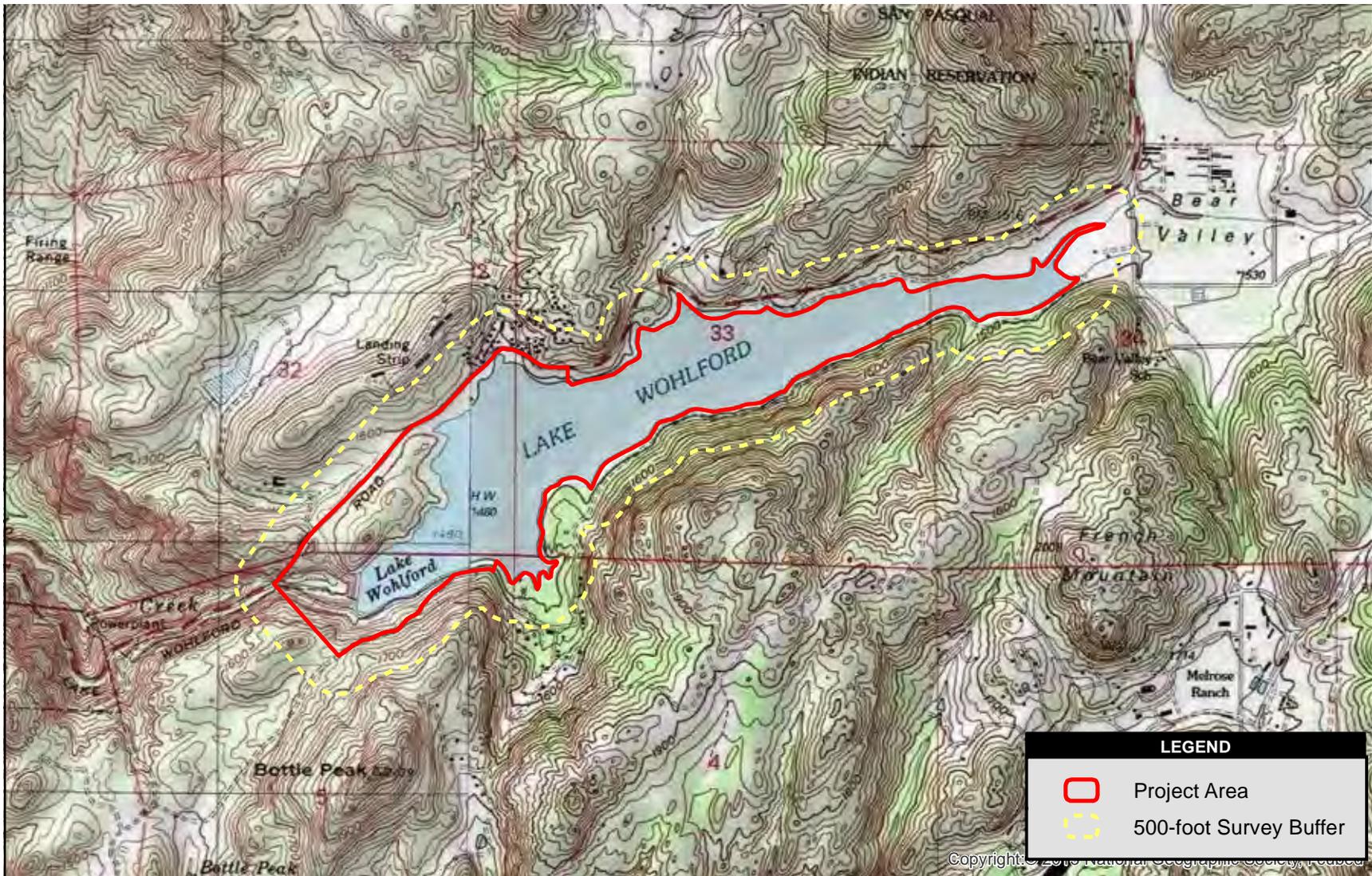
## FIGURES





**Figure 1**  
**Regional Map**

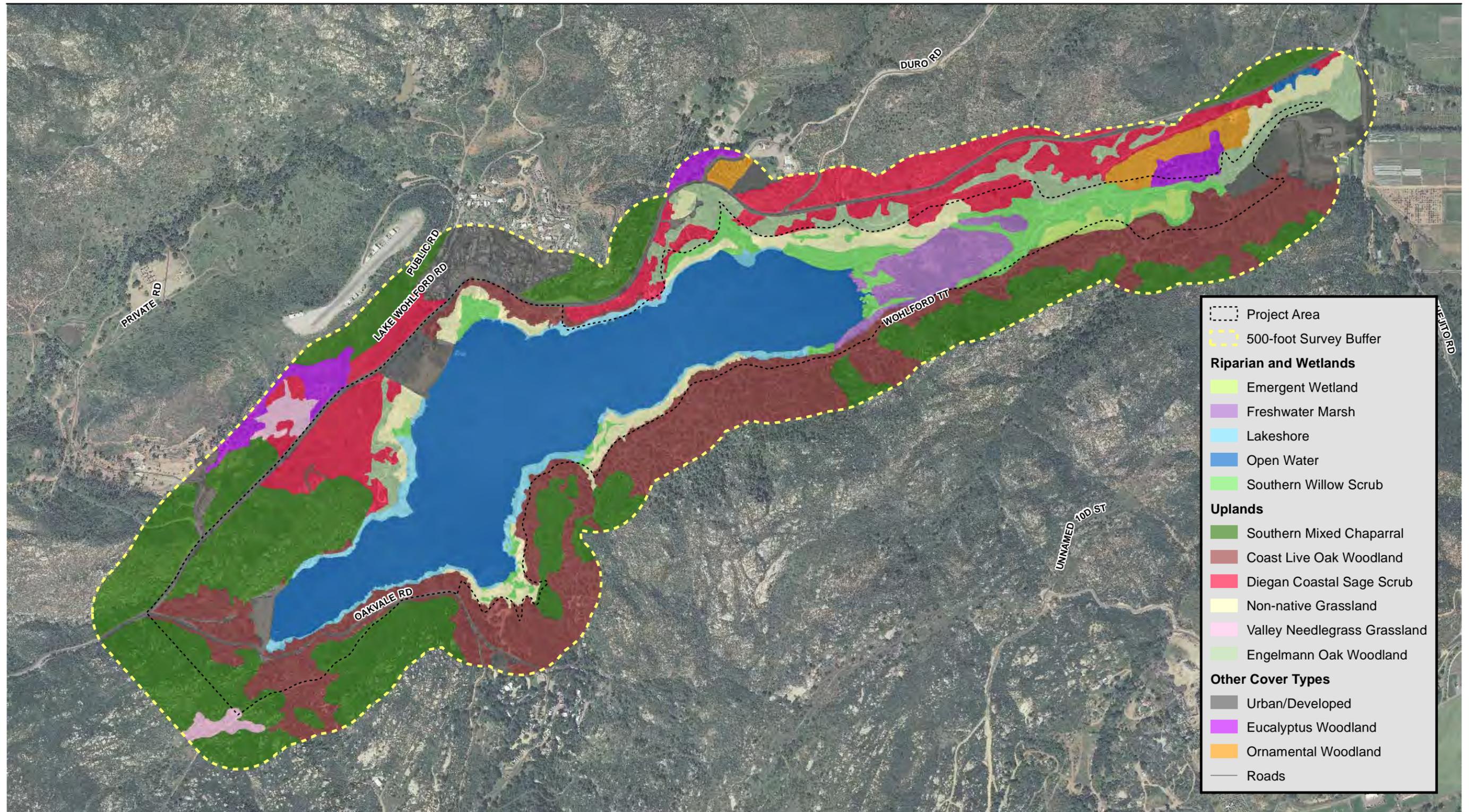




Source: USGS 7.5' Quad Valley Center 1975; USGS 7.5' Quad Rodriguez Mtn. 1988



**Figure 2**  
**Vicinity Map**



Project Area  
 500-foot Survey Buffer  
**Riparian and Wetlands**  
 Emergent Wetland  
 Freshwater Marsh  
 Lakeshore  
 Open Water  
 Southern Willow Scrub  
**Uplands**  
 Southern Mixed Chaparral  
 Coast Live Oak Woodland  
 Diegan Coastal Sage Scrub  
 Non-native Grassland  
 Valley Needlegrass Grassland  
 Engelmann Oak Woodland  
**Other Cover Types**  
 Urban/Developed  
 Eucalyptus Woodland  
 Ornamental Woodland  
 Roads

Source: NAIP 2012

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

**Figure 3**  
**Vegetation Map**



## **APPENDIX A**

### **FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS**



**APPENDIX A – FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS**

Primary_Bio	Asst_Bio	Date	Survey_Num	StartTime	StartTemp_F	StartCC	StartAvgWind_Sp	EndTime	EndTemp_F	EndCC	EndAvgWind	Notes	StartWind	EndWind_Dir
Andrew Fisher	Nick Janssen	2/28/2013	1	7:41:00 AM	60	0	3	12:00:00 PM	75	0	4	Survey 1 of 3	E	E
Andrew Fisher	Brennan Mulrooney	4/2/2013	2	7:00:00 AM	50	0	0	11:42:00 AM	73	15	2	Survey 2 of 3 with no CAGN.	N/A	W
Andrew Fisher		8/15/2013	3	7:01:24 AM	65	0	0	9:43:00 AM	84	0	2	Last CAGN survey and none detected.	N/A	W

Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher	Nick Janssen	1	2/28/2013	12:25:13 PM	Bird	Black Phoebe	Sayornis nigricans	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:20:18 PM	Bird	Red-tailed Hawk	Buteo jamaicensis	Accipitriformes	Accipitridae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:29:16 PM	Bird	Common Yellowthroat	Geothlypis trichas	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:29:05 PM	Bird	Greater Roadrunner	Geococcyx californianus	Cuculiformes	Cuculidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:28:50 PM	Bird	Northern Rough-winged Swallow	Stelgidopteryx serripennis	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:28:34 PM	Bird	Say's Phoebe	Sayornis saya	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:30:51 PM	Butterfly or moth	Acmon blue	Icaricia acmon acmon	Lepidoptera	Lycaenidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:25:23 PM	Bird	European Starling	Sturnus vulgaris	Passeriformes	Sturnidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:31:05 PM	Butterfly or moth	Western tiger swallowtail	Papilio rutulus							Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:25:05 PM	Bird	Mallard	Anas platyrhynchos	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:24:50 PM	Bird	Gadwall	Anas strepera	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:22:35 PM	Bird	double-crested cormorant	Phalacrocorax auritus	Suliformes	Phalacrocoracidae	None	None	DFG_WL-Watch List   IUCN_LC-Least Concern	No	Individual(s)	Adult	Male and Female	50	Foraging on lake
Andrew Fisher	Nick Janssen	1	2/28/2013	12:22:24 PM	Bird	Common Merganser	Mergus merganser	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:21:58 PM	Bird	Northern Shoveler	Anas clypeata	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:21:47 PM	Bird	Spotted Sandpiper	Actitis macularius	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:28:21 PM	Bird	Northern Mockingbird	Mimus polyglottos	Passeriformes	Mimidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:29:32 PM	Bird	Ruby-crowned Kinglet	Regulus calendula	Passeriformes	Regulidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:30:42 PM	Bird	Blue-gray Gnatcatcher	Polioptila caerulea	Passeriformes	Poliptilidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:30:31 PM	Bird	Western Bluebird	Sialia mexicana	Passeriformes	Turdidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS**

Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher	Nick Janssen	1	2/28/2013	12:30:25 PM	Bird	Hutton's Vireo	Vireo huttoni	Passeriformes	Vireonidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:30:18 PM	Bird	Bewick's Wren	Thryomanes bewickii	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:30:09 PM	Bird	California Quail	Callipepla californica	Galliformes	Odontophoridae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:29:26 PM	Bird	White-breasted Nuthatch	Sitta carolinensis	Passeriformes	Sittidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:29:40 PM	Bird	Turkey Vulture	Cathartes aura	Accipitriformes	Cathartidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:28:42 PM	Bird	Lesser Goldfinch	Spinus psaltria	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	9:08:45 AM	Snake	two-striped garter snake	Thamnophis hammondi	Serpentes	Natricidae	None	None	BLM_S-Sensitive   DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern   USFS_S-Sensitive	Yes	Individual(s)	Adult	Unknown	1	Foraging in coastal sage scrub
Andrew Fisher	Nick Janssen	1	2/28/2013	12:32:52 PM	Lizard	Southern Alligator Lizard	Elgaria multicarinata	Squamata	Anguidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:32:24 PM	Lizard	Side-Blotched Lizard	Uta stansburiana	Squamata	Phrynosomatidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:32:03 PM	Lizard	Granite Spiny Lizard	Sceloporus orcutti	Squamata	Phrynosomatidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:31:40 PM	Lizard	Western Fence Lizard	Sceloporus occidentalis	Squamata	Phrynosomatidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:31:20 PM	Butterfly or moth	Sara orangetip	Anthocharis sara sara	Lepidoptera	Pieridae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:29:52 PM	Bird	Golden-crowned Sparrow	Zonotrichia atricapilla	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:21:03 PM	Bird	Hermit Thrush	Catharus guttatus	Passeriformes	Turdidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:28:57 PM	Bird	Red-shouldered Hawk	Buteo lineatus	Accipitriformes	Accipitridae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:20:08 PM	Bird	Wrentit	Chamaea fasciata	Passeriformes	Sylviidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:18:43 PM	Bird	House Wren	Troglodytes aedon	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:18:53 PM	Bird	Spotted Towhee	Pipilo maculatus	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:19:01 PM	Bird	American Crow	Corvus brachyrhynchos	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:20:24 PM	Bird	Yellow-rumped Warbler	Setophaga coronata	Passeriformes	Parulidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS**

Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher	Nick Janssen	1	2/28/2013	12:20:33 PM	Bird	Northern Rough-winged Swallow	Stelgidopteryx serripennis	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:20:54 PM	Bird	Mourning Dove	Zenaida macroura	Columbiformes	Columbidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	11:43:29 AM	Bird	Rufous-crowned sparrow	Aimophila ruficeps	Passeriformes	Emberizidae				No	Individual(s)	Adult	Unknown	1	Foraging
Andrew Fisher	Nick Janssen	1	2/28/2013	12:21:10 PM	Bird	Fox Sparrow	Passerella iliaca	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:21:18 PM	Bird	Bushtit	Psaltriparus minimus	Passeriformes	Aegithalidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:21:30 PM	Bird	Anna's Hummingbird	Calypte anna	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:25:34 PM	Bird	Brewer's Blackbird	Euphagus cyanocephalus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:19:39 PM	Bird	Northern Flicker	Colaptes auratus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:19:57 PM	Bird	Oak Titmouse	Baeolophus inornatus	Passeriformes	Paridae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:20:44 PM	Bird	Red-winged Blackbird	Agelaius phoeniceus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:19:49 PM	Bird	White-crowned Sparrow	Zonotrichia leucophrys	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:25:47 PM	Bird	bald eagle	Haliaeetus leucocephalus	Accipitriformes	Accipitridae	Delisted	Endangered	BLM_S-Sensitive   CDF_S-Sensitive   DFG_FP-Fully Protected   IUCN_LC-Least Concern   USFS_S-Sensitive   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Unknown	1	Perched on the south side of the lake in a large tree.
Andrew Fisher	Nick Janssen	1	2/28/2013	12:19:30 PM	Bird	Song Sparrow	Melospiza melodia	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:19:21 PM	Bird	Acorn Woodpecker	Melanerpes formicivorus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:19:11 PM	Bird	American Coot	Fulica americana	Gruiformes	Rallidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:28:05 PM	Bird	California Towhee	Melospiza crissalis	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:27:25 PM	Bird	Western Scrub-Jay	Aphelocoma californica	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:27:17 PM	Bird	Common Raven	Corvus corax	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	Nick Janssen	1	2/28/2013	12:27:06 PM	Bird	Cassin's Kingbird	Tyrannus vociferans	Passeriformes	Tyrannidae				No	Individual(s)				

APPENDIX A – FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS

Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher	Nick Janssen	1	2/28/2013	12:28:12 PM	Bird	California Thrasher	Toxostoma redivivum	Passeriformes	Mimidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:20:59 AM	Bird	Rufous Hummingbird	Selasphorus rufus	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:09:10 AM	Bird	Barn Swallow	Hirundo rustica	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:09:17 AM	Bird	Bullock's Oriole	Icterus bullockii	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:11:04 AM	Bird	Lawrence's Goldfinch	Spinus lawrencei	Passeriformes	Fringillidae				No	Individual(s)	Unknown	Unknown	1	Flying
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:14:06 AM	Bird	Spotted Towhee	Pipilo maculatus	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:14:14 AM	Bird	Wrentit	Chamaea fasciata	Passeriformes	Sylviidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:18:26 AM	Bird	Song Sparrow	Melospiza melodia	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:18:31 AM	Bird	White-crowned Sparrow	Zonotrichia leucophrys	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:22:49 AM	Bird	Common Raven	Corvus corax	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:20:52 AM	Bird	Anna's Hummingbird	Calypte anna	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:24:41 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Courtship display
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:25:14 AM	Bird	Violet-green Swallow	Tachycineta thalassina	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:09:01 AM	Bird	Tree Swallow	Tachycineta bicolor	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:19:34 AM	Bird	Wilson's Warbler	Cardellina pusilla	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:08:56 AM	Bird	Phainopepla	Phainopepla nitens	Passeriformes	Ptilonotidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:05:19 AM	Bird	California Towhee	Melospiza crissalis	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:04:45 AM	Bird	California Thrasher	Toxostoma redivivum	Passeriformes	Mimidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:04:35 AM	Bird	Yellow-rumped Warbler	Setophaga coronata	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:04:29 AM	Bird	Black Phoebe	Sayornis nigricans	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:04:22 AM	Bird	Bushtit	Psaltriparus minimus	Passeriformes	Aegithalidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:04:17 AM	Bird	Lesser Goldfinch	Spinus psaltria	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:02:39 AM	Bird	Cassin's Kingbird	Tyrannus vociferans	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:02:11 AM	Bird	Mallard	Anas platyrhynchos	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:02:16 AM	Bird	Acorn Woodpecker	Melanerpes formicivorus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:02:22 AM	Bird	European Starling	Sturnus vulgaris	Passeriformes	Sturnidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS**

Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:02:34 AM	Bird	Red-shouldered Hawk	Buteo lineatus	Accipitriformes	Accipitridae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:02:05 AM	Bird	House Wren	Troglodytes aedon	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:28:08 AM	Bird	Mourning Dove	Zenaida macroura	Columbiformes	Columbidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:02:28 AM	Bird	House Finch	Haemorhous mexicanus	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:40:11 AM	Bird	Forster's Tern	Sterna forsteri	Charadriiformes	Laridae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:24:50 AM	Bird	Pacific-slope Flycatcher	Empidonax difficilis	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:28:52 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	2	Calling
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:29:34 AM	Bird	Black-chinned Hummingbird	Archilochus alexandri	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:29:40 AM	Bird	Hermit Thrush	Catharus guttatus	Passeriformes	Turdidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:34:42 AM	Bird	great egret	Ardea alba	Pelecaniformes	Ardeidae	None	None	CDF_S-Sensitive   IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	1	Foraging
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:35:05 AM	Bird	Eared Grebe	Podiceps nigricollis	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:35:32 AM	Bird	American White Pelican	Pelecanus erythrorhynchos	Pelecaniformes	Pelecanidae				No	Individual(s)	Adult	Unknown	1	Perching
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:36:11 AM	Bird	Killdeer	Charadrius vociferus	Charadriiformes	Charadriidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:36:17 AM	Bird	Least Sandpiper	Calidris minutilla	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:36:35 AM	Bird	Bufflehead	Bucephala albeola	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:36:41 AM	Bird	Ruddy Duck	Oxyura jamaicensis	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:20:31 AM	Bird	Clark's Grebe	Aechmophorus clarkii	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:39:41 AM	Bird	Canyon Wren	Catherpes mexicanus	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	9:07:27 AM	Butterfly or moth	Perplexing (bramble) hairstreak	Callophrys dumetorum	Lepidoptera	Lycaenidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:27:59 AM	Bird	Great-tailed Grackle	Quiscalus mexicanus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	9:07:49 AM	Butterfly or moth	Red admiral	Vanessa atalanta	Lepidoptera	Nymphalidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS**

Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:25:19 AM	Bird	Cliff Swallow	Petrochelidon pyrrhonota	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	9:21:49 AM	Bird	Ruby-crowned Kinglet	Regulus calendula	Passeriformes	Regulidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	9:38:57 AM	Butterfly or moth	Western tiger swallowtail	Papilio rutulus							Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	9:41:58 AM	Bird	California Quail	Callipepla californica	Galliformes	Odontophoridae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	9:42:13 AM	Bird	Barn Owl	Tyto alba	Strigiformes	Tytonidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	10:07:00 AM	Butterfly or moth	Southern (silvery) blue	Glaucopsyche lygdamus australis	Lepidoptera	Lycaenidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	10:07:17 AM	Bird	Hutton's Vireo	Vireo huttoni	Passeriformes	Vireonidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	10:09:12 AM	Bird	American Crow	Corvus brachyrhynchos	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	10:27:10 AM	Butterfly or moth	Pale swallowtail	Papilio eurymedon	Lepidoptera	Papilionidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	10:42:12 AM	Bird	White-breasted Nuthatch	Sitta carolinensis	Passeriformes	Sittidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:36:47 AM	Bird	great blue heron	Ardea herodias	Pelecaniformes	Ardeidae	None	None	CDF_S-Sensitive   IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	1	Foraging
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:55:50 AM	Bird	American Coot	Fulica americana	Gruiformes	Rallidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	9:20:17 AM	Bird	Bewick's Wren	Thryomanes bewickii	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:20:24 AM	Bird	Western Grebe	Aechmophorus occidentalis	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:33:38 AM	Bird	Orange-crowned Warbler	Oreothlypis celata	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:40:23 AM	Bird	Cedar Waxwing	Bombycilla cedrorum	Passeriformes	Bombycillidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:47:11 AM	Bird	Turkey Vulture	Cathartes aura	Accipitriformes	Cathartidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:56:00 AM	Bird	Belted Kingfisher	Megaceryle alcyon	Coraciiformes	Alcedinidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:56:08 AM	Bird	Ash-throated Flycatcher	Myiarchus cinerascens	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:56:15 AM	Bird	Rufous-crowned sparrow	Aimophila ruficeps	Passeriformes	Emberizidae				No	Individual(s)	Adult	Unknown	1	Calling

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS**

Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:07:55 AM	Bird	Costa's hummingbird	Calypte costae	Apodiformes	Trochilidae	None	None	ABC_WLBCC-Watch List of Birds of Conservation Concern   IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	1	Flying
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:11:14 AM	Bird	Northern Shoveler	Anas clypeata	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:11:29 AM	Bird	Pied-billed Grebe	Podilymbus podiceps	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:11:46 AM	Bird	double-crested cormorant	Phalacrocorax auritus	Suliformes	Phalacrocoracidae	None	None	DFG_WL-Watch List   IUCN_LC-Least Concern	No	Individual(s)	Adult	Male and Female	10	Roosting
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:49:04 AM	Bird	snowy egret	Egretta thula	Pelecaniformes	Ardeidae	None	None	IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	1	Flying
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:20:17 AM	Bird	American Kestrel	Falco sparverius	Falconiformes	Falconidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	6:46:32 AM	Bird	Oak Titmouse	Baeolophus inornatus	Passeriformes	Paridae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:12:15 AM	Bird	Spotted Towhee	Pipilo maculatus	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:08:12 AM	Bird	Western Bluebird	Sialia mexicana	Passeriformes	Turdidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	8:19:44 AM	Bird	Cooper's hawk	Accipiter cooperii	Accipitriformes	Accipitridae	None	None	DFG_WL-Watch List   IUCN_LC-Least Concern	No	Individual(s)	Adult	Male	1	Perching
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:45:33 AM	Bird	Blue-gray Gnatcatcher	Poliptila caerulea	Passeriformes	Poliptilidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:38:57 AM	Bird	Northern Flicker	Colaptes auratus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:38:51 AM	Bird	Nuttall's Woodpecker	Picoides nuttallii	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:36:24 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:36:02 AM	Bird	Western Scrub-Jay	Aphelocoma californica	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:25:19 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	7	Flying
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:24:41 AM	Bird	Northern Mockingbird	Mimus polyglottos	Passeriformes	Mimidae				No	Individual(s)				
Andrew Fisher	Brennan Mulrooney	2	4/2/2013	7:18:03 AM	Bird	Common Yellowthroat	Geothlypis trichas	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	9:42:20 AM	Terrestrial Mammal	Virginia Opossum	Didelphis virginiana	Didelphimorphia	Didelphidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:59:14 AM	Bird	Belted Kingfisher	Megaceryle alcyon	Coraciiformes	Alcedinidae				No	Individual(s)				

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Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher		3	8/15/2013	9:42:50 AM	Terrestrial Mammal	California Ground Squirrel	Spermophilus beecheyi	Rodentia	Sciuridae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:45:24 AM	Bird	Nuttall's Woodpecker	Picoides nuttallii	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:45:29 AM	Bird	Cliff Swallow	Petrochelidon pyrrhonota	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:45:35 AM	Bird	California Quail	Callipepla californica	Galliformes	Odontophoridae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:45:48 AM		Selasphorus species	Selasphorus sp.							Individual(s)				
Andrew Fisher		3	8/15/2013	9:42:38 AM	Terrestrial Mammal	Coyote	Canis latrans	Carnivora	Canidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:59:27 AM	Bird	Spotted Sandpiper	Actitis macularius	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	8:59:37 AM	Bird	Oak Titmouse	Baeolophus inornatus	Passeriformes	Paridae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	8:59:43 AM	Bird	Red-tailed Hawk	Buteo jamaicensis	Accipitriformes	Accipitridae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	9:43:03 AM	Terrestrial Mammal	Desert Cottontail	Sylvilagus audubonii	Lagomorpha	Leporidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	10:43:17 AM	Bird	black-crowned night heron	Nycticorax nycticorax	Pelecaniformes	Ardeidae	None	None	IUCN_LC-Least Concern	No	Individual(s)	Adult	Male and Female	4	Large roosting tree. No nests observed but lots of whitewash from BCNH, GREG, SNEG, etc.
Andrew Fisher		3	8/15/2013	10:47:23 AM	Bird	black-crowned night heron	Nycticorax nycticorax	Pelecaniformes	Ardeidae	None	None	IUCN_LC-Least Concern	No	Individual(s)	Adult	Male and Female	2	Several more roosting trees. No nests observed.
Andrew Fisher		3	8/15/2013	9:00:13 AM	Bird	Common Yellowthroat	Geothlypis trichas	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:16 AM	Bird	Wrentit	Chamaea fasciata	Passeriformes	Sylviidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	9:43:26 AM	Terrestrial Mammal	Raccoon	Procyon lotor	Carnivora	Procyonidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:59 AM	Bird	Common Raven	Corvus corax	Passeriformes	Corvidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 CAGN SURVEYS**

Primary_Bio	Asst_Bio	Survey_Num	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionTyp	Age	Sex	Number	BehaviorNotes
Andrew Fisher		3	8/15/2013	10:51:28 AM	Bird	Caspian tern	Hydroprogne caspia	Charadriiformes	Laridae	None	None	IUCN_LC-Least Concern   USFWS_BCC-Birds of Conservation Concern	No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:02:10 AM	Bird	Song Sparrow	Melospiza melodia	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:10 AM	Bird	Spotted Towhee	Pipilo maculatus	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:22 AM	Bird	California Thrasher	Toxostoma redivivum	Passeriformes	Mimidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:34 AM	Bird	House Finch	Haemorhous mexicanus	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:39 AM	Bird	Anna's Hummingbird	Calypte anna	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:28 AM	Bird	California Towhee	Melospiza crissalis	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:51 AM	Bird	Lesser Goldfinch	Spinus psaltria	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	9:00:07 AM	Bird	Black Phoebe	Sayornis nigricans	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:19:04 AM	Bird	Bewick's Wren	Thryomanes bewickii	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:30:58 AM	Bird	Blue-gray Gnatcatcher	Poliioptila caerulea	Passeriformes	Poliioptilidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:31:03 AM	Bird	Orange-crowned Warbler	Oreothlypis celata	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	8:59:51 AM	Bird	European Starling	Sturnus vulgaris	Passeriformes	Sturnidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	8:59:57 AM	Bird	Northern Flicker	Colaptes auratus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	9:00:02 AM	Bird	Mallard	Anas platyrhynchos	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher		3	8/15/2013	7:18:45 AM	Bird	Acorn Woodpecker	Melanerpes formicivorus	Piciformes	Picidae				No	Individual(s)				



## **APPENDIX B**

### **WILDLIFE SPECIES DETECTED DURING 2013 CAGN SURVEYS**



## APPENDIX B – WILDLIFE SPECIES DETECTED DURING 2013 CAGN SURVEYS

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/ Species of Special Concern)*
<b>Invertebrates</b>					
perplexing (bramble) hairstreak	<i>Callophrys dumetorum</i>	Lepidoptera	Lycaenidae	None	None
southern (silvery) blue	<i>Glaucopsyche lygdamus australis</i>	Lepidoptera	Lycaenidae	None	None
acmon blue	<i>Icaricia acmon acmon</i>	Lepidoptera	Lycaenidae	None	None
red admiral	<i>Vanessa atalanta</i>	Lepidoptera	Nymphalidae	None	None
pale swallowtail	<i>Papilio eurymedon</i>	Lepidoptera	Papilionidae	None	None
western tiger swallowtail	<i>Papilio rutulus</i>	Lepidoptera	Papilionidae	None	None
Sara orangetip	<i>Anthocharis sara sara</i>	Lepidoptera	Pieridae	None	None
<b>Reptiles &amp; Amphibians</b>					
southern alligator lizard	<i>Elgaria multicarinata</i>	Squamata	Anguidae	None	None
western fence lizard	<i>Sceloporus occidentalis</i>	Squamata	Phrynosomatidae	None	None
granite spiny lizard	<i>Sceloporus orcutti</i>	Squamata	Phrynosomatidae	None	None
side-blotched lizard	<i>Uta stansburiana</i>	Squamata	Phrynosomatidae	None	None
two-striped garter snake	<i>Thamnophis hammondi</i>	Serpentes	Natricidae	None	Species of Special Concern
<b>Avian</b>					
Cooper's hawk	<i>Accipiter cooperii</i>	Accipitriformes	Accipitridae	None	None
red-tailed hawk	<i>Buteo jamaicensis</i>	Accipitriformes	Accipitridae	None	None
red-shouldered hawk	<i>Buteo lineatus</i>	Accipitriformes	Accipitridae	None	None
bald eagle	<i>Haliaeetus leucocephalus</i>	Accipitriformes	Accipitridae	Delisted	Endangered
turkey vulture	<i>Cathartes aura</i>	Accipitriformes	Cathartidae	None	None
northern shoveler	<i>Anas clypeata</i>	Anseriformes	Anatidae	None	None
mallard	<i>Anas platyrhynchos</i>	Anseriformes	Anatidae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/ Species of Special Concern)*
gadwall	<i>Anas strepera</i>	Anseriformes	Anatidae	None	None
bufflehead	<i>Bucephala albeola</i>	Anseriformes	Anatidae	None	None
common merganser	<i>Mergus merganser</i>	Anseriformes	Anatidae	None	None
ruddy duck	<i>Oxyura jamaicensis</i>	Anseriformes	Anatidae	None	None
black-chinned hummingbird	<i>Archilochus alexandri</i>	Apodiformes	Trochilidae	None	None
Anna's hummingbird	<i>Calypte anna</i>	Apodiformes	Trochilidae	None	None
Costa's hummingbird	<i>Calypte costae</i>	Apodiformes	Trochilidae	None	None
rufous hummingbird	<i>Selasphorus rufus</i>	Apodiformes	Trochilidae	None	None
killdeer	<i>Charadrius vociferus</i>	Charadriiformes	Charadriidae	None	None
Caspian tern	<i>Hydroprogne caspia</i>	Charadriiformes	Laridae	None	None
Forster's tern	<i>Sterna forsteri</i>	Charadriiformes	Laridae	None	None
spotted sandpiper	<i>Actitis macularius</i>	Charadriiformes	Scolopacidae	None	None
least sandpiper	<i>Calidris minutilla</i>	Charadriiformes	Scolopacidae	None	None
mourning dove	<i>Zenaida macroura</i>	Columbiformes	Columbidae	None	None
belted kingfisher	<i>Megaceryle alcyon</i>	Coraciiformes	Alcedinidae	None	None
greater roadrunner	<i>Geococcyx californianus</i>	Cuculiformes	Cuculidae	None	None
American kestrel	<i>Falco sparverius</i>	Falconiformes	Falconidae	None	None
California quail	<i>Callipepla californica</i>	Galliformes	Odontophoridae	None	None
American coot	<i>Fulica americana</i>	Gruiformes	Rallidae	None	None
bushtit	<i>Psaltriparus minimus</i>	Passeriformes	Aegithalidae	None	None
cedar waxwing	<i>Bombycilla cedrorum</i>	Passeriformes	Bombycillidae	None	None
western scrub-jay	<i>Aphelocoma californica</i>	Passeriformes	Corvidae	None	None
American crow	<i>Corvus brachyrhynchos</i>	Passeriformes	Corvidae	None	None
common raven	<i>Corvus corax</i>	Passeriformes	Corvidae	None	None
rufous-crowned sparrow	<i>Aimophila ruficeps</i>	Passeriformes	Emberizidae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/ Species of Special Concern)*
song sparrow	<i>Melospiza melodia</i>	Passeriformes	Emberizidae	None	None
California towhee	<i>Melospiza crissalis</i>	Passeriformes	Emberizidae	None	None
fox sparrow	<i>Passerella iliaca</i>	Passeriformes	Emberizidae	None	None
spotted towhee	<i>Pipilo maculatus</i>	Passeriformes	Emberizidae	None	None
golden-crowned sparrow	<i>Zonotrichia atricapilla</i>	Passeriformes	Emberizidae	None	None
white-crowned sparrow	<i>Zonotrichia leucophrys</i>	Passeriformes	Emberizidae	None	None
house finch	<i>Haemorhous mexicanus</i>	Passeriformes	Fringillidae	None	None
Lawrence's goldfinch	<i>Spinus lawrencei</i>	Passeriformes	Fringillidae	None	None
lesser goldfinch	<i>Spinus psaltria</i>	Passeriformes	Fringillidae	None	None
barn swallow	<i>Hirundo rustica</i>	Passeriformes	Hirundinidae	None	None
cliff swallow	<i>Petrochelidon pyrrhonota</i>	Passeriformes	Hirundinidae	None	None
northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	Passeriformes	Hirundinidae	None	None
tree swallow	<i>Tachycineta bicolor</i>	Passeriformes	Hirundinidae	None	None
violet-green swallow	<i>Tachycineta thalassina</i>	Passeriformes	Hirundinidae	None	None
red-winged blackbird	<i>Agelaius phoeniceus</i>	Passeriformes	Icteridae	None	None
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Passeriformes	Icteridae	None	None
Bullock's oriole	<i>Icterus bullockii</i>	Passeriformes	Icteridae	None	None
brown-headed cowbird	<i>Molothrus ater</i>	Passeriformes	Icteridae	None	None
great-tailed grackle	<i>Quiscalus mexicanus</i>	Passeriformes	Icteridae	None	None
northern mockingbird	<i>Mimus polyglottos</i>	Passeriformes	Mimidae	None	None
California thrasher	<i>Toxostoma redivivum</i>	Passeriformes	Mimidae	None	None
oak titmouse	<i>Baeolophus inornatus</i>	Passeriformes	Paridae	None	None
Wilson's warbler	<i>Cardellina pusilla</i>	Passeriformes	Parulidae	None	None
common yellowthroat	<i>Geothlypis trichas</i>	Passeriformes	Parulidae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/ Species of Special Concern)*
orange-crowned warbler	<i>Oreothlypis celata</i>	Passeriformes	Parulidae	None	None
yellow-rumped warbler	<i>Setophaga coronata</i>	Passeriformes	Parulidae	None	None
yellow warbler	<i>Setophaga petechia brewsteri</i>	Passeriformes	Parulidae	None	Species of Special Concern
blue-gray gnatcatcher	<i>Polioptila caerulea</i>	Passeriformes	Polioptilidae	None	None
phainopepla	<i>Phainopepla nitens</i>	Passeriformes	Ptilonotidae	None	None
ruby-crowned kinglet	<i>Regulus calendula</i>	Passeriformes	Regulidae	None	None
white-breasted nuthatch	<i>Sitta carolinensis</i>	Passeriformes	Sittidae	None	None
European starling	<i>Sturnus vulgaris</i>	Passeriformes	Sturnidae	None	None
wren	<i>Chamaea fasciata</i>	Passeriformes	Sylviidae	None	None
canyon wren	<i>Catherpes mexicanus</i>	Passeriformes	Troglodytidae	None	None
Bewick's wren	<i>Thryomanes bewickii</i>	Passeriformes	Troglodytidae	None	None
house wren	<i>Troglodytes aedon</i>	Passeriformes	Troglodytidae	None	None
hermit thrush	<i>Catharus guttatus</i>	Passeriformes	Turdidae	None	None
western bluebird	<i>Sialia mexicana</i>	Passeriformes	Turdidae	None	None
pacific-slope flycatcher	<i>Empidonax difficilis</i>	Passeriformes	Tyrannidae	None	None
ash-throated flycatcher	<i>Myiarchus cinerascens</i>	Passeriformes	Tyrannidae	None	None
black phoebe	<i>Sayornis nigricans</i>	Passeriformes	Tyrannidae	None	None
Say's phoebe	<i>Sayornis saya</i>	Passeriformes	Tyrannidae	None	None
Cassin's kingbird	<i>Tyrannus vociferans</i>	Passeriformes	Tyrannidae	None	None
Hutton's vireo	<i>Vireo huttoni</i>	Passeriformes	Vireonidae	None	None
great egret	<i>Ardea alba</i>	Pelecaniformes	Ardeidae	None	None
great blue heron	<i>Ardea herodias</i>	Pelecaniformes	Ardeidae	None	None
snowy egret	<i>Egretta thula</i>	Pelecaniformes	Ardeidae	None	None
black-crowned night heron	<i>Nycticorax nycticorax</i>	Pelecaniformes	Ardeidae	None	None
American white pelican	<i>Pelecanus erythrorhynchos</i>	Pelecaniformes	Pelecanidae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/ Species of Special Concern)*
northern flicker	<i>Colaptes auratus</i>	Piciformes	Picidae	None	None
acorn woodpecker	<i>Melanerpes formicivorus</i>	Piciformes	Picidae	None	None
Nuttall's woodpecker	<i>Picoides nuttallii</i>	Piciformes	Picidae	None	None
Clark's grebe	<i>Aechmophorus clarkii</i>	Podicipediformes	Podicipedidae	None	None
western grebe	<i>Aechmophorus occidentalis</i>	Podicipediformes	Podicipedidae	None	None
eared grebe	<i>Podiceps nigricollis</i>	Podicipediformes	Podicipedidae	None	None
pied-billed grebe	<i>Podilymbus podiceps</i>	Podicipediformes	Podicipedidae	None	None
barn owl	<i>Tyto alba</i>	Strigiformes	Tytonidae	None	None
double-crested cormorant	<i>Phalacrocorax auritus</i>	Suliformes	Phalacrocoracidae	None	None
<b>Mammals</b>					
coyote	<i>Canis latrans</i>	Carnivora	Canidae	None	None
raccoon	<i>Procyon lotor</i>	Carnivora	Procyonidae	None	None
Virginia opossum	<i>Didelphis virginiana</i>	Didelphimorphia	Didelphidae	None	None
desert cottontail	<i>Sylvilagus audubonii</i>	Lagomorpha	Leporidae	None	None
California ground squirrel	<i>Spermophilus beecheyi</i>	Rodentia	Sciuridae	None	None

\* Sensitive status taken from State of California 2011



**APPENDIX B**

**45-DAY REPORT FOR  
LEAST BELL'S VIREO**





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October 4, 2013

Ms. Susie Tharratt  
Recovery Permit Coordinator  
Carlsbad Fish and Wildlife Office  
2177 Salk Avenue, Suite 250  
Carlsbad, California 92008

**RE: 2013 Lake Wohlford Dam Replacement Project Least Bell's Vireo 45-Day  
Summary Report, San Diego County, California**

Dear Ms. Tharratt:

AECOM submits this letter report summarizing the results of focused surveys conducted in 2013 to determine the presence or absence of the federally endangered least Bell's vireo (*Vireo bellii pusillus*) (LBV) for the Lake Wohlford Dam Replacement Project (project) within the City of Escondido (City), San Diego County, California. Surveys were conducted under contract with the City.

**Project Description**

The City is planning to construct a replacement dam immediately downstream (west) of the existing dam and partially deconstruct the existing dam. Replacing the dam requires replacement or modification of the existing dam's outlet tower and associated pipes beneath the dam. To accommodate the replacement dam's configuration, the project also entails realignment of the portion of Oakvale Road that passes the southern dam abutment. This portion of the road will be realigned south of its current location, requiring excavation into the adjacent hillside. The intent of the project, in addition to improving the dam's seismic safety, is to return the reservoir to its previous height and regain the lost water storage capability and capacity. No changes to the 1,480-foot spillway crest elevation of the existing dam are proposed. Therefore, no changes to the historic high water level of Lake Wohlford are proposed.

**Site Description**

The proposed project is located approximately 7 miles east of Interstate 15 and 2 miles east of Valley Center Road. The project area is in unincorporated San Diego County, on land that is owned by the City (Figures 1 and 2). Most of the topography within the project area is granitic hills that gently slope toward Lake Wohlford. The surface of the lake has an average elevation of 1,480 feet above mean sea level. The main vegetation communities documented within the project area are coast live oak woodland, southern mixed chaparral, Diegan coastal sage scrub, southern willow scrub, wetlands, woodlands, various types of grasslands, and urban/developed (Figure 3). The majority of the riparian vegetation is located along the lake edge and within a few small drainages the feed into the lake. The primary source of water comes into the lake from the east. The east end of the lake has a gently westward-sloping sandy floodplain where the main river that feeds the lake meanders west before emptying into the lake. The majority of the riparian, wetland, and freshwater marsh occurs at the east end of the lake. The lake is surrounded by a few residential areas to the north and southeast, with the remaining area currently left as undeveloped natural habitat.

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Recovery Permit Coordinator  
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The proposed project is located within both the County of San Diego North County Multiple Species Conservation Program (NCMSCP) and the Multiple Habitat Conservation Program (MHCP) planning areas (County of San Diego 2009).

### **Background Information**

LBV was listed as endangered by the U.S. Fish and Wildlife Service (USFWS) on May 2, 1986 (Federal Register 51[85]:16474–16481), with designated critical habitat (Federal Register 59[22]:4845–4867). This listing status applies to the entire population of LBV. A draft recovery plan was written by USFWS and circulated for review in 1998 (USFWS 1998). No critical habitat occurs within the project area. The California Department of Fish and Wildlife (CDFW) listed this subspecies as endangered on October 2, 1980.

Historically, this subspecies was a common summer visitor to riparian habitat throughout much of California. Currently, LBV is found only in riparian woodlands in Southern California, with the majority of breeding pairs in San Diego, Santa Barbara, and Riverside Counties. LBV is restricted to riparian woodland and is most frequent in areas that combine an understory of dense young willows (*Salix* species) or mulefat (*Baccharis salicifolia*) with a canopy of tall willows. Since LBV build their nests in dense shrubbery 3 to 4 feet above the ground (Salata 1984), they require young successional riparian habitat or older habitat with a dense understory. Therefore, riparian plant succession is an important factor in maintaining LBV habitat. Nests are also often placed along internal or external edges of riparian thickets (Unitt 2004). LBV is migratory and arrives in Southern California in late March and early April, and leaves for its wintering ground in September.

LBV's decline is attributed to loss, degradation, and fragmentation of riparian habitat combined with brood/nest parasitism by brown-headed cowbird (*Molothrus ater*). Due to concerted programs focused on preserving, enhancing, and creating suitable nesting habitat, the LBV population has steadily increased in size along several of its breeding drainages in Southern California (USFWS 2006). For example, the number of male LBV territories in the Prado Basin of western Riverside County increased from 20 in 1987 to 538 in 2009 (Pike et al. 2010).

There is no critical habitat for LBV within the project area or the immediate vicinity. The closest critical habitat is located approximately 14 miles to the north along the San Luis Rey River. According to the California Natural Diversity Database there are few historical LBV locations around the project area. The closest breeding population of LBV is located at the east end of Lake Hodges, approximately 7 miles to the southwest. The closest and most recent LBV was detected within the project area on April 1, 2009 on the northeast side of the lake (CNDDDB 2013).

### **Survey Methodology**

The LBV survey area includes all potentially suitable habitat within the project area, plus an adjacent 500-foot survey buffer. Before surveys, AECOM biologists conducted a habitat

Ms. Susie Tharratt  
 Recovery Permit Coordinator  
 Carlsbad Fish and Wildlife Office  
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assessment within the survey area to outline potentially suitable LBV habitat. This habitat was then digitized onto maps to establish an LBV survey area of approximately 34 acres (Figure 4). Potentially suitable LBV habitat included southern willow scrub. The majority of the LBV survey area is located on the north and east sides of the lake, with a few small areas on the south side of the lake.

LBV surveys were completed during the breeding season of 2013. Focused surveys followed the current USFWS survey guidelines for the species, dated January 19, 2001 (USFWS 2001). Surveys were conducted by AECOM biologist Andrew Fisher. The survey consisted of walking meandering transects through potential LBV habitat and conducting passive surveillance (i.e., listening and looking for the species). No taped LBV vocalizations were played. Per USFWS guidelines, the area was surveyed eight times during 2013. Surveys were conducted at least 10 days apart and typically completed between dawn and 11 a.m. All surveys occurred between April 22 and July 23, 2013. Surveys were not conducted during periods of inclement weather such as extreme wind or during a rain event.

**Results**

No LBV were detected during any of the protocol surveys. A summary of survey dates, times, weather conditions, permitted biologists, and observations are presented in Table 1. During surveys, temperature ranged from 55 to 78 degrees Fahrenheit, and wind speed ranged from 0 to 3 miles per hour.

**Table 1. Survey Number and Date, Personnel, Time, and Weather Conditions**

Survey Number	Date	Survey Personnel	Time	Weather Conditions (mph = miles per hour)
1	4/22/2013	Andrew Fisher	0724–1100	Start: 59°F, wind 0 mph, 100% cover End: 70°F, wind 3 mph, 0% cover
2	5/9/2013	Andrew Fisher	0752–1100	Start: 55°F, wind 0 mph, 50% cover End: 68°F, wind 2 mph, 85% cover
3	5/23/2013	Andrew Fisher	0700–1051	Start: 56°F, wind 0 mph, 10% cover End: 72°F, wind 3 mph, 0% cover
4	6/6/2013	Andrew Fisher	0629–1030	Start: 64°F, wind 0 mph, 100% cover End: 78°F, wind 2 mph, 0% cover
5	6/18/2013	Andrew Fisher	0737–1017	Start: 63°F, wind 0 mph, 0% cover End: 72°F, wind 3 mph, 0% cover
6	7/1/2013	Andrew Fisher	0728–1029	Start: 73°F, wind 0 mph, 100% cover End: 78°F, wind 3 mph, 80% cover
7	7/11/2013	Andrew Fisher	0731–1032	Start: 67°F, wind 0 mph, 100% cover End: 73°F, wind 0 mph, 100% cover
8	7/23/2013	Andrew Fisher	0701–0940	Start: 62°F, wind 0 mph, 0% cover End: 73°F, wind 2 mph, 0% cover

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Recovery Permit Coordinator  
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During the surveys, several brown-headed cowbirds were detected flying, foraging, calling, and perching. Table 2 details the date and observation information for all brown-headed cowbirds detected during LBV surveys.

**Table 2. Brown-Headed Cowbird Detections**

<b>Survey Number</b>	<b>Date</b>	<b>Observation Type</b>
1	4/22/2013	3 males, 3 females
2	5/9/2013	1 male, 1 female, 1 unknown individual
3	5/23/2013	5 males, 1 female
4	6/6/2013	5 males, 4 females
5	6/18/2013	5 males, 6 females
6	7/1/2013	1 unknown individual
7	7/11/2013	2 males, 2 females
8	7/23/2013	None
Total		40

On average, five brown-headed cowbirds were detected per survey. They were usually seen perched near the east end of the lake or flying overhead toward the east end. The locations where brown-headed cowbirds were detected during surveys is displayed in Figure 4.

The following CDFW species of special concern were observed within the survey area during LBV surveys: two-striped garter snake (*Thamnophis hammondi*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia brewsteri*) (State of California 2011). Locations of these species within the survey area are depicted in Figure 4. Field data collected during 2013 LBV surveys is presented in Appendix A; a list of all wildlife species detected is presented in Appendix B.

## **Discussion**

No LBV were detected during protocol surveys within the 34-acre survey area in 2013. The southern willow scrub habitat along the lake shore and at the east end of the lake is fairly young and immature. There is no characteristic overstory of large mature trees with a dense understory of willows and mulefat. Most of the habitat lacked dense vegetation of 3 feet in height, which is the average height of vegetation where LBV nest. Without a layer of dense vegetation around this height, there is limited nesting area. It appeared that as the lake level receded every few years, a new row of willows grew up around the edge of the lake. This created several rings of willows that grew as the lake level receded. Within the southern willow scrub, there is very little mulefat mixed in. There are a few tall willow trees along the stream that feeds into the lake; however, there is no dense understory around these willow trees. Despite the presence of southern willow scrub, the majority of habitat appears to lack the traits necessary to support nesting LBV. The habitat will become more suitable over the next few years as the habitat matures.

Ms. Susie Tharratt  
Recovery Permit Coordinator  
Carlsbad Fish and Wildlife Office  
October 4, 2013  
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If you have any questions or comments regarding this letter report, please contact me at (619) 233-1454.

Sincerely,



Andrew Fisher  
Wildlife Biologist

Attachments:     Figure 1 – Regional Map  
                      Figure 2 – Vicinity Map  
                      Figure 3 – Vegetation Map  
                      Figure 4 – Survey Results Map  
                      Appendix A – Field Data Collected during 2013 LBV Surveys  
                      Appendix B – Wildlife Species Detected during 2013 LBV Surveys

**Certification Statement**

“I certify that the information in this survey report and attached exhibits fully and accurately represents my work.”



Andrew Fisher  
Wildlife Biologist

Ms. Susie Tharratt  
Recovery Permit Coordinator  
Carlsbad Fish and Wildlife Office  
October 4, 2013  
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### Literature Cited

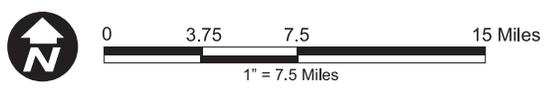
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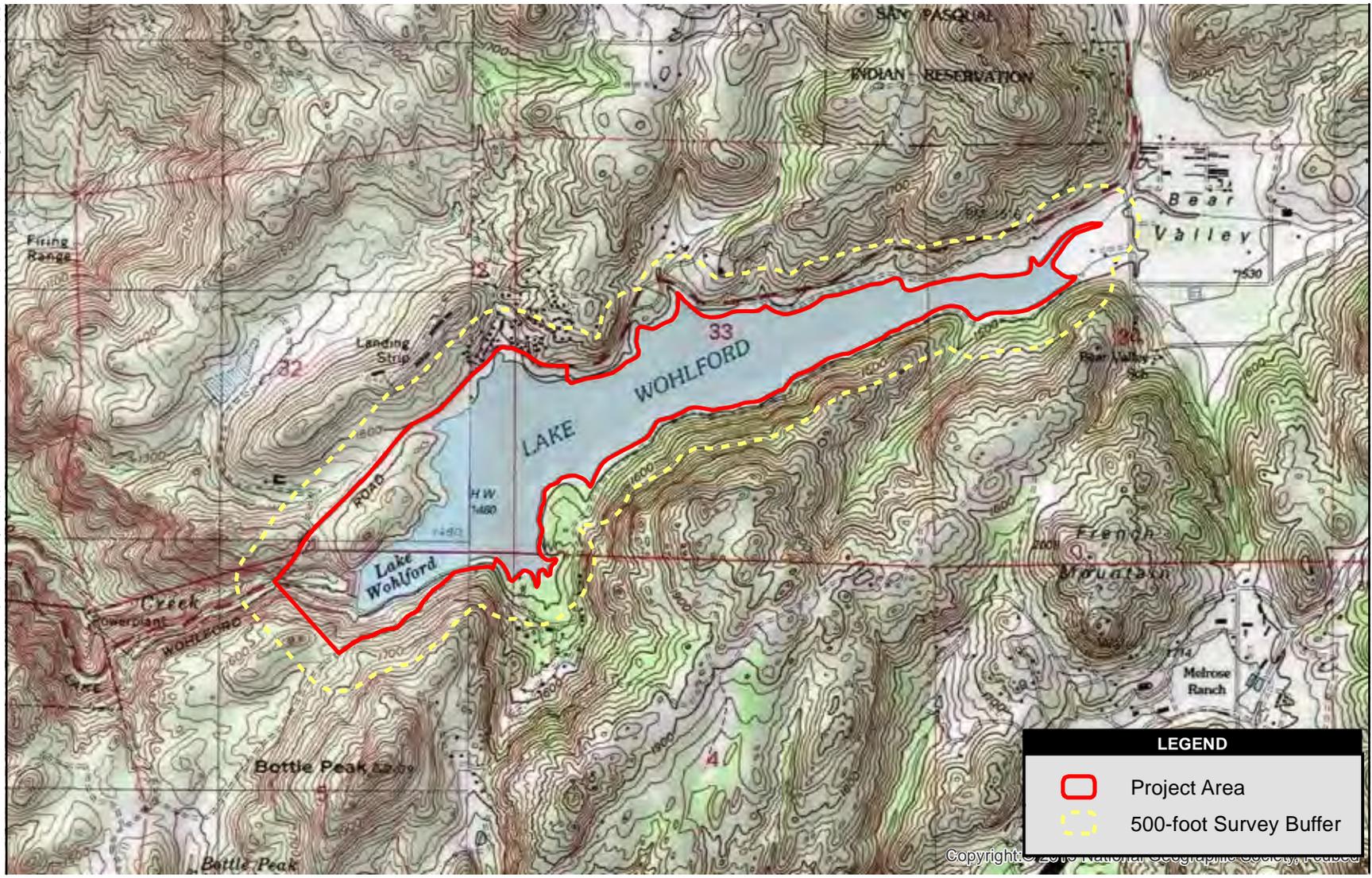
## FIGURES





**Figure 1**  
**Regional Map**

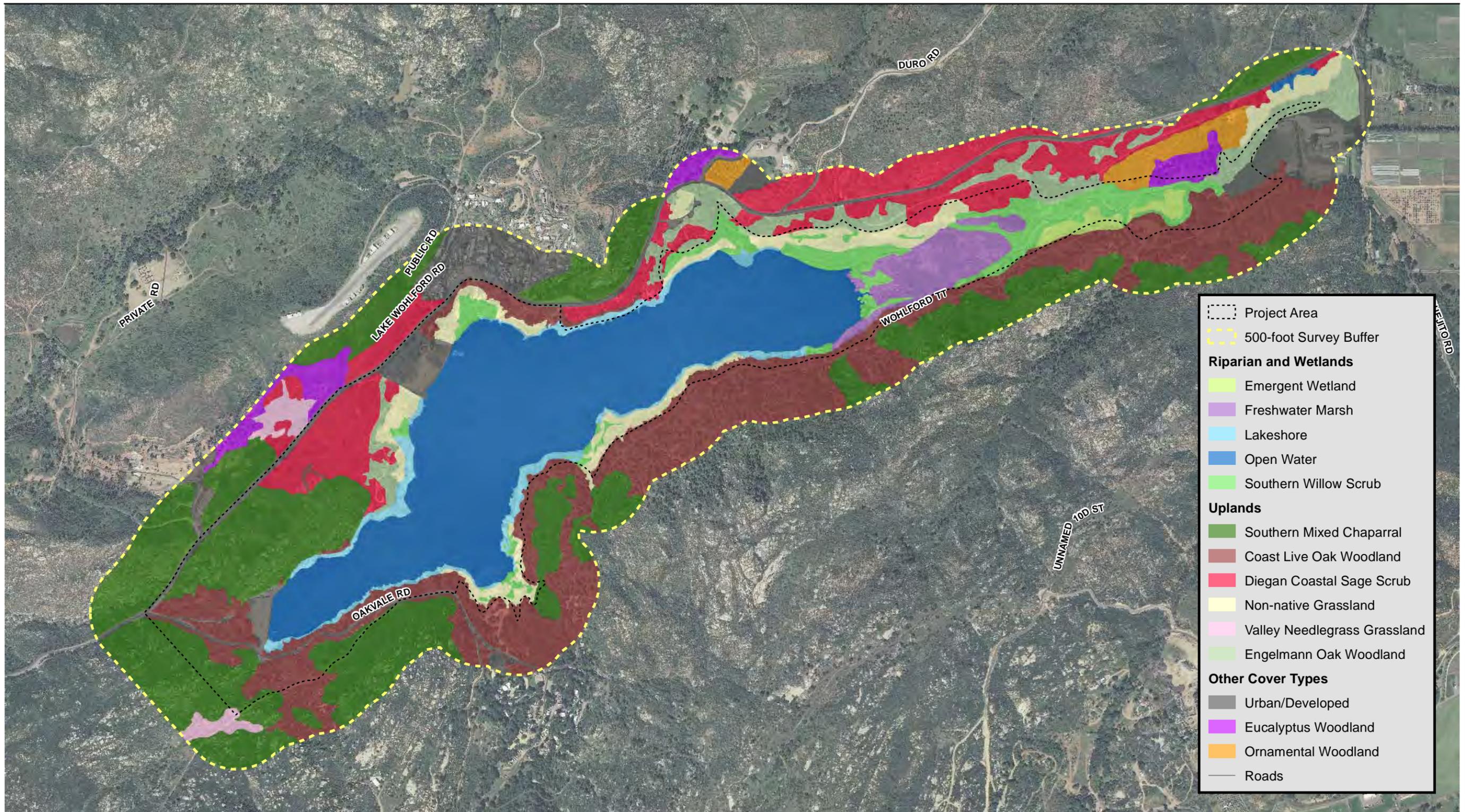




Source: USGS 7.5' Quad Valley Center 1975; USGS 7.5' Quad Rodriguez Mtn. 1988



**Figure 2**  
**Vicinity Map**



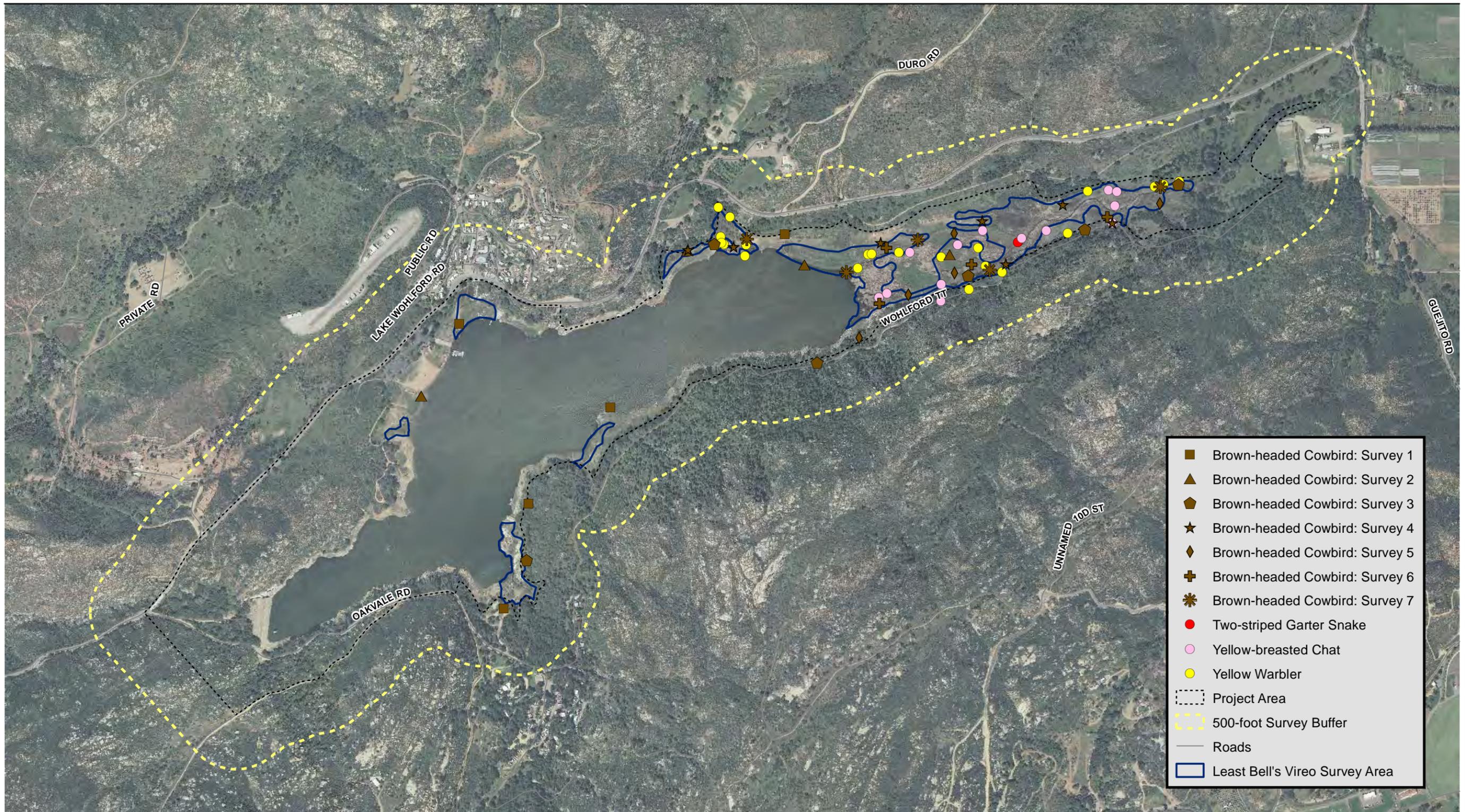
- Project Area
- 500-foot Survey Buffer
- Riparian and Wetlands**
- Emergent Wetland
- Freshwater Marsh
- Lakeshore
- Open Water
- Southern Willow Scrub
- Uplands**
- Southern Mixed Chaparral
- Coast Live Oak Woodland
- Diegan Coastal Sage Scrub
- Non-native Grassland
- Valley Needlegrass Grassland
- Engelmann Oak Woodland
- Other Cover Types**
- Urban/Developed
- Eucalyptus Woodland
- Ornamental Woodland
- Roads

Source: NAIP 2012

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

**Figure 3**  
**Vegetation Map**



- Brown-headed Cowbird: Survey 1
- ▲ Brown-headed Cowbird: Survey 2
- ⬠ Brown-headed Cowbird: Survey 3
- ★ Brown-headed Cowbird: Survey 4
- ◆ Brown-headed Cowbird: Survey 5
- ⊕ Brown-headed Cowbird: Survey 6
- ✱ Brown-headed Cowbird: Survey 7
- Two-striped Garter Snake
- Yellow-breasted Chat
- Yellow Warbler
- Project Area
- - - 500-foot Survey Buffer
- Roads
- ▭ Least Bell's Vireo Survey Area

Source: NAIP 2012  
 900 450 0 900 Feet  
 Scale: 1:10,800; 1 inch = 900 feet

**Figure 4**  
**Survey Results Map**

## **APPENDIX A**

### **FIELD DATA COLLECTED DURING 2013 LEAST BELL'S VIREO SURVEYS**



**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

Primary_Bio	Date	Survey_ Number	StartTime	StartTemp	StartCC	StartAvgWind_Spd	EndTime	EndTemp_F	EndCC	EndAvg Wind_Spd_mph	Notes	StartWind	EndWind_Dir
Andrew Fisher	4/22/2013	1	7:24:39 AM	59	100	0	11:00:00 AM	70	0	3	No LBV detected	N/A	W
Andrew Fisher	5/9/2013	2	7:52:16 AM	55	50	0	11:00:00 AM	68	85	2	No LBV detected	N/A	W
Andrew Fisher	5/23/2013	3	7:00:00 AM	56	10	0	10:51:00 AM	72	0	3	No LBVI, survey conducted concurrently with 1st SWFL survey.	N/A	W
Andrew Fisher	6/6/2013	4	6:29:53 AM	64	100	0	10:30:00 AM	78	0	2	No LBVI. The same birds on this survey were recorded on SWFL Survey 2 data form.	N/A	W
Andrew Fisher	6/18/2013	5	7:37:07 AM	63	0	0	10:17:00 AM	72	0	3	Wildlife list recorded on SWFL survey form since surveys were conducted concurrently.	N/A	W
Andrew Fisher	7/1/2013	6	7:28:58 AM	73	100	0	10:29:00 AM	78	80	3	No LBV, bird species recorded on SWFL survey form.	N/A	W
Andrew Fisher	7/11/2013	7	7:31:45 AM	67	100	0	10:32:00 AM	73	100	0	No LBV, bird species recorded on SWFL form.	N/A	N/A
Andrew Fisher	7/23/2013	8	7:01:00 AM	62	0	0	9:40:00 AM	73	0	2	No LBV detected, last survey	N/A	W

Primary_Bio	Survey_ Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	1	4/22/2013	8:10:36 AM	Bird	Hairy Woodpecker	Picoides villosus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	10:01:29 AM	Bird	Costa's hummingbird	Calypte costae	Apodiformes	Trochilidae	None	None	ABC_WLBCC-Watch List of Birds of Conservation Concern   IUCN_LC-Least Concern	No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	4/22/2013	9:56:07 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	4/22/2013	9:19:24 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	4/22/2013	8:32:29 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Female	1	Perching
Andrew Fisher	1	4/22/2013	8:31:00 AM	Bird	Brewer's Blackbird	Euphagus cyanocephalus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:30:55 AM	Bird	Great-tailed Grackle	Quiscalus mexicanus	Passeriformes	Icteridae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	1	4/22/2013	10:54:57 AM	Bird	Bullock's Oriole	Icterus bullockii	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:24:48 AM	Bird	double-crested cormorant	Phalacrocorax auritus	Suliformes	Phalacrocoracidae	None	None	DFG_WL-Watch List   IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	1	Roosting
Andrew Fisher	1	4/22/2013	10:43:04 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	4/22/2013	8:06:48 AM	Bird	Hutton's Vireo	Vireo huttoni	Passeriformes	Vireonidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:25:13 AM	Bird	House Wren	Troglodytes aedon	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:05:24 AM	Bird	Acorn Woodpecker	Melanerpes formicivorus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	11:06:56 AM	Terrestrial Mammal	California Ground Squirrel	Spermophilus beecheyi	Rodentia	Sciuridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	11:06:11 AM	Lizard	Granite Spiny Lizard	Sceloporus orcutti	Squamata	Phrynosomatidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	11:05:51 AM	Lizard	Western Fence Lizard	Sceloporus occidentalis	Squamata	Phrynosomatidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:30:48 AM	Bird	Western Bluebird	Sialia mexicana	Passeriformes	Turdidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:36:22 AM	Bird	Gadwall	Anas strepera	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:51:37 AM	Bird	Spotted Sandpiper	Actitis macularius	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:47:43 AM	Bird	great egret	Ardea alba	Pelecaniformes	Ardeidae	None	None	CDF_S-Sensitive   IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	2	Foraging
Andrew Fisher	1	4/22/2013	7:47:36 AM	Bird	Clark's Grebe	Aechmophorus clarkii	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:47:31 AM	Bird	Mallard	Anas platyrhynchos	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:45:37 AM	Bird	Red-winged Blackbird	Agelaius phoeniceus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:45:25 AM	Bird	Nuttall's Woodpecker	Picoides nuttallii	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	10:02:05 AM	Bird	Red-tailed Hawk	Buteo jamaicensis	Accipitriformes	Accipitridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:36:28 AM	Bird	American Coot	Fulica americana	Gruiformes	Rallidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	10:13:40 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	2	Calling
Andrew Fisher	1	4/22/2013	7:30:27 AM	Bird	Spotted Towhee	Pipilo maculatus	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:30:21 AM	Bird	Orange-crowned Warbler	Oreothlypis celata	Passeriformes	Parulidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	1	4/22/2013	7:28:31 AM	Bird	Mourning Dove	Zenaida macroura	Columbiformes	Columbidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:28:22 AM	Bird	Wrentit	Chamaea fasciata	Passeriformes	Sylviidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:28:16 AM	Bird	Song Sparrow	Melospiza melodia	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	11:07:13 AM	Terrestrial Mammal	Desert Cottontail	Sylvilagus audubonii	Lagomorpha	Leporidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:00:50 AM	Bird	Tree Swallow	Tachycineta bicolor	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:36:34 AM	Bird	Bewick's Wren	Thryomanes bewickii	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:36:43 AM	Bird	great blue heron	Ardea herodias	Pelecaniformes	Ardeidae	None	None	CDF_S-Sensitive   IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	1	
Andrew Fisher	1	4/22/2013	7:53:11 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Female	1	Calling
Andrew Fisher	1	4/22/2013	7:51:43 AM	Bird	black-crowned night heron	Nycticorax nycticorax	Pelecaniformes	Ardeidae	None	None	IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	1	Perching
Andrew Fisher	1	4/22/2013	7:45:19 AM	Bird	Turkey Vulture	Cathartes aura	Accipitriformes	Cathartidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	10:53:58 AM	Lizard	coastal whiptail	Aspidoscelis tigris stejnegeri	Lacertilia	Teiidae	None	None		Yes	Individual(s)	Adult	Unknown	1	
Andrew Fisher	1	4/22/2013	7:41:09 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	4/22/2013	8:05:29 AM	Bird	California Thrasher	Toxostoma redivivum	Passeriformes	Mimidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:18:19 AM	Bird	Black Phoebe	Sayornis nigricans	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:38:25 AM	Bird	Common Yellowthroat	Geothlypis trichas	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:45:13 AM	Bird	Red-shouldered Hawk	Buteo lineatus	Accipitriformes	Accipitridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:26:00 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	4/22/2013	7:25:54 AM	Bird	Lesser Goldfinch	Spinus psaltria	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:25:48 AM	Bird	Ash-throated Flycatcher	Myiarchus cinerascens	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:25:39 AM	Bird	American Crow	Corvus brachyrhynchos	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:25:34 AM	Bird	Downy Woodpecker	Picoides pubescens	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:25:27 AM	Bird	Oak Titmouse	Baeolophus inornatus	Passeriformes	Paridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:25:18 AM	Bird	Northern Flicker	Colaptes auratus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:38:31 AM	Bird	Bushtit	Psaltriparus minimus	Passeriformes	Aegithalidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	1	4/22/2013	10:50:10 AM	Bird	Killdeer	Charadrius vociferus	Charadriiformes	Charadriidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	10:52:38 AM	Butterfly or moth	Sara orangetip	Anthocharis sara sara	Lepidoptera	Pieridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	7:38:37 AM	Bird	Cliff Swallow	Petrochelidon pyrrhonota	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	10:50:17 AM	Bird	California Quail	Callipepla californica	Galliformes	Odontophoridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:18:24 AM	Bird	House Finch	Haemorhous mexicanus	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	9:50:21 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	4/22/2013	9:45:01 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Perching
Andrew Fisher	1	4/22/2013	9:44:53 AM	Bird	Black-chinned Hummingbird	Archilochus alexandri	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	9:24:27 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	4/22/2013	9:19:53 AM	Bird	Northern Mockingbird	Mimus polyglottos	Passeriformes	Mimidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:24:43 AM	Bird	Pied-billed Grebe	Podilymbus podiceps	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:24:38 AM	Bird	Yellow-rumped Warbler	Setophaga coronata	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:24:31 AM	Bird	Bullock's Oriole	Icterus bullockii	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:22:32 AM	Bird	European Starling	Sturnus vulgaris	Passeriformes	Sturnidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:22:26 AM	Bird	Anna's Hummingbird	Calypte anna	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	8:22:20 AM	Bird	Least Sandpiper	Calidris minutilla	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher	1	4/22/2013	9:19:59 AM	Bird	Wilson's Warbler	Cardellina pusilla	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:17:23 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Foraging
Andrew Fisher	2	5/9/2013	9:36:12 AM	Bird	Warbling Vireo	Vireo gilvus	Passeriformes	Vireonidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:20:41 AM	Bird	Black Phoebe	Sayornis nigricans	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:20:36 AM	Bird	Nuttall's Woodpecker	Picoides nuttallii	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:20:31 AM	Bird	Downy Woodpecker	Picoides pubescens	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:20:24 AM	Bird	Western Bluebird	Sialia mexicana	Passeriformes	Turdidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	2	5/9/2013	9:20:13 AM	Bird	Western Kingbird	Tyrannus verticalis	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:20:08 AM	Bird	Ash-throated Flycatcher	Myiarchus cinerascens	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:36:50 AM	Bird	Cliff Swallow	Petrochelidon pyrrhonota	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:19:57 AM	Bird	Townsend's Warbler	Setophaga townsendi	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:20:03 AM	Bird	Wilson's Warbler	Cardellina pusilla	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	10:30:24 AM	Bird	Black-headed Grosbeak	Pheucticus melanocephalus	Passeriformes	Cardinalidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:36:44 AM	Bird	Tree Swallow	Tachycineta bicolor	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:36:24 AM	Bird	Brewer's Blackbird	Euphagus cyanocephalus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	11:00:10 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	5/9/2013	10:49:49 AM	Snake	two-striped garter snake	Thamnophis hammondi	Serpentes	Natricidae	None	None	BLM_S-Sensitive   DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern   USFS_S-Sensitive	Yes	Individual(s)	Adult	Unknown	1	
Andrew Fisher	2	5/9/2013	10:42:34 AM	Bird	Western Scrub-Jay	Aphelocoma californica	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	10:42:09 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	2	5/9/2013	10:37:39 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	5/9/2013	10:30:28 AM	Bird	Bullock's Oriole	Icterus bullockii	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	10:29:52 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	5/9/2013	10:18:57 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	5/9/2013	10:16:50 AM	Bird	Hutton's Vireo	Vireo huttoni	Passeriformes	Vireonidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	10:16:23 AM	Bird	Canyon Wren	Catherpes mexicanus	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:51:00 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	1	Calling
Andrew Fisher	2	5/9/2013	10:34:44 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	2	5/9/2013	9:47:10 AM	Bird	Cedar Waxwing	Bombycilla cedrorum	Passeriformes	Bombycillidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	10:06:01 AM	Bird	American White Pelican	Pelecanus erythrorhynchos	Pelecaniformes	Pelecanidae				No	Individual(s)	Adult	Unknown	2	Perching
Andrew Fisher	2	5/9/2013	9:47:22 AM	Bird	American Coot	Fulica americana	Gruiformes	Rallidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:47:34 AM	Bird	American Goldfinch	Spinus tristis	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:47:17 AM	Bird	White-breasted Nuthatch	Sitta carolinensis	Passeriformes	Sittidae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	9:51:42 AM	Bird	Costa's hummingbird	Calypte costae	Apodiformes	Trochilidae	None	None	ABC_WLBCC-Watch List of Birds of Conservation Concern   IUCN_LC-Least Concern	No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	5/9/2013	9:55:06 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	5/9/2013	10:01:00 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	5/9/2013	10:01:44 AM	Bird	Oak Titmouse	Baeolophus inornatus	Passeriformes	Paridae				No	Individual(s)				
Andrew Fisher	2	5/9/2013	10:05:23 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	2	5/9/2013	9:47:28 AM	Bird	American Crow	Corvus brachyrhynchos	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	10:47:38 AM	Bird	Hutton's Vireo	Vireo huttoni	Passeriformes	Vireonidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	10:36:32 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	10:46:11 AM	Terrestrial Mammal	Mule Deer	Odocoileus hemionus	Artiodactyla	Cervidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	10:47:18 AM	Bird	Anna's Hummingbird	Calypte anna	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	10:46:51 AM	Butterfly or moth	Western tiger swallowtail	Papilio rutulus							Individual(s)				
Andrew Fisher	3	5/23/2013	10:45:46 AM	Terrestrial Mammal	California Ground Squirrel	Spermophilus beecheyi	Rodentia	Sciuridae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	10:45:21 AM	Terrestrial Mammal	Desert Cottontail	Sylvilagus audubonii	Lagomorpha	Leporidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	10:44:59 AM	Terrestrial Mammal	Coyote	Canis latrans	Carnivora	Canidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	3	5/23/2013	10:44:35 AM	Terrestrial Mammal	Striped Skunk	Mephitis mephitis	Carnivora	Mephitidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	10:44:19 AM	Terrestrial Mammal	Raccoon	Procyon lotor	Carnivora	Procyonidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	8:24:08 AM	Bird	American Kestrel	Falco sparverius	Falconiformes	Falconidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	8:39:41 AM	Butterfly or moth	Mourning cloak	Unk							Individual(s)				
Andrew Fisher	3	5/23/2013	10:49:23 AM	Bird	Northern Flicker	Colaptes auratus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	8:27:53 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	8:31:35 AM	Bird	great blue heron	Ardea herodias	Pelecaniformes	Ardeidae	None	None	CDF_S-Sensitive   IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	4	Foraging
Andrew Fisher	3	5/23/2013	8:37:53 AM	Bird	Western Scrub-Jay	Aphelocoma californica	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	8:38:03 AM	Butterfly or moth	Red admiral	Vanessa atalanta	Lepidoptera	Nymphalidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	8:38:19 AM	Butterfly or moth	Sara orangetip	Anthocharis sara sara	Lepidoptera	Pieridae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	8:38:53 AM	Bird	Orange-crowned Warbler	Oreothlypis celata	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	9:09:15 AM	Bird	Western Bluebird	Sialia mexicana	Passeriformes	Turdidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	9:09:26 AM	Bird	Brewer's Blackbird	Euphagus cyanocephalus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	9:22:58 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	3	5/23/2013	9:25:06 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	2	Calling
Andrew Fisher	3	5/23/2013	10:32:02 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	10:24:14 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Unknown	1	Carrying food to nest.
Andrew Fisher	3	5/23/2013	7:45:53 AM	Bird	Clark's Grebe	Aechmophorus clarkii	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	8:50:58 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	3	5/23/2013	9:46:02 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	7:28:39 AM	Bird	Lesser Goldfinch	Spinus psaltria	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:13:23 AM	Bird	Bewick's Wren	Thryomanes bewickii	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:13:29 AM	Bird	Black Phoebe	Sayornis nigricans	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:13:34 AM	Bird	Ash-throated Flycatcher	Myiarchus cinerascens	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:13:40 AM	Bird	Mallard	Anas platyrhynchos	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:23:42 AM	Bird	Turkey Vulture	Cathartes aura	Accipitriformes	Cathartidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:23:47 AM	Bird	Tree Swallow	Tachycineta bicolor	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:23:54 AM	Bird	House Wren	Troglodytes aedon	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:24:00 AM	Bird	Spotted Towhee	Pipilo maculatus	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:24:37 AM	Bird	Nuttall's Woodpecker	Picoides nuttallii	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:24:43 AM	Bird	Acorn Woodpecker	Melanerpes formicivorus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:46:11 AM	Butterfly or moth	Common buckeye	Junonia coenia	Lepidoptera	Nymphalidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:28:33 AM	Bird	Oak Titmouse	Baeolophus inornatus	Passeriformes	Paridae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	10:27:51 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	7:44:37 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	2	Calling
Andrew Fisher	3	5/23/2013	7:46:00 AM	Bird	Western Grebe	Aechmophorus occidentalis	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:48:50 AM	Bird	Red-winged Blackbird	Agelaius phoeniceus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:49:01 AM	Bird	White-breasted Nuthatch	Sitta carolinensis	Passeriformes	Sittidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:49:16 AM	Bird	Common Yellowthroat	Geothlypis trichas	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	3	5/23/2013	7:53:31 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	7:58:06 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Calling

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Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	3	5/23/2013	8:03:15 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	8:06:46 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	8:13:03 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	5/23/2013	8:22:47 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	2	Calling
Andrew Fisher	3	5/23/2013	9:54:37 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	2	Calling
Andrew Fisher	3	5/23/2013	7:24:48 AM	Bird	Song Sparrow	Melospiza melodia	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	4	6/6/2013	7:45:47 AM	Frog/Toad	Bullfrog	Rana catesbeiana	Anura	Ranidae				No	Individual(s)				
Andrew Fisher	4	6/6/2013	7:07:31 AM	Bird	black-crowned night heron	Nycticorax nycticorax	Pelecaniformes	Ardeidae	None	None	IUCN_LC-Least Concern	No	Individual(s)	Adult	Not Applicable	1	
Andrew Fisher	4	6/6/2013	8:59:50 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Flying
Andrew Fisher	4	6/6/2013	9:07:35 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	4	6/6/2013	9:08:08 AM	Bird	Blue Grosbeak	Passerina caerulea	Passeriformes	Cardinalidae				No	Individual(s)				
Andrew Fisher	4	6/6/2013	9:14:59 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	4	6/6/2013	9:28:13 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	4	6/6/2013	8:55:30 AM	Bird	Blue-gray Gnatcatcher	Poliophtila caerulea	Passeriformes	Poliophtilidae				No	Individual(s)				
Andrew Fisher	4	6/6/2013	8:31:42 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	3	Calling, several males calling in area.
Andrew Fisher	4	6/6/2013	7:40:13 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	4	6/6/2013	7:28:00 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	4	6/6/2013	7:27:34 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	4	6/6/2013	7:15:54 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	4	Calling

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 LBV SURVEYS**

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Andrew Fisher	4	6/6/2013	7:14:48 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	2	Calling, several males
Andrew Fisher	4	6/6/2013	7:08:19 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	4	6/6/2013	7:07:49 AM	Bird	Costa's hummingbird	Calypte costae	Apodiformes	Trochilidae	None	None	ABC_WLBCC-Watch List of Birds of Conservation Concern   IUCN_LC-Least Concern	No	Individual(s)	Subadult	Male	1	
Andrew Fisher	4	6/6/2013	9:32:47 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	5	6/18/2013	9:39:40 AM	Lizard	Granite Spiny Lizard	Sceloporus orcutti	Squamata	Phrynosomatidae				No	Individual(s)				
Andrew Fisher	5	6/18/2013	10:10:27 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	3	Calling
Andrew Fisher	5	6/18/2013	9:40:21 AM	Bird	Black-necked Stilt	Himantopus mexicanus	Charadriiformes	Recurvirostridae				No	Individual(s)				
Andrew Fisher	5	6/18/2013	9:39:28 AM	Butterfly or moth	Red admiral	Vanessa atalanta	Lepidoptera	Nymphalidae				No	Individual(s)				
Andrew Fisher	5	6/18/2013	8:34:57 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	6	Flying
Andrew Fisher	5	6/18/2013	8:09:30 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	5	6/18/2013	7:37:58 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	5	6/18/2013	9:44:07 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	6	7/1/2013	9:28:31 AM	Butterfly or moth	Acmon blue	Icaricia acmon acmon	Lepidoptera	Lycaenidae				No	Individual(s)				
Andrew Fisher	6	7/1/2013	7:51:15 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	6	7/1/2013	7:52:00 AM	Terrestrial Mammal	Virginia Opossum	Didelphis virginiana	Didelphimorphia	Didelphidae				No	Individual(s)				
Andrew Fisher	6	7/1/2013	8:13:36 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	6	7/1/2013	8:14:56 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	1	
Andrew Fisher	6	7/1/2013	9:28:40 AM	Butterfly or moth	Common white	Unk							Individual(s)				
Andrew Fisher	6	7/1/2013	9:29:09 AM	Butterfly or moth	Great copper	Unk							Individual(s)				
Andrew Fisher	6	7/1/2013	9:29:24 AM	Butterfly or moth	Red admiral	Vanessa atalanta	Lepidoptera	Nymphalidae				No	Individual(s)				
Andrew Fisher	6	7/1/2013	9:31:17 AM	Lizard	coastal whiptail	Aspidoscelis tigris stejnegeri	Lacertilia	Teiidae	None	None		Yes	Individual(s)	Adult	Unknown	1	

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Primary_Bio	Survey_Number	Date	Time	Species_Ty	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	6	7/1/2013	9:36:14 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	2	Calling
Andrew Fisher	6	7/1/2013	9:44:23 AM	Butterfly or moth	Spring (California) white	Pontia sisymbrii	Lepidoptera	Pieridae				No	Individual(s)				
Andrew Fisher	6	7/1/2013	10:11:46 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	1	Calling
Andrew Fisher	6	7/1/2013	8:33:14 AM	Turtle/Tortoise	Slider	Trachemys scripta	Testudines	Emydidae				No	Individual(s)				
Andrew Fisher	6	7/1/2013	9:27:34 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	7	7/11/2013	9:42:17 AM	Bird	Bullock's Oriole	Icterus bullockii	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:36:50 AM	Bird	Black-headed Grosbeak	Pheucticus melanocephalus	Passeriformes	Cardinalidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:37:04 AM	Bird	Lesser Goldfinch	Spinus psaltria	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:37:09 AM	Bird	Acorn Woodpecker	Melanerpes formicivorus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:37:13 AM	Bird	Brewer's Blackbird	Euphagus cyanocephalus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:37:19 AM	Bird	Red-winged Blackbird	Agelaius phoeniceus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:36:38 AM	Bird	California Quail	Callipepla californica	Galliformes	Odontophoridae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:41:46 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	1	Calling
Andrew Fisher	7	7/11/2013	9:00:43 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	
Andrew Fisher	7	7/11/2013	9:43:09 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	7	7/11/2013	9:37:24 AM	Bird	Bushtit	Psaltriparus minimus	Passeriformes	Aegithalidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:36:15 AM	Butterfly or moth	Spring (California) white	Pontia sisymbrii	Lepidoptera	Pieridae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:36:01 AM	Bird	American Crow	Corvus brachyrhynchos	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:35:56 AM	Bird	Ash-throated Flycatcher	Myiarchus cinerascens	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:03:29 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	

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Andrew Fisher	7	7/11/2013	8:57:10 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	2	
Andrew Fisher	7	7/11/2013	8:47:36 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Female	1	
Andrew Fisher	7	7/11/2013	8:47:29 AM	Bird	Western Sandpiper	Calidris mauri	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	8:47:22 AM	Bird	Least Sandpiper	Calidris minutilla	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	8:09:15 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	
Andrew Fisher	7	7/11/2013	9:43:38 AM	Bird	Northern Flicker	Colaptes auratus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	7	7/11/2013	9:08:42 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	2	
Andrew Fisher	8	7/23/2013	9:45:51 AM	Butterfly or moth	Marine Blue	Leptotes marina	Lepidoptera	Lycaenidae				No	Individual(s)				

## **APPENDIX B**

### **WILDLIFE SPECIES DETECTED DURING 2013 LEAST BELL'S VIREO SURVEYS**



## APPENDIX B – WILDLIFE SPECIES DETECTED DURING 2013 LBV SURVEYS

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
<b>Invertebrates</b>					
acmon blue	<i>Icaricia acmon acmon</i>	Lepidoptera	Lycaenidae	None	None
western tiger swallowtail	<i>Papilio rutulus</i>	Lepidoptera	Papilionidae	None	None
marine blue	<i>Leptotes marina</i>	Lepidoptera	Lycaenidae	None	None
common buckeye	<i>Junonia coenia</i>	Lepidoptera	Nymphalidae	None	None
red admiral	<i>Vanessa atalanta</i>	Lepidoptera	Nymphalidae	None	None
Sara orangetip	<i>Anthocharis sara sara</i>	Lepidoptera	Pieridae	None	None
spring (California) white	<i>Pontia sisymbrii</i>	Lepidoptera	Pieridae	None	None
<b>Reptiles &amp; Amphibians</b>					
bullfrog	<i>Rana catesbeiana</i>	Anura	Ranidae	None	None
coastal whiptail	<i>Aspidoscelis tigris stejnegeri</i>	Lacertilia	Teiidae	None	None
western fence lizard	<i>Sceloporus occidentalis</i>	Squamata	Phrynosomatidae	None	None
granite spiny lizard	<i>Sceloporus orcutti</i>	Squamata	Phrynosomatidae	None	None
two-striped garter snake	<i>Thamnophis hammondi</i>	Serpentes	Natricidae	None	Species of Special Concern
red-necked slider	<i>Trachemys scripta</i>	Testudines	Emydidae	None	None
<b>Avian</b>					
red-tailed hawk	<i>Buteo jamaicensis</i>	Accipitriformes	Accipitridae	None	None
red-shouldered hawk	<i>Buteo lineatus</i>	Accipitriformes	Accipitridae	None	None
turkey vulture	<i>Cathartes aura</i>	Accipitriformes	Cathartidae	None	None
mallard	<i>Anas platyrhynchos</i>	Anseriformes	Anatidae	None	None
gadwall	<i>Anas strepera</i>	Anseriformes	Anatidae	None	None
black-chinned hummingbird	<i>Archilochus alexandri</i>	Apodiformes	Trochilidae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
Anna's hummingbird	<i>Calypte anna</i>	Apodiformes	Trochilidae	None	None
Costa's hummingbird	<i>Calypte costae</i>	Apodiformes	Trochilidae	None	None
killdeer	<i>Charadrius vociferus</i>	Charadriiformes	Charadriidae	None	None
black-necked stilt	<i>Himantopus mexicanus</i>	Charadriiformes	Recurvirostridae	None	None
spotted sandpiper	<i>Actitis macularius</i>	Charadriiformes	Scolopacidae	None	None
western sandpiper	<i>Calidris mauri</i>	Charadriiformes	Scolopacidae	None	None
least sandpiper	<i>Calidris minutilla</i>	Charadriiformes	Scolopacidae	None	None
mourning dove	<i>Zenaidura macroura</i>	Columbiformes	Columbidae	None	None
American kestrel	<i>Falco sparverius</i>	Falconiformes	Falconidae	None	None
California quail	<i>Callipepla californica</i>	Galliformes	Odontophoridae	None	None
American coot	<i>Fulica americana</i>	Gruiformes	Rallidae	None	None
bush-tit	<i>Psaltriparus minimus</i>	Passeriformes	Aegithalidae	None	None
cedar waxwing	<i>Bombycilla cedrorum</i>	Passeriformes	Bombycillidae	None	None
blue grosbeak	<i>Passerina caerulea</i>	Passeriformes	Cardinalidae	None	None
black-headed grosbeak	<i>Pheucticus melanocephalus</i>	Passeriformes	Cardinalidae	None	None
western scrub-jay	<i>Aphelocoma californica</i>	Passeriformes	Corvidae	None	None
American crow	<i>Corvus brachyrhynchos</i>	Passeriformes	Corvidae	None	None
song sparrow	<i>Melospiza melodia</i>	Passeriformes	Emberizidae	None	None
spotted towhee	<i>Pipilo maculatus</i>	Passeriformes	Emberizidae	None	None
house finch	<i>Haemorhous mexicanus</i>	Passeriformes	Fringillidae	None	None
lesser goldfinch	<i>Spinus psaltria</i>	Passeriformes	Fringillidae	None	None
American goldfinch	<i>Spinus tristis</i>	Passeriformes	Fringillidae	None	None
cliff swallow	<i>Petrochelidon pyrrhonota</i>	Passeriformes	Hirundinidae	None	None
tree swallow	<i>Tachycineta bicolor</i>	Passeriformes	Hirundinidae	None	None
red-winged blackbird	<i>Agelaius phoeniceus</i>	Passeriformes	Icteridae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Passeriformes	Icteridae	None	None
Bullock's oriole	<i>Icterus bullockii</i>	Passeriformes	Icteridae	None	None
brown-headed cowbird	<i>Molothrus ater</i>	Passeriformes	Icteridae	None	None
great-tailed grackle	<i>Quiscalus mexicanus</i>	Passeriformes	Icteridae	None	None
northern mockingbird	<i>Mimus polyglottos</i>	Passeriformes	Mimidae	None	None
California thrasher	<i>Toxostoma redivivum</i>	Passeriformes	Mimidae	None	None
oak titmouse	<i>Baeolophus inornatus</i>	Passeriformes	Paridae	None	None
Wilson's warbler	<i>Cardellina pusilla</i>	Passeriformes	Parulidae	None	None
common yellowthroat	<i>Geothlypis trichas</i>	Passeriformes	Parulidae	None	None
yellow-breasted chat	<i>Icteria virens</i>	Passeriformes	Parulidae	None	Species of Special Concern
orange-crowned warbler	<i>Oreothlypis celata</i>	Passeriformes	Parulidae	None	None
yellow-rumped warbler	<i>Setophaga coronata</i>	Passeriformes	Parulidae	None	None
yellow warbler	<i>Setophaga petechia brewsteri</i>	Passeriformes	Parulidae	None	Species of Special Concern
Townsend's warbler	<i>Setophaga townsendi</i>	Passeriformes	Parulidae	None	None
blue-gray gnatcatcher	<i>Polioptila caerulea</i>	Passeriformes	Polioptilidae	None	None
white-breasted nuthatch	<i>Sitta carolinensis</i>	Passeriformes	Sittidae	None	None
European starling	<i>Sturnus vulgaris</i>	Passeriformes	Sturnidae	None	None
wren	<i>Chamaea fasciata</i>	Passeriformes	Sylviidae	None	None
canyon wren	<i>Catherpes mexicanus</i>	Passeriformes	Troglodytidae	None	None
Bewick's wren	<i>Thryomanes bewickii</i>	Passeriformes	Troglodytidae	None	None
house wren	<i>Troglodytes aedon</i>	Passeriformes	Troglodytidae	None	None
western bluebird	<i>Sialia mexicana</i>	Passeriformes	Turdidae	None	None
ash-throated flycatcher	<i>Myiarchus cinerascens</i>	Passeriformes	Tyrannidae	None	None
black phoebe	<i>Sayornis nigricans</i>	Passeriformes	Tyrannidae	None	None
western kingbird	<i>Tyrannus verticalis</i>	Passeriformes	Tyrannidae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
warbling vireo	<i>Vireo gilvus</i>	Passeriformes	Vireonidae	None	None
Hutton's vireo	<i>Vireo huttoni</i>	Passeriformes	Vireonidae	None	None
great egret	<i>Ardea alba</i>	Pelecaniformes	Ardeidae	None	None
great blue heron	<i>Ardea herodias</i>	Pelecaniformes	Ardeidae	None	None
black-crowned night heron	<i>Nycticorax nycticorax</i>	Pelecaniformes	Ardeidae	None	None
American white pelican	<i>Pelecanus erythrorhynchos</i>	Pelecaniformes	Pelecanidae	None	None
northern flicker	<i>Colaptes auratus</i>	Piciformes	Picidae	None	None
acorn woodpecker	<i>Melanerpes formicivorus</i>	Piciformes	Picidae	None	None
Nuttall's woodpecker	<i>Picoides nuttallii</i>	Piciformes	Picidae	None	None
downy woodpecker	<i>Picoides pubescens</i>	Piciformes	Picidae	None	None
hairy woodpecker	<i>Picoides villosus</i>	Piciformes	Picidae	None	None
Clark's grebe	<i>Aechmophorus clarkii</i>	Podicipediformes	Podicipedidae	None	None
western grebe	<i>Aechmophorus occidentalis</i>	Podicipediformes	Podicipedidae	None	None
pied-billed grebe	<i>Podilymbus podiceps</i>	Podicipediformes	Podicipedidae	None	None
double-crested cormorant	<i>Phalacrocorax auritus</i>	Suliformes	Phalacrocoracidae	None	None
<b>Mammals</b>					
mule deer	<i>Odocoileus hemionus</i>	Artiodactyla	Cervidae	None	None
coyote	<i>Canis latrans</i>	Carnivora	Canidae	None	None
striped skunk	<i>Mephitis mephitis</i>	Carnivora	Mephitidae	None	None
raccoon	<i>Procyon lotor</i>	Carnivora	Procyonidae	None	None
Virginia opossum	<i>Didelphis virginiana</i>	Didelphimorphia	Didelphidae	None	None
desert cottontail	<i>Sylvilagus audubonii</i>	Lagomorpha	Leporidae	None	None
California ground squirrel	<i>Spermophilus beecheyi</i>	Rodentia	Sciuridae	None	None

\* Sensitivity status taken from State of California 2011.

**APPENDIX C**

**45-DAY REPORT FOR SOUTHWESTERN  
WILLOW FLYCATCHER**





AECOM  
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October 4, 2013

Ms. Susie Tharratt  
Recovery Permit Coordinator  
Carlsbad Fish and Wildlife Office  
2177 Salk Avenue, Suite 250  
Carlsbad, California 92008

**RE: 2013 Lake Wohlford Dam Replacement Project Southwestern Willow  
Flycatcher 45-Day Summary Report, San Diego County, California**

Dear Ms. Tharratt:

In compliance with the Special Terms and Conditions for Endangered and Threatened Wildlife Species Permit TE-820658, AECOM submits this letter report summarizing the results of focused surveys conducted in 2013 to determine the presence or absence of the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*) (SWFL) for the Lake Wohlford Dam Replacement Project (project) within the City of Escondido (City), San Diego County, California. Surveys were conducted under contract with the City.

**Project Description**

The City is planning to construct a replacement dam immediately downstream (west) of the existing dam and partially deconstruct the existing dam. Replacing the dam requires replacement or modification of the existing dam's outlet tower and associated pipes beneath the dam. To accommodate the replacement dam's configuration, the project also entails realignment of the portion of Oakvale Road that passes the southern dam abutment. This portion of the road will be realigned south of its current location, requiring excavation into the adjacent hillside. The intent of the project, in addition to improving the dam's seismic safety, is to return the reservoir to its previous height and regain the lost water storage capability and capacity. No changes to the 1,480-foot spillway crest elevation of the existing dam are proposed. Therefore, no changes to the historic high water level of Lake Wohlford are proposed.

**Site Description**

The proposed project is located approximately 7 miles east of Interstate 15 and 2 miles east of Valley Center Road. The project area is in unincorporated San Diego County, on land that is owned by the City (Figures 1 and 2). Most of the topography within the project area is granitic hills that gently slope toward Lake Wohlford. The surface of the lake has an average elevation of 1,480 feet above mean sea level. The main vegetation communities documented within the project area are coast live oak woodland, southern mixed chaparral, Diegan coastal sage scrub, southern willow scrub, wetlands, woodlands, various types of grasslands, and urban/developed (Figure 3). The majority of the riparian vegetation is located along the lake edge and within a few small drainages the feed into the lake. The primary source of water comes into the lake from the east. The east end of the lake has a gently westward-sloping sandy floodplain where the main river that feeds the lake meanders west before emptying into the lake. The majority of the riparian, wetland, and

Ms. Susie Tharratt  
Recovery Permit Coordinator  
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freshwater marsh occurs at the east end of the lake. The lake is surrounded by a few residential areas to the north and southeast, with the remaining area left as undeveloped natural habitat.

The proposed project is located within both the County of San Diego North County Multiple Species Conservation Program (NCMSCP) and the Multiple Habitat Conservation Program (MHCP) planning areas (County of San Diego 2009).

### **Background Information**

SWFL, a subspecies of willow flycatcher (*Empidonax traillii*), was listed by the California Department of Fish and Game (CDFG) (now the California Department of Fish and Wildlife [CDFW]) as endangered in California in 1991 (CDFG 1991) as part of the state endangered listing of the full species (willow flycatcher). SWFL was federally listed as endangered in 1995 (USFWS 1995). This subspecies can only be separated from other willow flycatcher subspecies in the field geographically by breeding range. SWFL breeds in New Mexico, Arizona, Southern California, Nevada, Utah, and possibly west Texas (Rourke et al. 1999). According to Unitt (2004), fewer than 90 pairs breed in San Diego County. In 2005, the U.S. Fish and Wildlife Service (USFWS) issued the final ruling to designate critical habitat for SWFL, which includes portions of San Diego County (USFWS 2005). There is no critical habitat for SWFL within the project area or immediate vicinity. The closest critical habitat is located approximately 6.5 miles to the east of the project area within Pamo Valley in Ramona.

The primary factor responsible for the decline of SWFL is habitat loss, exacerbated by nest predation and brood parasitism by brown-headed cowbird (*Molothrus ater*) (Rourke et al. 1999). SWFL is a neotropical migrant that breeds in riparian forests with a distinct vegetation structure: a dense understory where nests are built, a moderately closed canopy, and an open foraging area at midstory. SWFL breeding habitat is also characterized by actively changing hydrology, frequently including standing water, but also dry areas that have flooded within the past few years and retain the appropriate vegetation structure. In California, less than 5% of appropriate riparian habitat remains from when California achieved statehood in 1850 (Kus 2003).

SWFL begins arriving on breeding territories in San Diego County in early May, but the northern subspecies (*E. t. brewsteri*) may migrate through southern breeding areas through mid-June. Both male and female migrant willow flycatchers frequently sing, and determining whether an individual is a resident (SWFL) or a migrant (willow flycatcher) cannot be accomplished from a single detection. Therefore, a survey protocol for SWFL has been adopted by USFWS (Sogge et al. 2010).

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Recovery Permit Coordinator  
October 4, 2013  
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Historically, there are no recorded SWFL from Lake Wohlford, and the closest known location is approximately 7.8 miles away at the eastern end of Lake Hodges, Escondido (CNDDDB 2013).

### **Survey Methodology**

The SWFL survey area includes all potentially suitable habitat within the project area, plus an adjacent 500-foot survey buffer. Before surveys, AECOM biologists conducted a habitat assessment within the survey area to outline potentially suitable SWFL habitat. This habitat was then digitized onto maps to establish a SWFL survey area of approximately 20 acres (Figure 4). Potentially suitable SWFL habitat included southern willow scrub and oak woodland with standing water or a small stream flowing through. The majority of the SWFL survey area is located on the north and east sides of the lake, with a small section at the west side of the lake right below the existing dam. All areas of potential SWFL habitat contained some of the traits that could support SWFL, including the presence of water (usually as a small stream), an overstory of mature willows or oaks, and a semi-open understory with nearby dense vegetation such as willows, stinging nettle (*Urtica dioica*), poison oak (*Toxicodendron diversilobum*), or other shrub-like vegetation.

AECOM biologist Andrew Fisher conducted protocol SWFL surveys under Endangered Species Permit TE-820658-6. Surveys followed the current survey protocol adopted by USFWS (Sogge et al. 2010) and were conducted from May 23 through July 11, 2013. The SWFL survey area depicted in Figure 4 was surveyed once during the first survey period (May 15 through May 31), twice during the second survey period (June 1 through June 24), and twice during the third survey period (June 25 through July 17). Surveys were conducted at least 5 days apart between dawn and 11 a.m. The biologist walked through suitable habitat, stopping frequently to listen. After a few minutes of passive listening, if no SWFL were heard, a playback recording of SWFL calls was played (active surveys) to elicit a response from SWFL within or adjacent to the property. This survey activity “takes” SWFL through harassment with playback of recorded SWFL vocalizations. No individual SWFL were captured.

### **Results**

No willow flycatcher or SWFL were detected. Table 1 details each survey, including the survey period and number, date, permitted biologist, time, and weather conditions. During surveys, temperature ranged from 56 to 78 degrees Fahrenheit, and wind speed ranged from 0 to 3 miles per hour.

Ms. Susie Tharratt  
 Recovery Permit Coordinator  
 October 4, 2013  
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**Table 1. Survey Dates, Personnel, and Weather Conditions**

Survey Period	Survey Number	Date	Permitted Biologist	Time	Weather Conditions (mph = miles per hour)
1	1	5/23/2013	Andrew Fisher	0700–1000	Start: 56°F, wind 0 mph, 10% cover End: 70°F, wind 3 mph, 0% cover
2	2	6/6/2013	Andrew Fisher	0631–0933	Start: 64°F, wind 0 mph, 100% cover End: 72°F, wind 2 mph, 50% cover
	3	6/18/2013	Andrew Fisher	0737–1010	Start: 63°F, wind 0 mph, 0% cover End: 72°F, wind 3 mph, 0% cover
3	4	7/1/2013	Andrew Fisher	0729–1000	Start: 73°F, wind 0 mph, 100% cover End: 78°F, wind 3 mph, 80% cover
	5	7/11/2013	Andrew Fisher	0732–1000	Start: 67°F, wind 0 mph, 100% cover End: 73°F, wind 0 mph, 100% cover

During the surveys, several brown-headed cowbirds were detected flying, foraging, calling, and perching. Table 2 details the survey date and observation information for all brown-headed cowbirds detected during SWFL surveys.

**Table 2. Brown-Headed Cowbird Detections**

Survey Number	Date	Observation Type
1	5/23/2013	5 males, 1 female
2	6/6/2013	5 males, 4 females
3	6/18/2013	5 males, 6 females
4	7/1/2013	1 unknown individual
5	7/11/2013	2 males, 2 females
Total		31

On average, six brown-headed cowbirds (known willow flycatcher/SWFL brood parasites) were detected per survey. They were usually seen perched near the east end of the lake or flying overhead toward the east end. The locations where brown-headed cowbirds were detected during surveys is displayed in Figure 4.

The following CDFW species of special concern were observed within the survey area during SWFL surveys: two-striped garter snake (*Thamnophis hammondi*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia brewsteri*) (State of California 2011). Locations of these species are depicted in Figure 4. Field data collected during 2013 SWFL surveys is presented in Appendix A, and a list of all wildlife species detected is presented in Appendix B.

Ms. Susie Tharratt  
Recovery Permit Coordinator  
October 4, 2013  
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**Discussion**

No SWFL were detected during protocol surveys within the 20-acre survey area in 2013. The southern willow scrub habitat along the lake shore and at the east end of the lake is fairly young and immature. There are a few patches with a dense overstory of trees but with little understory of willows and mulefat. It appeared that as the lake levels receded every few years, a new row of willows grew up around the edge of the lake. This created several rings of willows that grew as the lake levels receded. Within the southern willow scrub, there is very little mulefat mixed in. Generally, the habitat is not mature enough to support breeding SWFL. There are a few tall willow trees along the stream that feeds into the lake, but there is no dense understory around these willow trees. There is a small patch of potential SWFL habitat directly below the existing dam where a small stream flows out that is surrounded by mature oak trees, but the amount of habitat is too small and isolated to support breeding SWFL. Generally, the habitat at the east end of the lake will become more suitable over the next few years as the vegetation matures.

If you have any questions or comments regarding this letter report, please contact me at (619) 233-1454.

Sincerely,



Andrew Fisher  
Wildlife Biologist

Attachments:    Figure 1 – Regional Map  
                      Figure 2 – Vicinity Map  
                      Figure 3 – Vegetation Map  
                      Figure 4 – Survey Results Map  
                      Appendix A – Field Data Collected during 2013 SWFL Surveys  
                      Appendix B – Wildlife Species Detected during 2013 SWFL Surveys

**Certification Statement**

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."



Andrew Fisher  
Wildlife Biologist  
TE-820658-6

Ms. Susie Tharratt  
Recovery Permit Coordinator  
October 4, 2013  
Page 6

**Literature Cited**

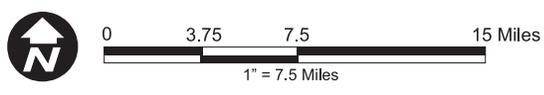
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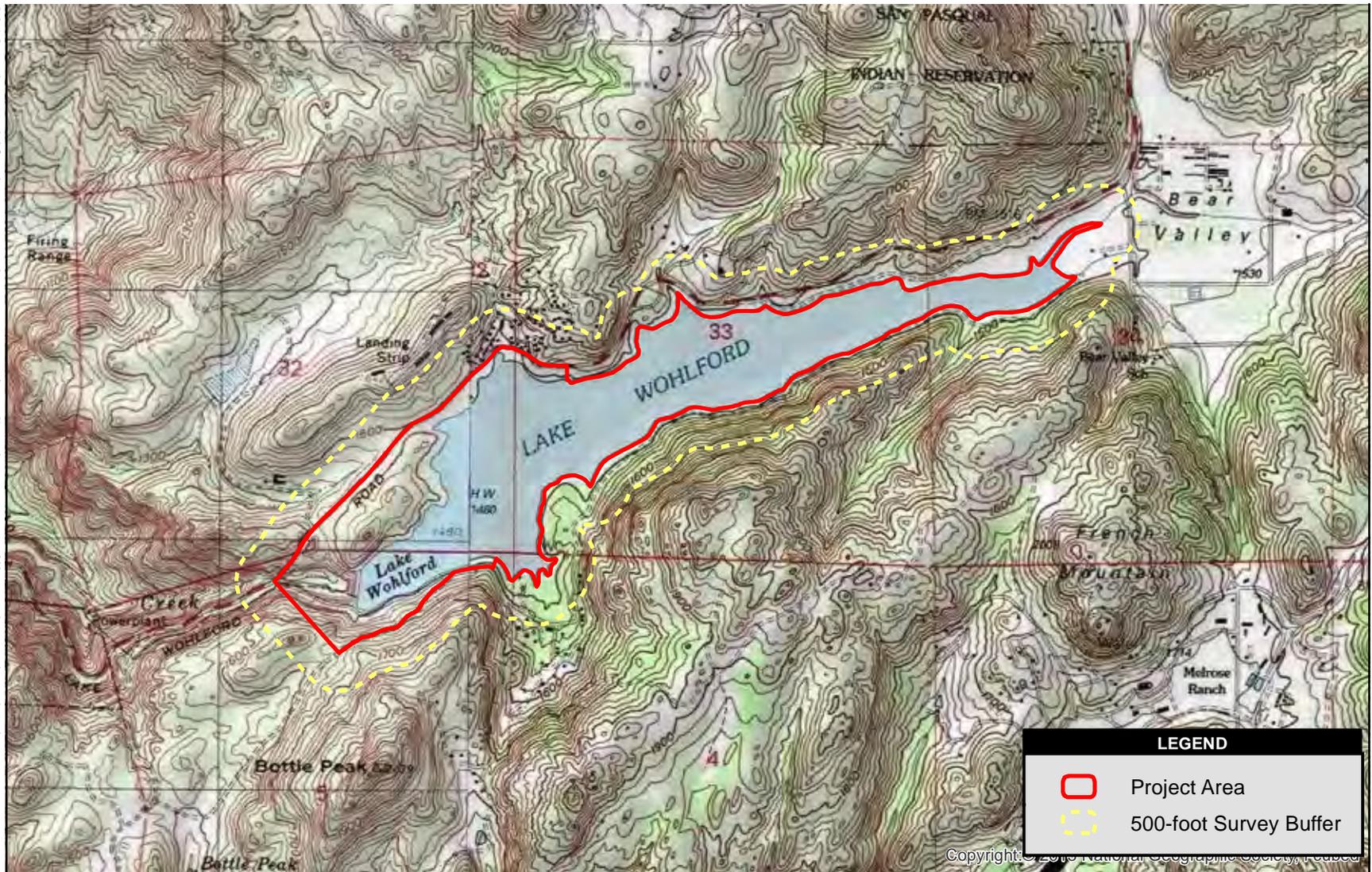
## FIGURES





**Figure 1**  
**Regional Map**

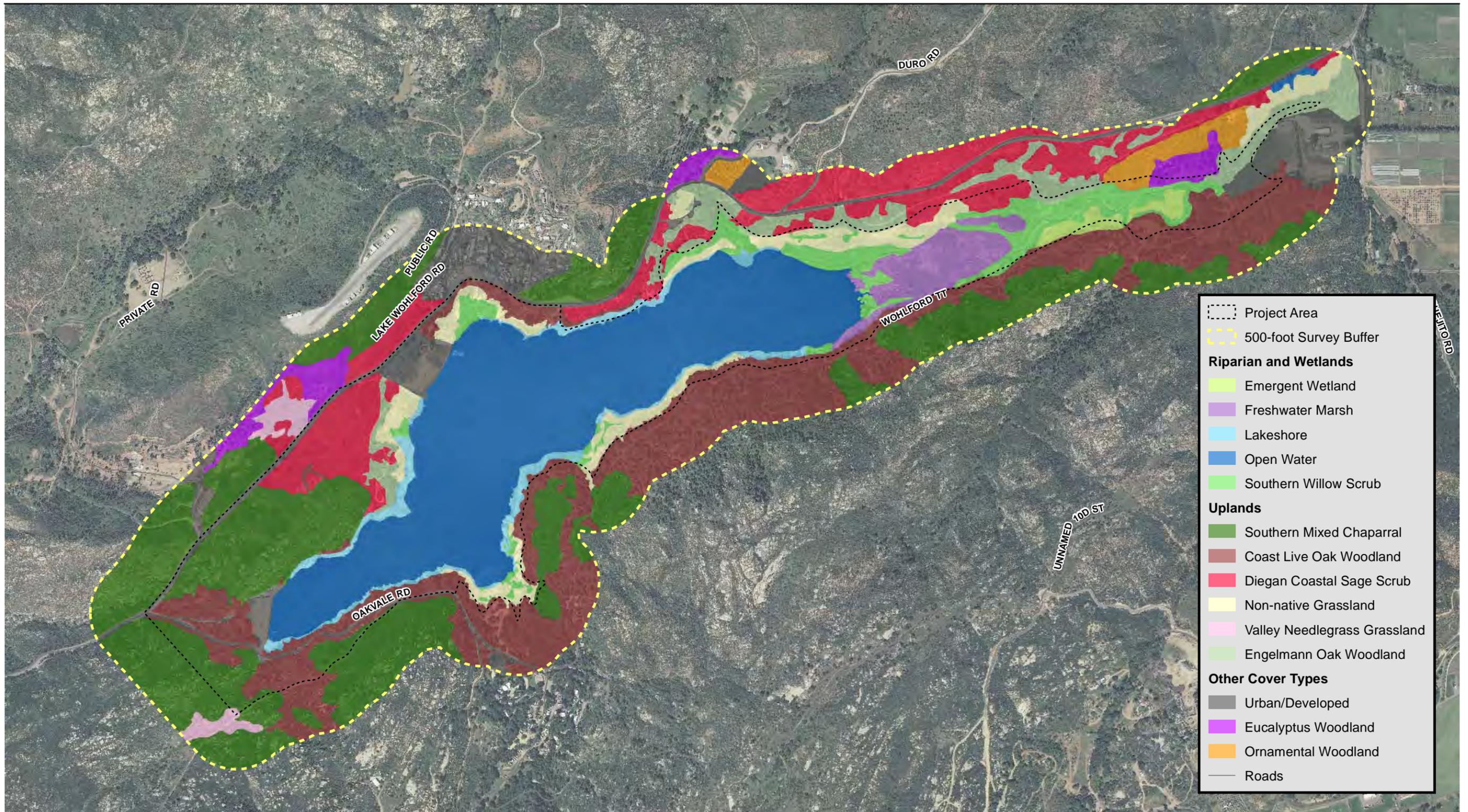




Source: USGS 7.5' Quad Valley Center 1975; USGS 7.5' Quad Rodriguez Mtn. 1988

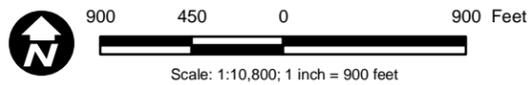


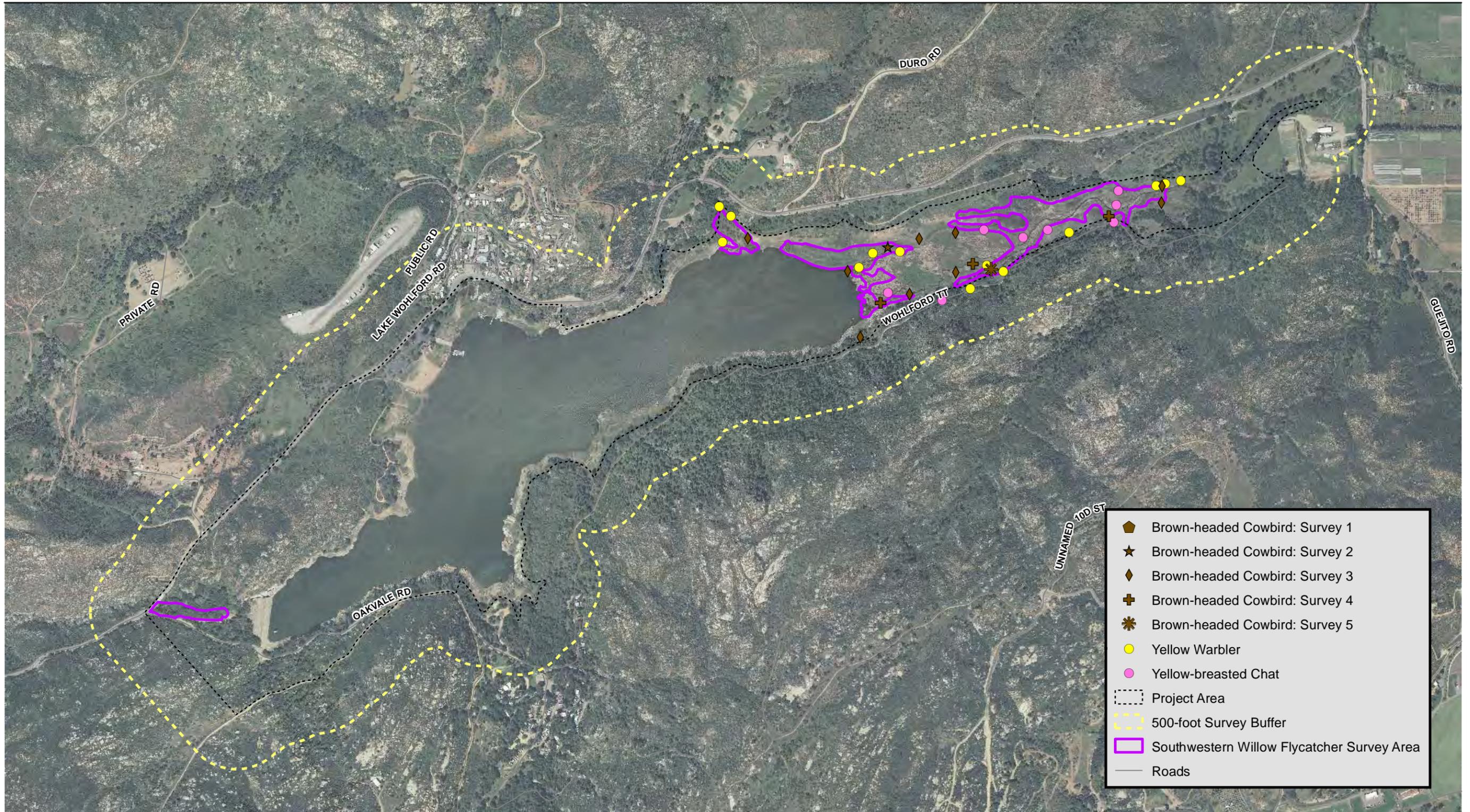
**Figure 2**  
**Vicinity Map**



**Figure 3**  
**Vegetation Map**

Source: NAIP 2012





- ◆ Brown-headed Cowbird: Survey 1
- ★ Brown-headed Cowbird: Survey 2
- ◆ Brown-headed Cowbird: Survey 3
- ⊕ Brown-headed Cowbird: Survey 4
- ✱ Brown-headed Cowbird: Survey 5
- Yellow Warbler
- Yellow-breasted Chat
- Project Area
- 500-foot Survey Buffer
- Southwestern Willow Flycatcher Survey Area
- Roads

Source: NAIP 2012  
 900 450 0 900 Feet  
 Scale: 1:10,800; 1 inch = 900 feet

**Figure 4**  
**Survey Results Map**

## **APPENDIX A**

### **FIELD DATA COLLECTED DURING 2013 SOUTHWESTERN WILLOW FLYCATCHER SURVEYS**



**APPENDIX A – FIELD DATA COLLECTED DURING 2013 SWFL SURVEYS**

Primary_Bio	Date	Survey_Number	StartTime	StartTemp_F	StartCC	StartAvgWind_Spd_mph	EndTime	EndTemp_F	EndCC	EndAvgWind	Notes	StartWind	EndWind_Dir
Andrew Fisher	5/23/2013	1	7:00:00 AM	56	10	0	10:00:00 AM	70	0	3	Survey conducted concurrently with 3rd LBVI survey. No SWFL detected. All wildlife species observed were recorded on the LBVI form.	N/A	W
Andrew Fisher	6/6/2013	2	6:31:18 AM	64	100	0	9:33:00 AM	72	50	2	No SWFL	N/A	W
Andrew Fisher	6/18/2013	3	7:37:39 AM	63	0	0	10:10:00 AM	72	0	3	No SWFL	N/A	W
Andrew Fisher	7/1/2013	4	7:29:47 AM	73	100	0	10:00:00 AM	78	80	3	No SWFL	N/A	W
Andrew Fisher	7/11/2013	5	7:32:20 AM	67	100	0	10:00:00 AM	73	100	0	No SWFL, last survey.	N/A	N/A

Primary_Bio	Survey_Number	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	1	5/23/2013	10:47:38 AM	Bird	Hutton's Vireo	Vireo huttoni	Passeriformes	Vireonidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	10:36:32 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	10:46:11 AM	Terrestrial Mammal	Mule Deer	Odocoileus hemionus	Artiodactyla	Cervidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	10:47:18 AM	Bird	Anna's Hummingbird	Calypte anna	Apodiformes	Trochilidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	10:46:51 AM	Butterfly or moth	Western tiger swallowtail	Papilio rutulus							Individual(s)				
Andrew Fisher	1	5/23/2013	10:45:46 AM	Terrestrial Mammal	California Ground Squirrel	Spermophilus beecheyi	Rodentia	Sciuridae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	10:45:21 AM	Terrestrial Mammal	Desert Cottontail	Sylvilagus audubonii	Lagomorpha	Leporidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	10:44:59 AM	Terrestrial Mammal	Coyote	Canis latrans	Carnivora	Canidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	10:44:35 AM	Terrestrial Mammal	Striped Skunk	Mephitis mephitis	Carnivora	Mephitidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	10:44:19 AM	Terrestrial Mammal	Raccoon	Procyon lotor	Carnivora	Procyonidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	8:24:08 AM	Bird	American Kestrel	Falco sparverius	Falconiformes	Falconidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	8:39:41 AM	Butterfly or moth	Mourning cloak	Unk							Individual(s)				
Andrew Fisher	1	5/23/2013	10:49:23 AM	Bird	Northern Flicker	Colaptes auratus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	8:27:53 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	8:31:35 AM	Bird	great blue heron	Ardea herodias	Pelecaniformes	Ardeidae	None	None	CDF_S-Sensitive   IUCN_LC-Least Concern	No	Individual(s)	Adult	Unknown	4	Foraging
Andrew Fisher	1	5/23/2013	8:37:53 AM	Bird	Western Scrub-Jay	Aphelocoma californica	Passeriformes	Corvidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 SWFL SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	1	5/23/2013	8:38:03 AM	Butterfly or moth	Red admiral	Vanessa atalanta	Lepidoptera	Nymphalidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	8:38:19 AM	Butterfly or moth	Sara orangetip	Anthocharis sara sara	Lepidoptera	Pieridae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	8:38:53 AM	Bird	Orange-crowned Warbler	Oreothlypis celata	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	9:09:15 AM	Bird	Western Bluebird	Sialia mexicana	Passeriformes	Turdidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	9:09:26 AM	Bird	Brewer's Blackbird	Euphagus cyanocephalus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	9:22:58 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	1	5/23/2013	9:25:06 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	2	Calling
Andrew Fisher	1	5/23/2013	10:32:02 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	10:24:14 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Unknown	1	Carrying food to nest.
Andrew Fisher	1	5/23/2013	7:45:53 AM	Bird	Clark's Grebe	Aechmophorus clarkii	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	8:50:58 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	9:46:02 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	7:28:39 AM	Bird	Lesser Goldfinch	Spinus psaltria	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:13:23 AM	Bird	Bewick's Wren	Thryomanes bewickii	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:13:29 AM	Bird	Black Phoebe	Sayornis nigricans	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:13:34 AM	Bird	Ash-throated Flycatcher	Myiarchus cinerascens	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:13:40 AM	Bird	Mallard	Anas platyrhynchos	Anseriformes	Anatidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:23:42 AM	Bird	Turkey Vulture	Cathartes aura	Accipitriformes	Cathartidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:23:47 AM	Bird	Tree Swallow	Tachycineta bicolor	Passeriformes	Hirundinidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:23:54 AM	Bird	House Wren	Troglodytes aedon	Passeriformes	Troglodytidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:24:00 AM	Bird	Spotted Towhee	Pipilo maculatus	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:24:37 AM	Bird	Nuttall's Woodpecker	Picoides nuttallii	Piciformes	Picidae				No	Individual(s)				

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 SWFL SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	1	5/23/2013	7:24:43 AM	Bird	Acorn Woodpecker	Melanerpes formicivorus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:46:11 AM	Butterfly or moth	Common buckeye	Junonia coenia	Lepidoptera	Nymphalidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:28:33 AM	Bird	Oak Titmouse	Baeolophus inornatus	Passeriformes	Paridae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	10:27:51 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	7:44:37 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	2	Calling
Andrew Fisher	1	5/23/2013	7:46:00 AM	Bird	Western Grebe	Aechmophorus occidentalis	Podicipediformes	Podicipedidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:48:50 AM	Bird	Red-winged Blackbird	Agelaius phoeniceus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:49:01 AM	Bird	White-breasted Nuthatch	Sitta carolinensis	Passeriformes	Sittidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:49:16 AM	Bird	Common Yellowthroat	Geothlypis trichas	Passeriformes	Parulidae				No	Individual(s)				
Andrew Fisher	1	5/23/2013	7:53:31 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	7:58:06 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	1	5/23/2013	8:03:15 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	8:06:46 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	8:13:03 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	1	5/23/2013	8:22:47 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	2	Calling
Andrew Fisher	1	5/23/2013	9:54:37 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	2	Calling
Andrew Fisher	1	5/23/2013	7:24:48 AM	Bird	Song Sparrow	Melospiza melodia	Passeriformes	Emberizidae				No	Individual(s)				
Andrew Fisher	2	6/6/2013	7:45:47 AM	Frog/Toad	Bullfrog	Rana catesbeiana	Anura	Ranidae				No	Individual(s)				
Andrew Fisher	2	6/6/2013	7:07:31 AM	Bird	black-crowned night heron	Nycticorax nycticorax	Pelecaniformes	Ardeidae	None	None	IUCN_LC-Least Concern	No	Individual(s)	Adult	Not Applicable	1	
Andrew Fisher	2	6/6/2013	8:59:50 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Flying

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 SWFL SURVEYS**

Primary_Bio	Survey_Number	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	2	6/6/2013	9:07:35 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	2	6/6/2013	9:08:08 AM	Bird	Blue Grosbeak	Passerina caerulea	Passeriformes	Cardinalidae				No	Individual(s)				
Andrew Fisher	2	6/6/2013	9:14:59 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	2	6/6/2013	9:28:13 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	6/6/2013	8:55:30 AM	Bird	Blue-gray Gnatcatcher	Poliophtila caerulea	Passeriformes	Poliophtilidae				No	Individual(s)				
Andrew Fisher	2	6/6/2013	8:31:42 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	3	Calling, several males calling in area.
Andrew Fisher	2	6/6/2013	7:40:13 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	6/6/2013	7:28:00 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	6/6/2013	7:27:34 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	2	6/6/2013	7:15:54 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	4	Calling
Andrew Fisher	2	6/6/2013	7:14:48 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	2	Calling, several males
Andrew Fisher	2	6/6/2013	7:08:19 AM	Bird	yellow-breasted chat	Icteria virens	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   IUCN_LC-Least Concern	Yes	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	2	6/6/2013	7:07:49 AM	Bird	Costa's hummingbird	Calypte costae	Apodiformes	Trochilidae	None	None	ABC_WLBCC-Watch List of Birds of Conservation Concern   IUCN_LC-Least Concern	No	Individual(s)	Subadult	Male	1	
Andrew Fisher	2	6/6/2013	9:32:47 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	3	6/18/2013	9:39:40 AM	Lizard	Granite Spiny Lizard	Sceloporus orcutti	Squamata	Phrynosomatidae				No	Individual(s)				
Andrew Fisher	3	6/18/2013	10:10:27 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	3	Calling
Andrew Fisher	3	6/18/2013	9:40:21 AM	Bird	Black-necked Stilt	Himantopus mexicanus	Charadriiformes	Recurvirostridae				No	Individual(s)				
Andrew Fisher	3	6/18/2013	9:39:28 AM	Butterfly or moth	Red admiral	Vanessa atalanta	Lepidoptera	Nymphalidae				No	Individual(s)				
Andrew Fisher	3	6/18/2013	8:34:57 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	6	Flying
Andrew Fisher	3	6/18/2013	8:09:30 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	Calling

**APPENDIX A – FIELD DATA COLLECTED DURING 2013 SWFL SURVEYS**

Primary_Bio	Survey_ Number	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	3	6/18/2013	7:37:58 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	3	6/18/2013	9:44:07 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	4	7/1/2013	9:28:31 AM	Butterfly or moth	Acmon blue	Icaricia acmon acmon	Lepidoptera	Lycaenidae				No	Individual(s)				
Andrew Fisher	4	7/1/2013	7:51:15 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	2	Calling
Andrew Fisher	4	7/1/2013	7:52:00 AM	Terrestrial Mammal	Virginia Opossum	Didelphis virginiana	Didelphimorphia	Didelphidae				No	Individual(s)				
Andrew Fisher	4	7/1/2013	8:13:36 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male and Female	3	Calling
Andrew Fisher	4	7/1/2013	8:14:56 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	1	
Andrew Fisher	4	7/1/2013	9:28:40 AM	Butterfly or moth	Common white	Unk							Individual(s)				
Andrew Fisher	4	7/1/2013	9:29:09 AM	Butterfly or moth	Great copper	Unk							Individual(s)				
Andrew Fisher	4	7/1/2013	9:29:24 AM	Butterfly or moth	Red admiral	Vanessa atalanta	Lepidoptera	Nymphalidae				No	Individual(s)				
Andrew Fisher	4	7/1/2013	9:31:17 AM	Lizard	coastal whiptail	Aspidoscelis tigris stejnegeri	Lacertilia	Teiidae	None	None		Yes	Individual(s)	Adult	Unknown	1	
Andrew Fisher	4	7/1/2013	9:36:14 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	2	Calling
Andrew Fisher	4	7/1/2013	9:44:23 AM	Butterfly or moth	Spring (California) white	Pontia sisymbrii	Lepidoptera	Pieridae				No	Individual(s)				
Andrew Fisher	4	7/1/2013	10:11:46 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	1	Calling
Andrew Fisher	4	7/1/2013	8:33:14 AM	Turtle/Tortoise	Slider	Trachemys scripta	Testudines	Emydidae				No	Individual(s)				
Andrew Fisher	4	7/1/2013	9:27:34 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	5	7/11/2013	9:42:17 AM	Bird	Bullock's Oriole	Icterus bullockii	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:36:50 AM	Bird	Black-headed Grosbeak	Pheucticus melanocephalus	Passeriformes	Cardinalidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:37:04 AM	Bird	Lesser Goldfinch	Spinus psaltria	Passeriformes	Fringillidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:37:09 AM	Bird	Acorn Woodpecker	Melanerpes formicivorus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:37:13 AM	Bird	Brewer's Blackbird	Euphagus cyanocephalus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:37:19 AM	Bird	Red-winged Blackbird	Agelaius phoeniceus	Passeriformes	Icteridae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:36:38 AM	Bird	California Quail	Callipepla californica	Galliformes	Odontophoridae				No	Individual(s)				

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Primary_Bio	Survey_Number	Date	Time	Species_Type	CommonName	ScientificName	Order	Family	FedList	CAList	Other_Status	Sensitive	DetectionType	Age	Sex	Number	BehaviorNotes
Andrew Fisher	5	7/11/2013	9:41:46 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Unknown	1	Calling
Andrew Fisher	5	7/11/2013	9:00:43 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	
Andrew Fisher	5	7/11/2013	9:43:09 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	Calling
Andrew Fisher	5	7/11/2013	9:37:24 AM	Bird	Bushtit	Psaltriparus minimus	Passeriformes	Aegithalidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:36:15 AM	Butterfly or moth	Spring (California) white	Pontia sisymbrii	Lepidoptera	Pieridae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:36:01 AM	Bird	American Crow	Corvus brachyrhynchos	Passeriformes	Corvidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:35:56 AM	Bird	Ash-throated Flycatcher	Myiarchus cinerascens	Passeriformes	Tyrannidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:03:29 AM	Bird	yellow warbler	Setophaga petechia brewsteri	Passeriformes	Parulidae	None	None	DFG_SSC-Species of Special Concern   USFWS_BCC-Birds of Conservation Concern	Yes	Individual(s)	Adult	Male	1	
Andrew Fisher	5	7/11/2013	8:57:10 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	2	
Andrew Fisher	5	7/11/2013	8:47:36 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Female	1	
Andrew Fisher	5	7/11/2013	8:47:29 AM	Bird	Western Sandpiper	Calidris mauri	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	8:47:22 AM	Bird	Least Sandpiper	Calidris minutilla	Charadriiformes	Scolopacidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	8:09:15 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male and Female	3	
Andrew Fisher	5	7/11/2013	9:43:38 AM	Bird	Northern Flicker	Colaptes auratus	Piciformes	Picidae				No	Individual(s)				
Andrew Fisher	5	7/11/2013	9:08:42 AM	Bird	Brown-headed Cowbird	Molothrus ater	Passeriformes	Icteridae				No	Individual(s)	Adult	Male	2	

## **APPENDIX B**

### **WILDLIFE SPECIES DETECTED DURING 2013 SOUTHWESTERN WILLOW FLYCATCHER SURVEYS**



## APPENDIX B – WILDLIFE SPECIES DETECTED DURING 2013 SWFL SURVEYS

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
<b>Invertebrates</b>					
acmon blue	<i>Icaricia acmon acmon</i>	Lepidoptera	Lycaenidae	None	None
western tiger swallowtail	<i>Papilio rutulus</i>	Lepidoptera	Papilionidae	None	None
marine blue	<i>Leptotes marina</i>	Lepidoptera	Lycaenidae	None	None
common buckeye	<i>Junonia coenia</i>	Lepidoptera	Nymphalidae	None	None
red admiral	<i>Vanessa atalanta</i>	Lepidoptera	Nymphalidae	None	None
Sara orangetip	<i>Anthocharis sara sara</i>	Lepidoptera	Pieridae	None	None
spring (California) white	<i>Pontia sisymbrii</i>	Lepidoptera	Pieridae	None	None
<b>Reptiles &amp; Amphibians</b>					
bullfrog	<i>Rana catesbeiana</i>	Anura	Ranidae	None	None
coastal whiptail	<i>Aspidoscelis tigris stejnegeri</i>	Lacertilia	Teiidae	None	None
western fence lizard	<i>Sceloporus occidentalis</i>	Squamata	Phrynosomatidae	None	None
granite spiny lizard	<i>Sceloporus orcutti</i>	Squamata	Phrynosomatidae	None	None
two-striped garter snake	<i>Thamnophis hammondi</i>	Serpentes	Natricidae	None	Species of Special Concern
red-necked slider	<i>Trachemys scripta</i>	Testudines	Emydidae	None	None
<b>Avian</b>					
red-tailed hawk	<i>Buteo jamaicensis</i>	Accipitriformes	Accipitridae	None	None
red-shouldered hawk	<i>Buteo lineatus</i>	Accipitriformes	Accipitridae	None	None
turkey vulture	<i>Cathartes aura</i>	Accipitriformes	Cathartidae	None	None
mallard	<i>Anas platyrhynchos</i>	Anseriformes	Anatidae	None	None
gadwall	<i>Anas strepera</i>	Anseriformes	Anatidae	None	None
black-chinned hummingbird	<i>Archilochus alexandri</i>	Apodiformes	Trochilidae	None	None
Anna's hummingbird	<i>Calypte anna</i>	Apodiformes	Trochilidae	None	None
Costa's hummingbird	<i>Calypte costae</i>	Apodiformes	Trochilidae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
killdeer	<i>Charadrius vociferus</i>	Charadriiformes	Charadriidae	None	None
black-necked stilt	<i>Himantopus mexicanus</i>	Charadriiformes	Recurvirostridae	None	None
spotted sandpiper	<i>Actitis macularius</i>	Charadriiformes	Scolopacidae	None	None
western sandpiper	<i>Calidris mauri</i>	Charadriiformes	Scolopacidae	None	None
least sandpiper	<i>Calidris minutilla</i>	Charadriiformes	Scolopacidae	None	None
mourning dove	<i>Zenaidura macroura</i>	Columbiformes	Columbidae	None	None
American kestrel	<i>Falco sparverius</i>	Falconiformes	Falconidae	None	None
California quail	<i>Callipepla californica</i>	Galliformes	Odontophoridae	None	None
American coot	<i>Fulica americana</i>	Gruiformes	Rallidae	None	None
bush-tit	<i>Psaltriparus minimus</i>	Passeriformes	Aegithalidae	None	None
cedar waxwing	<i>Bombycilla cedrorum</i>	Passeriformes	Bombycillidae	None	None
blue grosbeak	<i>Passerina caerulea</i>	Passeriformes	Cardinalidae	None	None
black-headed grosbeak	<i>Pheucticus melanocephalus</i>	Passeriformes	Cardinalidae	None	None
western scrub-jay	<i>Aphelocoma californica</i>	Passeriformes	Corvidae	None	None
American crow	<i>Corvus brachyrhynchos</i>	Passeriformes	Corvidae	None	None
song sparrow	<i>Melospiza melodia</i>	Passeriformes	Emberizidae	None	None
spotted towhee	<i>Pipilo maculatus</i>	Passeriformes	Emberizidae	None	None
house finch	<i>Haemorhous mexicanus</i>	Passeriformes	Fringillidae	None	None
lesser goldfinch	<i>Spinus psaltria</i>	Passeriformes	Fringillidae	None	None
American goldfinch	<i>Spinus tristis</i>	Passeriformes	Fringillidae	None	None
cliff swallow	<i>Petrochelidon pyrrhonota</i>	Passeriformes	Hirundinidae	None	None
tree swallow	<i>Tachycineta bicolor</i>	Passeriformes	Hirundinidae	None	None
red-winged blackbird	<i>Agelaius phoeniceus</i>	Passeriformes	Icteridae	None	None
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Passeriformes	Icteridae	None	None
Bullock's oriole	<i>Icterus bullockii</i>	Passeriformes	Icteridae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
brown-headed cowbird	<i>Molothrus ater</i>	Passeriformes	Icteridae	None	None
great-tailed grackle	<i>Quiscalus mexicanus</i>	Passeriformes	Icteridae	None	None
northern mockingbird	<i>Mimus polyglottos</i>	Passeriformes	Mimidae	None	None
California thrasher	<i>Toxostoma redivivum</i>	Passeriformes	Mimidae	None	None
oak titmouse	<i>Baeolophus inornatus</i>	Passeriformes	Paridae	None	None
Wilson's warbler	<i>Cardellina pusilla</i>	Passeriformes	Parulidae	None	None
common yellowthroat	<i>Geothlypis trichas</i>	Passeriformes	Parulidae	None	None
yellow-breasted chat	<i>Icteria virens</i>	Passeriformes	Parulidae	None	Species of Special Concern
orange-crowned warbler	<i>Oreothlypis celata</i>	Passeriformes	Parulidae	None	None
yellow-rumped warbler	<i>Setophaga coronata</i>	Passeriformes	Parulidae	None	None
yellow warbler	<i>Setophaga petechia brewsteri</i>	Passeriformes	Parulidae	None	Species of Special Concern
Townsend's warbler	<i>Setophaga townsendi</i>	Passeriformes	Parulidae	None	None
blue-gray gnatcatcher	<i>Polioptila caerulea</i>	Passeriformes	Poliptilidae	None	None
white-breasted nuthatch	<i>Sitta carolinensis</i>	Passeriformes	Sittidae	None	None
European starling	<i>Sturnus vulgaris</i>	Passeriformes	Sturnidae	None	None
wrentit	<i>Chamaea fasciata</i>	Passeriformes	Sylviidae	None	None
canyon wren	<i>Catherpes mexicanus</i>	Passeriformes	Troglodytidae	None	None
Bewick's wren	<i>Thryomanes bewickii</i>	Passeriformes	Troglodytidae	None	None
house wren	<i>Troglodytes aedon</i>	Passeriformes	Troglodytidae	None	None
western bluebird	<i>Sialia mexicana</i>	Passeriformes	Turdidae	None	None
ash-throated flycatcher	<i>Myiarchus cinerascens</i>	Passeriformes	Tyrannidae	None	None
black phoebe	<i>Sayornis nigricans</i>	Passeriformes	Tyrannidae	None	None
western kingbird	<i>Tyrannus verticalis</i>	Passeriformes	Tyrannidae	None	None
warbling vireo	<i>Vireo gilvus</i>	Passeriformes	Vireonidae	None	None
Hutton's vireo	<i>Vireo huttoni</i>	Passeriformes	Vireonidae	None	None
great egret	<i>Ardea alba</i>	Pelecaniformes	Ardeidae	None	None
great blue heron	<i>Ardea herodias</i>	Pelecaniformes	Ardeidae	None	None

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
black-crowned night heron	<i>Nycticorax nycticorax</i>	Pelecaniformes	Ardeidae	None	None
American white pelican	<i>Pelecanus erythrorhynchos</i>	Pelecaniformes	Pelecanidae	None	None
northern flicker	<i>Colaptes auratus</i>	Piciformes	Picidae	None	None
acorn woodpecker	<i>Melanerpes formicivorus</i>	Piciformes	Picidae	None	None
Nuttall's woodpecker	<i>Picoides nuttallii</i>	Piciformes	Picidae	None	None
downy woodpecker	<i>Picoides pubescens</i>	Piciformes	Picidae	None	None
hairy woodpecker	<i>Picoides villosus</i>	Piciformes	Picidae	None	None
Clark's grebe	<i>Aechmophorus clarkii</i>	Podicipediformes	Podicipedidae	None	None
western grebe	<i>Aechmophorus occidentalis</i>	Podicipediformes	Podicipedidae	None	None
pied-billed grebe	<i>Podilymbus podiceps</i>	Podicipediformes	Podicipedidae	None	None
double-crested cormorant	<i>Phalacrocorax auritus</i>	Suliformes	Phalacrocoracidae	None	None
<b>Mammals</b>					
mule deer	<i>Odocoileus hemionus</i>	Artiodactyla	Cervidae	None	None
coyote	<i>Canis latrans</i>	Carnivora	Canidae	None	None
striped skunk	<i>Mephitis mephitis</i>	Carnivora	Mephitidae	None	None
raccoon	<i>Procyon lotor</i>	Carnivora	Procyonidae	None	None
Virginia opossum	<i>Didelphis virginiana</i>	Didelphimorphia	Didelphidae	None	None
desert cottontail	<i>Sylvilagus audubonii</i>	Lagomorpha	Leporidae	None	None
California ground squirrel	<i>Spermophilus beecheyi</i>	Rodentia	Sciuridae	None	None

\* Sensitivity status taken from State of California 2011

**APPENDIX D**

**BAT SURVEYS AND HABITAT  
ASSESSMENT REPORT**



# Bat Surveys and Habitat Assessment for Lake Wohlford Dam Replacement Project

**February 18, 2014**

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## 1.0 Summary

Bat surveys for the Lake Wohlford Dam Replacement Project (the Project) were conducted in 2013. A total of three survey sessions were completed in the spring, summer, and fall of 2013. A total of eight bat species were detected in the Project area, including the silver-haired bat (*Lasiurus noctivagans*), big brown bat (*Eptesicus fuscus*), Mexican free-tailed bat (*Tadarida brasiliensis*), western pipistrelle (*Parastrellus hesperus*), pallid bat (*Antrozous pallidus*), western mastiff bat (*Eumops perotis californicus*), Yuma Myotis (*Myotis yumanensis*), and California Myotis (*Myotis californicus*). None of the bat species detected were state or federally listed, however two of them (pallid bat and western mastiff bat) are California Department of Fish and Wildlife Species of Special Concern (State of California 2011).

Observed bat day-roosting activity was concentrated in the northern portion of the Project area in large oak trees above the shoreline. Additional incidental roosting was observed along the eastern and western portions of the Project area in stands of old, large trees, however; the population of roosting bats in the eastern and western portions of the Project area was significantly less than in the northern area. Along the southern edge of the Project area, only three individual bats were observed (during summer surveys) emerging from trees below the existing dam. No significant roosting or colonies were detected in that portion of the Project area. There was regular use of the lake by bats for foraging and drinking activity.

Those bats observed roosting in the Project area generally left roost sites to forage and drink in nearby habitat. The bulk of the foraging occurred in the northwestern portion of the Project area and along the shoreline in open areas between trees. Additional bat species were observed coming into the Project area from adjacent habitat, generally using the lake and foraging sites intermittently. Bats were also observed flying through the Project area, primarily using the western edge of the lake as a flight corridor in transit to other areas to the south.

## 2.0 Introduction

### 2.1 PROJECT DESCRIPTION

The City of Escondido (the City) is planning to construct a replacement dam immediately downstream (west) of the existing Lake Wohlford dam and partially deconstruct the existing dam. Replacing the dam requires replacement or modification of the existing dam's outlet tower and associated pipes beneath the dam. The existing dam is composed of rock fill topped by a portion of earth fill, with large rip rap boulders on the dam face. To accommodate the replacement dam's configuration, the Project also entails realignment of a portion of Oakvale Road that passes the southern dam abutment. This portion of the road will be realigned south of its current location, requiring excavation into the adjacent hillside. The intent of

the Project, in addition to improving the dam's seismic safety, is to return the reservoir to its previous height and regain the lost water storage capability and capacity. No changes to the 1,480-foot spillway crest elevation of the existing dam are proposed. Therefore, no changes to the historic high water level of Lake Wohlford are proposed.

## 2.2 SITE DESCRIPTION

The proposed Project is located approximately 7 miles east of Interstate 15 and 2 miles east of Valley Center Road. The Project area is in unincorporated San Diego County, on land that is owned by the City (Figure 1). The Project study area includes Lake Wohlford Dam, the proposed Oakvale Road realignment plus a surround 500-foot buffer (Figure 2). Most of the topography within the Project area is granitic hills that gently slope toward Lake Wohlford. The main vegetation communities documented within the Project area are coast live oak woodland, southern mixed chaparral, Diegan coastal sage scrub, southern willow scrub, wetlands, woodlands, various types of grasslands, and urban/developed (Figure 3). The majority of the riparian vegetation is located along the lake edge and within a few small drainages that feed into the lake. The primary source of water comes into the lake from the east. The east end of the Project area has a gently westward-sloping sandy floodplain where the main river that feeds the lake meanders west before emptying into the lake.

The Project area is located within both the County of San Diego North County Multiple Species Conservation Program (NCMSCP) and the Multiple Habitat Conservation Program (MHCP) planning areas (County of San Diego 2009).

## 2.3 BAT SPECIES

California has twenty-five bat species, none of which are federally listed. No species of bats in California are state listed. Sixteen of the twenty-five bat species in California are classified as rare and/or considered Species of Special Concern by the California Department of Fish and Wildlife, Species of Concern by the U.S. Fish and Wildlife Service or Sensitive by the U.S. Forest Service and Bureau of Land Management (State of California 2011). Many of these species are known to have roosting, behavioral and ecological interactions with habitat types and infrastructure that are located at or near the Project area at Lake Wohlford.

Bat surveys were conducted to determine the status of resident and migrating bats and their potential use of the Project area, including presence, relative abundance, and distribution of species within the Project area. Surveys were performed during peak activity periods to maximize our understanding of bat use. Biologists Dr. Matt Rahn and Kelcey Stricker conducted the surveys in the spring, summer, and fall seasons of 2013 using a combination of audio and visual techniques. The surveys focused on answering the following questions:

- Which species of bats use the Project area?
- What is the relative abundance of these species?
- What is approximate distribution of these species in the Project area?

- Are any sensitive species of bats roosting in the Project area?
- Is the Project area used by sensitive bat species in the course of its normal movements and activities (e.g. drinking, foraging, migrating, or commuting)?
- Does the Project area or the surrounding area include habitat features (e.g. roosts, water sources, or other habitat features) that might attract bats?
- Does the Project area contain topographical or landscape features that could concentrate or focus bat activity or movement through the Project area?

### 3.0 Methods

The study and monitoring of bats has been accomplished through a variety of techniques, each of which have strengths and weaknesses. The type of data available to an observer is largely dependant on the survey techniques used. While trapping (using mist nets or harp traps) is often used as a survey and monitoring tool, many bats fly above the height of the traps, or are able to avoid them altogether. Consequently, many bat ecologists have turned to other less invasive tools for assessing bats and habitat.

For these surveys, we employed the use of acoustic survey techniques and thermal imaging. The AnaBat™ system (developed by Chris Corben and Titley Electronics) is designed to help users identify species of bats based on their unique echolocation call frequency. The use of AnaBat monitoring equipment to record and analyze bat echolocation calls is well documented in an array of scientific journals, becoming a widely accepted technique. The system converts the ultrasonic echolocation signals of bats into audible electronic signals that can be recorded and processed to assist in identification of the species. Most bats have very unique, readily identifiable echolocation calls. As with many tools, AnaBat has its limitations, including the inability to accurately assess abundance and behavior (e.g. roosting, foraging, drinking, etc). To compensate for this, we used thermal imaging cameras designed by Raytheon and Mine Safety Appliances (MSA) to visually monitor the bat community in the Project area. These devices have significant advantages over traditional infrared (IR) cameras, namely the ability to record bats from farther distances and much better resolution for exit and habitat surveys. By combining observational studies with broader acoustic monitoring, we were able to assess areas with greater accuracy, significantly increasing our confidence regarding the presence and absence of bats and their associated use of the habitat.

For the identification of maternity roosts, we used both acoustic and visual surveys (including the AnaBat system and thermal imaging cameras). The trees were monitored during emergence for bats and any observed activity through the night. If bats were detected entering and exiting the trees, this is generally suggestive of a maternity roost, where the bats will periodically return to feed the young. If such activity is detected, we could perform additional assessments on individual trees. Typically, non-volant bats (those that cannot fly) will still emit echolocation calls

while roosting in the tree crevices and will also display a heat signature that can usually be detected by the thermal camera (typically later in the evening as the surface temperatures change). By using these survey techniques, we can identify the presence or absence of maternity colonies with relatively high accuracy and confidence.

## 4.0 Results

A preliminary site visit was conducted on May 28, 2013, to identify survey routes, vegetation communities, and habitat features (e.g. potential tree roosts, flight corridors, and other key habitat features) in order to maximize the detection of bats and survey routes. The spring bat surveys were conducted May 29-31, 2013. Only the big brown bat and the western pipistrelle were detected during these surveys. A species of *Myotis* (50kHz range) was detected, however the call was intermittent and fragmented, limiting our ability to identify the call to species (Table 1).

Summer surveys began July 1-2, 2013, however excessive heat severely limited bat activity; the bats were either not active or emerged very late into the evening. Additional summer surveys were conducted August 29-31, 2013. The weather during these additional survey visits was much more conducive for bat activity. Hundreds of bats were detected during these surveys, with eight species being observed in the Project area (Table 1). No maternity colonies were detected within the Project area. Fall surveys were conducted October 18-19 and November 1-3, 2013. Bat activity had significantly decreased, with only four species of bats detected within the Project area, with relatively few individuals observed (Table 1). Those species still present in the Project area included the big brown bat, Yuma *Myotis*, western pipistrelle, and western mastiff bat.

**Table 1. Bat Survey Results**

Date	Species <sup>1</sup>	Site Use	Relative Abundance <sup>2</sup>	Survey Areas
<b>Spring</b>				
May 29	EPFU	Foraging, Drinking	15-20	North, West
	PAHE	Roosting, Foraging	10-12	North, West
May 30	PAHE	Roosting, Foraging	5-7	South, East
May 31	PAHE	Foraging, Commuting	3-5	South, East
	Unk. <i>Myotis</i>	Commuting	2	North
<b>Summer</b>				
July 1	LANO	Roosting, Foraging	10-15	North, West
	MYYU	Foraging	5-7	North, West
	PAHE	Roosting, Foraging	10-12	North, West
	EPFU	Roosting, Foraging	10-12	North, West
July 2	EPFU	Foraging, Commuting	10-12	South, East
	TABR	Foraging, Commuting	3-5	South, East
	PAHE	Roosting, Foraging	10-12	South
Aug 29	PAHE	Foraging	50-60	South, East
	MYYU	Foraging, Commuting	100+	South, East

	EPFU	Foraging	50-60	South, East
Aug 30	TABR	Foraging, Commuting	50+	North, West
	EPFU	Roosting, Foraging	50-60	North, West
	MYYU	Foraging, Commuting	50-60	North, West
	PAHE	Roosting, Foraging	100+	North, West
	LANO	Roosting, Foraging	50-75	North, West
	EUPE	Commuting	2-3	North, West
Aug 31	MYYU	Foraging, Commuting	100+	North, West
	MYCA	Foraging	5	North, West
	PAHE	Roosting, Foraging	100+	North, West
	EPFU	Roosting, Foraging	100+	North, West
	TABR	Foraging, Commuting	100+	North, West
	ANPA	Foraging, Commuting	20-25	North, West
<b>Fall</b>				
Oct 18	LANO	Roosting, Foraging	10-15	North, West
	EPFU	Roosting, Foraging	10-15	North, West
	PAHE	Foraging	10-12	North, West
Oct 19	EPFU	Foraging, Commuting	15-25	South, East
	PAHE	Foraging	5-7	South, East
Nov 1	LANO	Roosting, Foraging	5-10	North, West
	EPFU	Roosting, Foraging	15-20	North, West
	PAHE	Roosting, Foraging	10-12	North, West
Nov 2	LANO	Foraging, Commuting	20-25	North, West
	EPFU	Roosting, Foraging	15-20	North, West
	PAHE	Foraging	5-7	North, West
	EUPE	Commuting	1	North, West
Nov 3	EPFU	Foraging, Commuting	5-10	South, East
	PAHE	Foraging	3-5	South, East

<sup>1</sup>:LANO = silver-haired bat (*Lasionycteris noctivagans*) EPFU = big brown bat (*Eptesicus fuscus*)  
TABR = Mexican free-tailed bat (*Tadarida brasiliensis*) PAHE = western pipistrelle (*Parastrellus hesperus*)  
MYYU = Yuma Myotis (*Myotis yumanensis*) MYCA = California Myotis (*Myotis californicus*)

**California Species of Special Concern:**

EUPE = western mastiff bat (*Eumops perotis californicus*)  
ANPA = pallid bat (*Antrozous pallidus*)

<sup>2</sup> Relative abundance is the estimated number of bats based on the combination of acoustic and thermal assessments

Meteorological data was collected during all survey periods. Efforts were made to ensure that data were collected during peak activity periods during each season, and that ambient weather conditions were conducive to bat activity [e.g. moonlight, no precipitation and low wind speeds (0-3mph)] (Table 2).

**Table 2. Ambient Weather Conditions**

Date	Temperature Range (F) <sup>1</sup>	Relative Humidity (%)	Wind Speed (mph)
<b>Spring</b>			
May 29	74-68	65%	2-4
May 30	75-67	55%	1-3
May 31	77-67	65%	1-3
<b>Summer</b>			
July 1	95-92	88%	2-5
July 2	92-90	85%	1-2
August 29	88-85	45%	3-6

August 30	87-82	45%	2-4
August 31	81-78	56%	2-4
<b>Fall</b>			
October 18	76-70	30%	2-5
October 19	78-72	22%	1-3
November 1	76-70	25%	4-7
November 2	71-68	25%	3-5
November 3	68-64	33%	2-6

<sup>1</sup> The temperature range begins at the start of surveys in the evening, to when they ended close to midnight.

Bat surveys commenced prior to sundown. The first bats typically emerged at dusk (with the exception of the July surveys where high heat delayed emergence until later in the evening), with the western pipistrelle typically being the first species detected. Surveys continuing until bat activity was minimal usually around (11:30pm). The bulk of the bat activity occurred during the first three hours after emergence. Biologists used SD2 AnaBat detectors (Titley Electronics) and thermal imaging cameras (Raytheon and MSA) to detect bats by sonar and visually. Three species of bats were detected both roosting and foraging in the Project area, including the silver-haired bat, big brown bat, and western pipistrelle. These species of bats were detected roosting in the trees located in the Project area, generally along the northern portions above the lake in the larger oak trees above the shoreline. Additional incidental roosting was observed along the eastern and western portions of the Project area in larger and older stands of trees; however, the population of roosting bats observed was significantly less than in the northern area. Along the southern edge of the Project area, only three individual bats (all were western pipistrelle) were observed (during summer surveys) emerging from the trees below the existing dam (western pipistrelle). No significant roosting or colonies were detected in that portion of the Project area.

Those bats observed roosting in the Project area generally left the roost sites to forage and obtain water in the nearby habitat; the bulk of the foraging occurred in the north western portion of the Project area, along the shoreline in open areas between trees. Additional bat species were observed coming into the Project area from adjacent habitat, generally using the lake for foraging and drinking. Bats were also observed flying through the Project area, primarily using the western edge of the Project area as a flight corridor in transit to other areas to the south.

The most abundant and ubiquitous species observed roosting in the Project area was the big brown bat, silver haired bat, and the western pipistrelle. Depending on the season (Table 3) the Yuma Myotis and Mexican free-tailed bats were also relatively common. The pallid bat was recorded infrequently. Finally, the California Myotis and western mastiff bat were detected within the Project area, but are relatively rare occurrences.

Both the western pipistrelle and big brown bat are known to use tree roosts, although they also use caves, mines, crevices and other roost types. Neither of these species are considered sensitive in California and both were observed using larger adjacent trees as roost sites. Majority of the roosting occurred in the northern area

of the Project area, while only three western pipistrelles were seen emerging from trees below the southern extent of the lake. There were no bats observed roosting in the rocks and boulders below the dam, and bat roosting within the trees below was limited to only a few individuals. The observed bats roosting in the trees below the dam were only observed during the one survey, with subsequent visits not detecting roosting bats. Therefore, roosting potential below the dam seems to be transient and intermittent.

The silver-haired bat is an obligate tree-roosting species commonly found in tree cavities or under loose bark. Its distribution in California is limited, and remains poorly understood. Breeding populations are relatively common in portions of the state, and not well understood in the southern parts of the California. According to the California Department of Fish and Wildlife, the silver-haired bat was placed on the "Watch List" because of its dependence on trees and snags, and the relationship between its known distribution and prime timber harvest areas. Other information on the distribution, seasonal use and habitat associations is poorly understood, particularly in southern California.

While the pallid bat was only observed foraging and flying through the Project area, they have been known to roost in trees (although not observed during these surveys). Pallid bats are more commonly associated with cliff and crevice roosts and boulders which are commonly found outside the Project area in adjacent habitat. The Mexican free-tailed bat was not observed using the Project area as a roost site, but was observed foraging and commuting through the area, especially on the northern and western areas. This suggests that there is likely a roosting colony near the Project area, particularly since this species was recorded relatively early in the evening, suggesting a short commute time to the Project area.

The Yuma Myotis is usually found roosting near larger bodies of water. They are commonly found roosting in man-made structures, including buildings and bridges. They are also known to roost in caves, mines, cliffs and crevices. The number of Yuma Myotis observed within the Project area suggests that there is nearby roost, though not in the Project area. Similarly, the California Myotis was infrequently observed and likely roosts outside the Project area.

Finally, the western mastiff bat was detected commuting through the Project area. In California, this bat is considered a Species of Special Concern and BLM Sensitive Species (State of California 2011). This species is known to roost in cliffs and crevices at higher elevation sites in southern California. It was not observed roosting in the Project area, and was only observed late in the evening (after 11:00 pm) flying at higher elevations passing above the Project area (generally in a north to south direction). No active foraging or drinking was observed. Therefore the western mastiff bat is likely to only migrate through the Project area.

**Table 3. Bat Species Status, Habitat Associations, and Relative Abundance**

Common Name	Species Status <sup>1</sup>	Habitat Associations	Relative Abundance <sup>2</sup>
California myotis	None	Generalist, can be found roosting in cliffs, crevices, caves, mines, and trees	Low - less than 25 individuals observed
Yuma myotis	BLM: Sensitive	Typically found roosting in bridges, buildings, caves and mines near larger bodies of water	High - hundreds of individuals observed
Big brown bat	None	Generalist, can be found roosting in cliffs, crevices, caves, mines, and trees	High - hundreds of individuals observed
Pallid bat	CDFW: Species of Special Concern	Commonly associated with rock outcrops, boulders, and crevices but is also known to roost in cliffs, caves, mines, and trees	Low - less than 50 individuals observed
Mexican free-tailed bat	None	Typically roosting in larger colonies in bridges, caves, and mines	High - hundreds of individuals observed
Silver-haired bat	None	Obligate tree roosting species	Medium - less than 100 individuals observed
Western pipistrelle	None	Generalist, can be found roosting in cliffs, crevices, caves, mines, and trees	High - hundreds of individuals observed
Western mastiff bat	BLM: Sensitive CDFW: Species of Special Concern	Typically associated with cliffs and crevices at higher elevations	Rare - only 3-4 individuals were observed

<sup>1</sup> Species status was determined using the Special Animals List (State of California 2011).

<sup>2</sup> Relative abundance of each bat species is based on the combination of acoustic and thermal assessments.

#### 4.1 HABITAT AND USE ASSESSMENT

Potential roosting, foraging, and flight-path habitat was identified during surveys and is provided in Figures 4 and 5. The majority of the roosting bats were observed in large trees on the northern and western portions of the Project area. The open areas on the north side of the Project area adjacent to large trees supported significant foraging activity of hundreds of bats. The smaller trees did not seem to support roosts, and roosting on the eastern and southern portions of the Project area was limited. Bats were seen drinking and foraging for insects above the lake, mainly along the shoreline.

Given the protocols used (as described above), the Project area does not appear to currently have an active maternity colony. Biologists did not observe the behavior typically associated with this type of colony (revisits during the evening, non-volant young, echolocation calls from the trees, night roosting, etc). While biologists did observe multiple bats emerging from trees, once emergence was complete, the bats left the Project area to forage. A more careful inspection of the trees (post-emergence) did not result in additional echolocation calls or thermal signatures from the trees; after emergence the trees no longer had bats roosting in them.

The roost site fidelity also seems to be minimal. The bats were observed moving between trees, not necessarily using the same tree from one night to the next. Large oak trees on the north end of the Project area were typically the only ones that seemed to support heavy bat roosting.

## 5.0 Recommendations and Conclusions

The trees located within the Project area can support bat roosting habitat, especially on the northern end of the Project area. While no maternity colonies were detected, several species of bats were recorded using the Project area as a day roost. If possible, disturbance to the larger native oak trees should be minimized. Those areas along the southern boundary of the Project area seem to have limited bat roosting potential. No bat roosts were detected in western area of the Project area where the dam would be replaced and where the Oakvale Road realignment would occur.

Because there is limited tree-fidelity (e.g. bats will move from one roost to another through time), any management or conservation actions should focus on the roosting areas rather than individual trees. As such, limiting disturbance to these areas would be ideal. However, if this is not possible, those sites should be disturbed outside of the peak roosting season (late fall through early spring). The Project area also supports a flight corridor and foraging area for bats coming from nearby and/or adjacent areas. The observed foraging areas adjacent to the lake, and the lake itself, seem to provide a significant resource for bats. Care should be taken to maintain the value of foraging and drinking habitat for bats.

## 6.0 Literature Cited

County of San Diego, 2009. Draft North County Multiple Species Conservation Program. February.

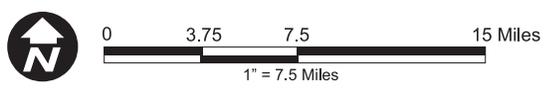
State of California, 2011. The Natural Resources Agency. Department of Fish and Game. Biogeographic Data Branch. California Natural Diversity Database. Special Animals List (898 taxa). January.

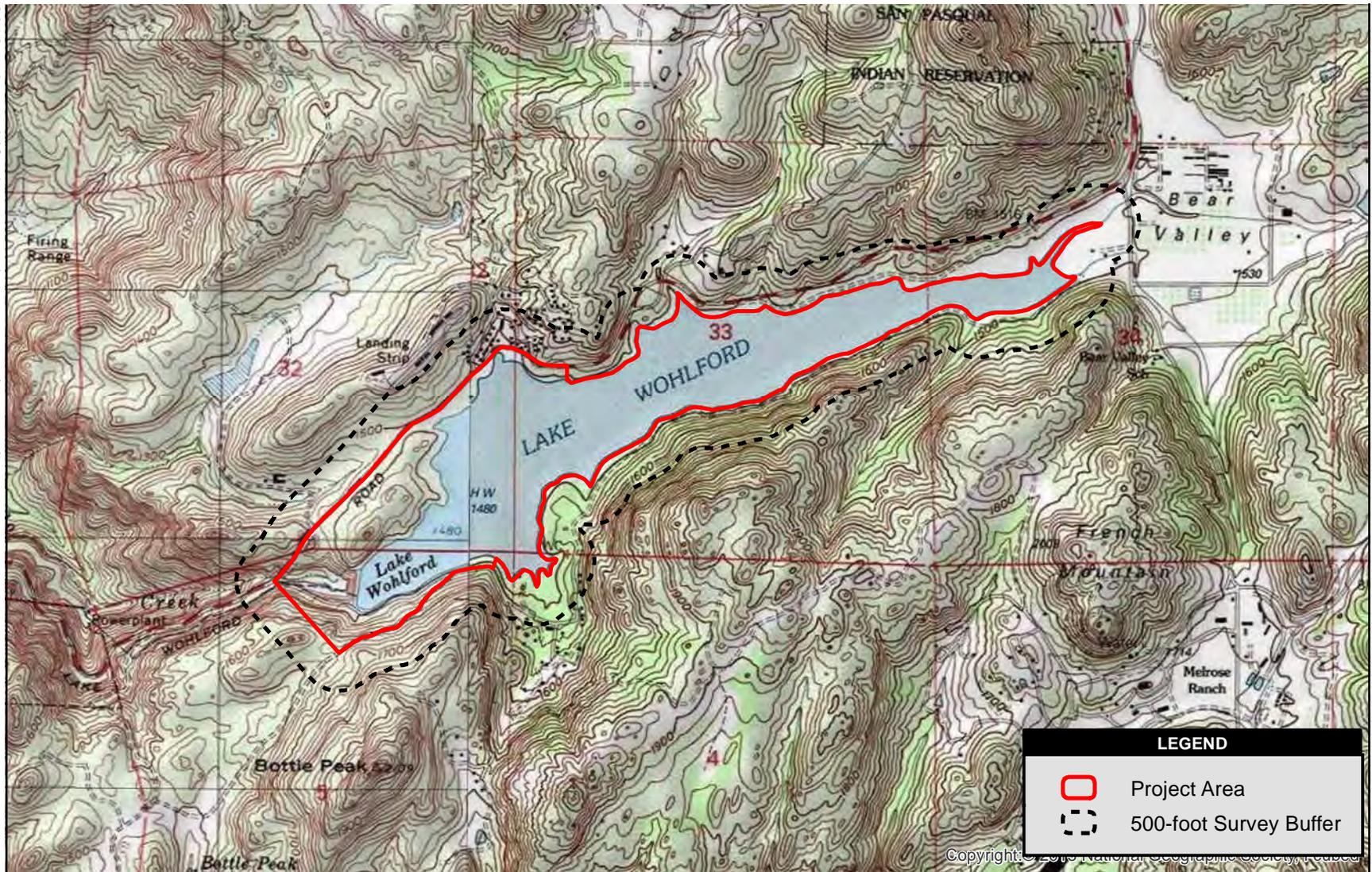
For information on the silver haired bat, see generally:

<http://www.dfg.ca.gov/wildlife/nongame/ssc/docs/mammal/species/47-WatchListAccunts.pdf> (last accessed December 15, 2013).



**Figure 1**  
**Regional Map**

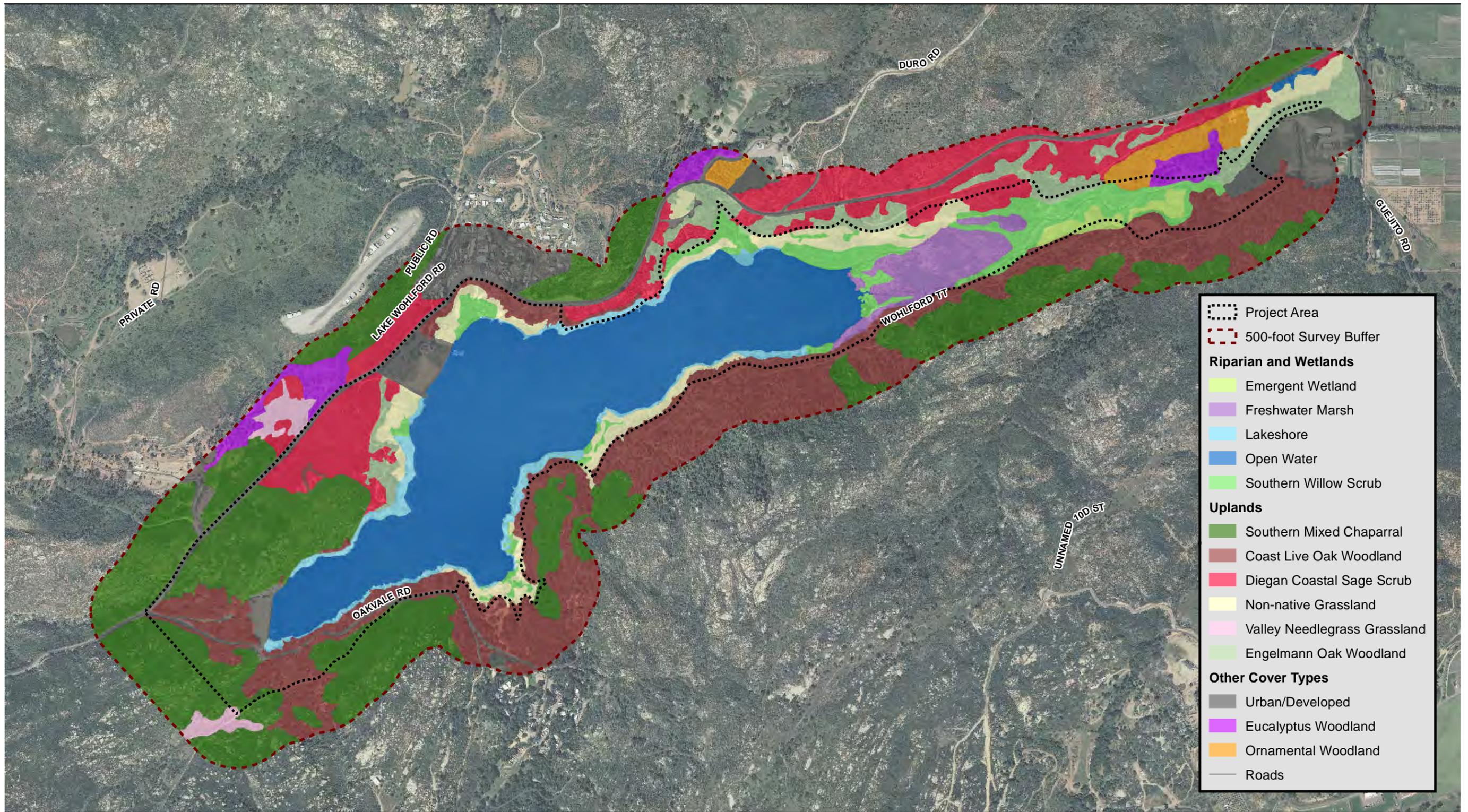




Source: USGS 7.5' Quad Valley Center 1975; USGS 7.5' Quad Rodriguez Mtn. 1988



**Figure 2**  
**Vicinity Map**



[Dotted Black Line] Project Area  
 [Dashed Red Line] 500-foot Survey Buffer  
**Riparian and Wetlands**  
 [Light Green] Emergent Wetland  
 [Purple] Freshwater Marsh  
 [Light Blue] Lakeshore  
 [Blue] Open Water  
 [Light Green] Southern Willow Scrub  
**Uplands**  
 [Dark Green] Southern Mixed Chaparral  
 [Brown] Coast Live Oak Woodland  
 [Red] Diegan Coastal Sage Scrub  
 [Yellow] Non-native Grassland  
 [Pink] Valley Needlegrass Grassland  
 [Light Green] Engelmann Oak Woodland  
**Other Cover Types**  
 [Grey] Urban/Developed  
 [Purple] Eucalyptus Woodland  
 [Orange] Ornamental Woodland  
 [Grey Line] Roads

Source: NAIP 2012  
 900 450 0 900 Feet  
 Scale: 1:10,800; 1 inch = 900 feet

**Figure 3**  
**Vegetation Map**



Source: NAIP 2012  
 900 450 0 900 Feet  
 Scale: 10,800; 1 inch = 900 feet

**Figure 4**  
**Bat Habitat Assessment and Use**



- Bat Roosting Areas
- Bat Survey Routes
- Bat Foraging Areas
- ⋯ Project Area
- ⋯ 500-foot Survey Buffer

Source: NAIP 2012

100 50 0 100 Feet

Scale: 1:1,200; 1 inch = 100 feet

**Figure 5**  
**Bat Habitat Assessment and Use**  
**North Survey Detail Area**

## **APPENDIX E**

### **LIST OF SURVEY PERSONNEL AND DATES OF SURVEYS**



**Appendix E**  
**List of Survey Personnel and Dates of Surveys**

Survey Number	Survey Date	Survey Personnel
<b>Rare Plant Surveys/Vegetation Mapping</b>		
1	01/29/13	Fred Sproul, Andrew Fisher
2	03/15/13	Fred Sproul, Erin Bergman
3	03/20/13	Fred Sproul, Erin Bergman
4	06/12/13	Fred Sproul, Lance Woolley
<b>Wetland Delineation</b>		
1	8/2/2014	Brian Felten, Fred Sproul
2	8/9/2014	Brian Felten, Lanika Cervantes
3	9/22/2014	Lanika Cervantes, Bonnie Hendricks
<b>2013 Least Bell's Vireo</b>		
1	4/22/2013	Andrew Fisher
2	5/9/2013	Andrew Fisher
3	5/23/2013	Andrew Fisher
4	6/6/2013	Andrew Fisher
5	6/18/2013	Andrew Fisher
6	7/1/2013	Andrew Fisher
7	7/11/2013	Andrew Fisher
8	7/23/2013	Andrew Fisher
<b>2013 Southwest Willow Flycatcher</b>		
1	5/23/2013	Andrew Fisher
2	6/6/2013	Andrew Fisher
3	6/18/2013	Andrew Fisher
4	7/1/2013	Andrew Fisher
5	7/11/2013	Andrew Fisher
<b>2013 California Gnatcatcher</b>		
1	2/28/2013	Andrew Fisher
2	4/2/2013	Andrew Fisher
3	8/15/2013	Andrew Fisher
<b>2013 Bat</b>		
1	5/29/2013	Matt Rahn, Kelcey Stricker
2	5/30/2013	Matt Rahn, Kelcey Stricker
3	5/31/2013	Matt Rahn, Kelcey Stricker
4	7/1/2013	Matt Rahn, Kelcey Stricker
5	7/2/2013	Matt Rahn, Kelcey Stricker
6	8/29/2013	Matt Rahn, Kelcey Stricker
7	8/30/2013	Matt Rahn, Kelcey Stricker
8	8/31/2013	Matt Rahn, Kelcey Stricker
9	10/18/2013	Matt Rahn, Kelcey Stricker
10	10/19/2013	Matt Rahn, Kelcey Stricker
11	11/1/2013	Matt Rahn, Kelcey Stricker
12	11/2/2013	Matt Rahn, Kelcey Stricker
13	11/3/2013	Matt Rahn, Kelcey Stricker



**APPENDIX F**

**LIST OF PLANT SPECIES  
OBSERVED IN BSA**



**APPENDIX F. PLANT LIST FOR LAKE WOHLFORD DAM REPLACEMENT PROJECT**

<b>Family</b>	<b>Taxon</b>	<b>Common Name</b>	<b>Nativity</b>
<b>ADOXACEAE</b>	<i>Sambucus nigra</i> subsp. <i>caerulea</i>	blue elderberry	NATIVE
<b>AGAVACEAE</b>	<i>Chlorogalum pomeridianum</i>	wavy leaf soap plant	NATIVE
	<i>Hesperoyucca whipplei</i>	chaparral candle	NATIVE
<b>ANACARDIACEAE</b>	<i>Malosma laurina</i>	laurel sumac	NATIVE
	<i>Rhus aromatica</i>	skunk bush	NATIVE
	<i>Toxicodendron diversilobum</i>	western poison oak	NATIVE
<b>APIACEAE</b>	<i>Anthriscus caucalis</i>	bur-chervil	NATURALIZED
	<i>Apiastrum angustifolium</i>	mock parsley	NATIVE
	<i>Bowlesia incana</i>	American bowlesia	NATIVE
	<i>Osmorhiza berteroi</i>	mountain sweet cicely	NATIVE
	<i>Sanicula bipinnatifida</i>	purple sanicle, shoe buttons	NATIVE
	<i>Tauschia arguta</i>	southern tauschia	NATIVE
<b>ARACEAE</b>	<i>Lemna gibba</i>	swollen duckweed	NATIVE
<b>ASPARAGACEAE</b>	<i>Asparagus setaceus</i>	asparagus fern	NATURALIZED
<b>ASTERACEAE</b>	<i>Acourtia microcephala</i>	sacapellote	NATIVE
	<i>Ambrosia psilostachya</i>	western ragweed	NATIVE
	<i>Anthemis cotula</i>	mayweed	NATURALIZED
	<i>Artemisia californica</i>	California sagebrush	NATIVE
	<i>Artemisia douglasiana</i>	mugwort	NATIVE
	<i>Baccharis pilularis</i>	coyote brush	NATIVE
	<i>Baccharis salicifolia</i> subsp. <i>salicifolia</i>	mule fat	NATIVE
	<i>Baccharis sarothroides</i>	broom baccharis	NATIVE
	<i>Brickellia californica</i>	California brickellbush	NATIVE
	<i>Carduus pycnocephalus</i> subsp. <i>pycnocephalus</i>	Italian thistle	NATURALIZED
	<i>Centaurea benedicta</i>	blessed thistle	WAIF
	<i>Centaurea melitensis</i>	toalote	NATURALIZED
	<i>Cirsium occidentale</i> var. <i>californicum</i>	California thistle	NATIVE
	<i>Cirsium undulatum</i>	wavyleaf thistle	NATIVE
	<i>Cirsium vulgare</i>	bull thistle	NATURALIZED
	<i>Corethrogyne filaginifolia</i>	California sand aster	NATIVE
	<i>Cotula australis</i>	Australian cotula	NATURALIZED
	<i>Erigeron bonariensis</i>	flax-leaved horseweed	NATURALIZED
	<i>Erigeron foliosus</i> var. <i>foliosus</i>	leafy daisy, fleabane daisy	NATIVE
	<i>Eriophyllum ambiguum</i>	beautiful woolly sunflower	NATIVE
	<i>Eriophyllum confertiflorum</i>	golden-yarrow, yellow-yarrow	NATIVE
	<i>Gutierrezia sarothrae</i>	matchweed	NATIVE
	<i>Hazardia squarrosa</i> var. <i>grindelioides</i>	saw-tooth goldenbush	NATIVE
	<i>Hedypnois cretica</i>	crete weed	NATURALIZED
	<i>Heterotheca grandiflora</i>	telegraph weed	NATIVE

Family	Taxon	Common Name	Nativity
	<i>Lactuca serriola</i>	prickly lettuce	NATURALIZED
	<i>Logfia gallica</i>	daggerleaf cottonrose	NATURALIZED
	<i>Pseudognaphalium biolettii</i>	bicolor cudweed	NATIVE
	<i>Pseudognaphalium californicum</i>	California everlasting	NATIVE
	<i>Pseudognaphalium microcephalum</i>	white everlasting	NATIVE
	<i>Pseudognaphalium stramineum</i>	cotton batting plant	NATIVE
	<i>Senecio vulgaris</i>	common groundsel	NATURALIZED
	<i>Silybum marianum</i>	milk thistle	NATURALIZED
	<i>Sonchus asper</i> subsp. <i>asper</i>	prickly sow thistle	NATURALIZED
	<i>Sonchus oleraceus</i>	common sow thistle	NATURALIZED
	<i>Stephanomeria virgata</i> subsp. <i>virgata</i>	virgate wreath plant	NATIVE
	<i>Xanthium strumarium</i>	cocklebur	NATIVE
<b>BORAGINACEAE</b>	<i>Amsinckia menziesii</i>	common fiddleneck, small-flowered fiddleneck	NATIVE
	<i>Eriodictyon crassifolium</i> var. <i>crassifolium</i>	thick-leaved yerba santa	NATIVE
	<i>Eucrypta chrysanthemifolia</i>	common eucrypta	NATIVE
	<i>Nemophila menziesii</i>	baby blue-eyes	NATIVE
	<i>Pectocarya linearis</i> subsp. <i>ferocula</i>	narrow-toothed pectocarya	NATIVE
	<i>Pectocarya penicillata</i>	northern pectocarya	NATIVE
	<i>Phacelia cicutaria</i>	caterpillar phacelia	NATIVE
	<i>Phacelia ramosissima</i>	branching phacelia	NATIVE
<b>BRASSICACEAE</b>	<i>Brassica rapa</i>	turnip, field mustard	NATURALIZED
	<i>Capsella bursa-pastoris</i>	shepherd's purse	NATURALIZED
	<i>Cardamine californica</i>	milk maids, tooth wort	NATIVE
	<i>Cardamine hirsuta</i>	hairy buttercross	NATURALIZED
	<i>Hirschfeldia incana</i>	short pod mustard	NATURALIZED
	<i>Raphanus sativus</i>	radish	NATURALIZED
	<i>Rorippa palustris</i> subsp. <i>palustris</i>	Pacific yellow cress	NATIVE
	<i>Sisymbrium altissimum</i>	tumble mustard	NATURALIZED
	<i>Sisymbrium orientale</i>	hare's ear cabbage	NATURALIZED
<b>CACTACEAE</b>	<i>Opuntia ficus-indica</i>	Mission prickly-pear	NATURALIZED
<b>CAPRIFOLIACEAE</b>	<i>Lonicera subspicata</i>	Johnston's honeysuckle	NATIVE
	<i>Symphoricarpos mollis</i>	creeping snowberry, trip vine	NATIVE
<b>CARYOPHYLLACEAE</b>	<i>Polycarpon depressum</i>	California polycarp	NATIVE
	<i>Stellaria media</i>	common chickweed	NATURALIZED
<b>CHENOPODIACEAE</b>	<i>Chenopodium californicum</i>	California goosefoot	NATIVE
	<i>Dysphania ambrosioides</i>	Mexican tea	NATURALIZED
	<i>Salsola tragus</i>	Russian thistle, tumbleweed	NATURALIZED
<b>CONVOLVULACEAE</b>	<i>Cuscuta californica</i> var. <i>californica</i>	chaparral dodder	NATIVE
<b>CRASSULACEAE</b>	<i>Crassula connata</i>	pygmy-weed	NATIVE
	<i>Dudleya edulis</i>	ladies' fingers	NATIVE

Family	Taxon	Common Name	Nativity
	<i>Dudleya pulverulenta</i>	chalk dudleya	NATIVE
CYPERACEAE	<i>Carex spissa</i>	San Diego sedge	NATIVE
	<i>Carex triquetra</i>	trigonus sedge	NATIVE
	<i>Cyperus involucratus</i>	African umbrella plant	NATURALIZED
	<i>Schoenoplectus californicus</i>	southern bulrush	NATIVE
DRYOPTERIDACEAE	<i>Dryopteris arguta</i>	wood fern	NATIVE
ERICACEAE	<i>Arctostaphylos glauca</i>	big berry manzanita	NATIVE
	<i>Xylococcus bicolor</i>	Mission manzanita	NATIVE
EUPHORBIACEAE	<i>Euphorbia serpens</i>	creeping spurge	NATURALIZED
	<i>Euphorbia peplus</i>	petty spurge	NATURALIZED
FABACEAE	<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish clover	NATIVE
	<i>Acmispon glaber</i>	deerweed, California broom	NATIVE
	<i>Acmispon strigosus</i>	Bishop's strigose lotus	NATIVE
	<i>Lathyrus vestitus</i>	birdfoot trefoil	NATIVE
	<i>Lupinus bicolor</i>	miniature lupine	NATIVE
	<i>Lupinus hirsutissimus</i>	stinging lupine	NATIVE
	<i>Lupinus latifolius</i>	Parish's stream lotus	NATIVE
	<i>Lupinus truncatus</i>	collar lupine	NATIVE
	<i>Medicago polymorpha</i>	California burclover	NATURALIZED
	<i>Melilotus albus</i>	white sweetclover	NATURALIZED
	<i>Melilotus indicus</i>	sourclover	NATURALIZED
	<i>Robinia pseudoacacia</i>	black locust	NATURALIZED
	<i>Trifolium hirtum</i>	rose clover	NATURALIZED
	<i>Vicia ludoviciana</i> subsp. <i>ludoviciana</i>	deerpea vetch	NATIVE
FAGACEAE	<i>Quercus xacutidens</i>	Torrey's scrub oak	NATIVE
	<i>Quercus agrifolia</i> var. <i>agrifolia</i>	coast live oak	NATIVE
	<i>Quercus engelmannii</i>	Engelmann oak	NATIVE
GERANIACEAE	<i>Erodium botrys</i>	long beak filaree	NATURALIZED
	<i>Erodium cicutarium</i>	redstem filaree	NATURALIZED
	<i>Erodium moschatum</i>	greenstem filaree	NATURALIZED
	<i>Geranium carolinianum</i>	Carolina geranium	NATIVE
GROSSULARIACEAE	<i>Ribes indecorum</i>	white-flowering currant	NATIVE
IRIDACEAE	<i>Sisyrinchium bellum</i>	western blue-eyed-grass	NATIVE
LAMIACEAE	<i>Lamium amplexicaule</i>	henbit	NATURALIZED
	<i>Marrubium vulgare</i>	horehound	NATURALIZED
	<i>Salvia apiana</i>	white sage	NATIVE
	<i>Salvia columbariae</i>	chia	NATIVE
	<i>Salvia mellifera</i>	black sage	NATIVE
	<i>Stachys ajugoides</i>	ajuga hedge nettle	NATIVE

Family	Taxon	Common Name	Nativity	
LILIACEAE	<i>Calochortus weedii</i>	Weed's mariposa lily	NATIVE	
LYTHRACEAE	<i>Lythrum californicum</i>	California loosestrife	NATIVE	
MALVACEAE	<i>Malacothamnus fasciculatus</i>	chaparral mallow	NATIVE	
	<i>Sidalcea malviflora</i>	checkerbloom, checkermallow	NATIVE	
MONTIACEAE	<i>Calandrinia ciliata</i>	red maids	NATIVE	
	<i>Claytonia parviflora</i>	narrow-leaf miner's lettuce	NATIVE	
	<i>Claytonia perfoliata</i> subsp. <i>perfoliata</i>	miner's lettuce	NATIVE	
MYRSINACEAE	<i>Anagallis arvensis</i>	scarlet pimpernel	NATURALIZED	
NYCTAGINACEAE	<i>Mirabilis laevis</i>	wishbone bush	NATIVE	
OLEACEAE	<i>Fraxinus velutina</i>	velvet ash		
ONAGRACEAE	<i>Clarkia purpurea</i>	farewell to spring	NATIVE	
	<i>Epilobium ciliatum</i>	willow herb	NATIVE	
	<i>Oenothera elata</i>	Hooker's evening primrose	NATIVE	
OROBANCHACEAE	<i>Cordylanthus rigidus</i> subsp. <i>setigerus</i>	bird's beak	NATIVE	
OXALIDACEAE	<i>Oxalis pes-caprae</i>	Bermuda buttercup	NATURALIZED	
PAEONIACEAE	<i>Paeonia californica</i>	California peony	NATIVE	
PAPAVERACEAE	<i>Eschscholzia californica</i>	California poppy	NATIVE	
PHRYMACEAE	<i>Mimulus aurantiacus</i>	monkey flower	NATIVE	
PLANTAGINACEAE	<i>Antirrhinum nuttallianum</i> subsp. <i>subsessile</i>	Nuttall's snapdragon	NATIVE	
	<i>Collinsia heterophylla</i>	Chinese houses	NATIVE	
	<i>Keckiella antirrhinoides</i>	yellow bush penstemon	NATIVE	
	<i>Keckiella cordifolia</i>	heart-leaf penstemon	NATIVE	
	<i>Keckiella ternata</i>	summer bush penstemon	NATIVE	
	<i>Plantago erecta</i>	dot-seed plantain	NATIVE	
	<i>Plantago lanceolata</i>	English plantain	NATURALIZED	
	<i>Plantago major</i>	common plantain	NATURALIZED	
	<i>Veronica anagallis-aquatica</i>	water speedwell	NATURALIZED	
	PLATANACEAE	<i>Platanus racemosa</i>	western sycamore	NATIVE
	POACEAE	<i>Aira caryophyllea</i>	silver hair grass	NATURALIZED
<i>Avena barbata</i>		slender wild oat	NATURALIZED	
<i>Avena fatua</i>		wild oat	NATURALIZED	
<i>Brachypodium distachyon</i>		false brome	NATURALIZED	
<i>Bromus diandrus</i>		ripgut grass	NATURALIZED	
<i>Bromus hordeaceus</i>		soft chess	NATURALIZED	
<i>Bromus madritensis</i> subsp. <i>rubens</i>		red brome	NATURALIZED	
<i>Cortaderia selloana</i>		pampas grass	NATURALIZED	
<i>Cynodon dactylon</i>		Bermuda grass	NATURALIZED	
<i>Ehrharta calycina</i>		perennial veldt grass	NATURALIZED	
<i>Ehrharta erecta</i>		panic veldt grass	NATURALIZED	
	<i>Elymus condensatus</i>	giant wild-rye	NATIVE	

Family	Taxon	Common Name	Nativity
	<i>Elymus glaucus</i>	blue or western wild-rye	NATIVE
	<i>Festuca arundinacea</i>	tall fescue	NATURALIZED
	<i>Festuca microstachys</i>	Gray's fescue	NATIVE
	<i>Festuca myuros</i>	rattail sixweeks grass	NATURALIZED
	<i>Hordeum murinum</i>	wall barley	NATURALIZED
	<i>Lamarckia aurea</i>	golden-top	NATURALIZED
	<i>Melinis repens</i> subsp. <i>repens</i>	natal grass, ruby grass	NATURALIZED
	<i>Muhlenbergia rigens</i>	deer grass	NATIVE
	<i>Paspalum dilatatum</i>	dallis grass	NATURALIZED
	<i>Poa annua</i>	annual blue grass	NATURALIZED
	<i>Schismus barbatus</i>	Mediterranean schismus	NATURALIZED
	<i>Setaria parviflora</i>	knotroot bristle grass	NATIVE
	<i>Stipa lepida</i>	foothill needle grass	NATIVE
	<i>Stipa miliacea</i> var. <i>miliacea</i>	smilo grass	NATURALIZED
	<i>Stipa pulchra</i>	purple needle grass	NATIVE
<b>POLEMONIACEAE</b>	<i>Eriastrum saphirinum</i>	sapphire woolly-star	NATIVE
	<i>Navarretia atractyloides</i>	holly-leaf skunkweed	NATIVE
	<i>Navarretia hamata</i>	hooked skunkweed	NATIVE
<b>POLYGONACEAE</b>	<i>Eriogonum fasciculatum</i>	California buckwheat (group 4)	NATIVE
	<i>Eriogonum gracile</i> var. <i>gracile</i>	slender woolly wild buckwheat	NATIVE
	<i>Pterostegia drymarioides</i>	wood fern	NATIVE
	<i>Rumex crispus</i>	curly dock	NATURALIZED
	<i>Rumex fueginus</i>	golden dock	NATIVE
<b>POLYPODIACEAE</b>	<i>Polypodium californicum</i>	California polypody	NATIVE
<b>PTERIDACEAE</b>	<i>Adiantum jordanii</i>	California maidenhair	NATIVE
	<i>Aspidotis californica</i>	California lace fern	NATIVE
	<i>Pellaea andromedifolia</i>	coffee fern	NATIVE
	<i>Pellaea mucronata</i> var. <i>mucronata</i>	bird's foot fern	NATIVE
	<i>Pentagramma triangularis</i>	goldback fern	NATIVE
<b>RANUNCULACEAE</b>	<i>Clematis pauciflora</i>	southern California clematis, few-flowered clematis	NATIVE
	<i>Thalictrum fendleri</i> var. <i>polycarpum</i>	meadow rue	NATIVE
<b>RHAMNACEAE</b>	<i>Ceanothus crassifolius</i>	hoaryleaf ceanothus	NATIVE
	<i>Ceanothus leucodermis</i>	chaparral whitethorn	NATIVE
	<i>Ceanothus tomentosus</i>	chaparral whitethorn	NATIVE
	<i>Rhamnus ilicifolia</i>	hollyleaf redberry	NATIVE
<b>ROSACEAE</b>	<i>Adenostoma fasciculatum</i>	chamise, greasewood	NATIVE
	<i>Aphanes occidentalis</i>	western lady's mantle	NATIVE
	<i>Cercocarpus betuloides</i> var. <i>betuloides</i>	birchleaf mountain mahogany	NATIVE
	<i>Drymocallis glandulosa</i>	sticky cinquefoil	NATIVE
	<i>Heteromeles arbutifolia</i>	toyon	NATIVE

<b>Family</b>	<b>Taxon</b>	<b>Common Name</b>	<b>Nativity</b>
	<i>Prunus ilicifolia</i>	holly leaf cherry	NATIVE
	<i>Rosa californica</i>	California rose	NATIVE
	<i>Rubus armeniacus</i>	Himalayan blackberry	NATURALIZED
	<i>Rubus ursinus</i>	California blackberry	NATIVE
<b>RUBIACEAE</b>	<i>Galium angustifolium</i>	narrowly leaved bedstraw	NATIVE
	<i>Galium aparine</i>	goose grass	NATIVE
<b>SALICACEAE</b>	<i>Populus fremontii</i> subsp. <i>fremontii</i>	Alamo or Fremont cottonwood	NATIVE
	<i>Salix exigua</i>	sandbar willow	NATIVE
	<i>Salix gooddingii</i>	Goodding's black willow	NATIVE
	<i>Salix lasiolepis</i>	arroyo willow	NATIVE
<b>SAXIFRAGACEAE</b>	<i>Jepsonia parryi</i>	coast jepsonia	NATIVE
	<i>Micranthes californica</i>	California saxifrage	NATIVE
<b>SCROPHULARIACEAE</b>	<i>Scrophularia californica</i>	California figwort	NATIVE
	<i>Verbascum thapsus</i>	woolly mullein	NATURALIZED
<b>SOLANACEAE</b>	<i>Datura wrightii</i>	western jimson weed	NATIVE
	<i>Nicotiana glauca</i>	tree tobacco	NATURALIZED
	<i>Solanum parishii</i>	Parish's nightshade	NATIVE
<b>THEMIDACEAE</b>	<i>Bloomeria crocea</i>	common goldenstar	NATIVE
<b>TYPHACEAE</b>	<i>Typha domingensis</i>	southern cattail	NATIVE
<b>URTICACEAE</b>	<i>Hesperocnide tenella</i>	western nettle	NATIVE
	<i>Urtica dioica</i> subsp. <i>holosericea</i>	hoary nettle	NATIVE
	<i>Urtica urens</i>	dwarf nettle	NATURALIZED
<b>VERBENACEAE</b>	<i>Phyla nodiflora</i>	garden lippia	NATIVE
	<i>Verbena bracteata</i>	bract vervain	NATIVE
<b>VISCACEAE</b>	<i>Phoradendron leucarpum</i> subsp. <i>macrophyllum</i>	big leaf mistletoe	NATIVE
<b>ZYGOPHYLLACEAE</b>	<i>Tribulus terrestris</i>	puncture vine	NATURALIZED

**APPENDIX G**

**LIST OF WILDLIFE SPECIES  
OBSERVED IN BSA**



## APPENDIX G – WILDLIFE SPECIES DETECTED DURING 2013 SURVEYS

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened/Species of Special Concern)*
<b>Invertebrates</b>					
acmon blue	<i>Icaricia acmon acmon</i>	Lepidoptera	Lycaenidae	None	None
perplexing (bramble) hairstreak	<i>Callophrys dumetorum</i>	Lepidoptera	Lycaenidae	None	None
marine blue	<i>Leptotes marina</i>	Lepidoptera	Lycaenidae	None	None
southern (silvery) blue	<i>Glaucopsyche lygdamus australis</i>	Lepidoptera	Lycaenidae	None	None
pale swallowtail	<i>Papilio eurymedon</i>	Lepidoptera	Papilionidae	None	None
western tiger swallowtail	<i>Papilio rutulus</i>	Lepidoptera	Papilionidae	None	None
common buckeye	<i>Junonia coenia</i>	Lepidoptera	Nymphalidae	None	None
red admiral	<i>Vanessa atalanta</i>	Lepidoptera	Nymphalidae	None	None
Sara orangetip	<i>Anthocharis sara sara</i>	Lepidoptera	Pieridae	None	None
spring (California) white	<i>Pontia sisymbrii</i>	Lepidoptera	Pieridae	None	None
<b>Reptiles &amp; Amphibians</b>					
bullfrog	<i>Rana catesbeiana</i>	Anura	Ranidae	None	None
coastal whiptail	<i>Aspidoscelis tigris stejnegeri</i>	Lacertilia	Teiidae	None	None
southern alligator lizard	<i>Elgaria multicarinata</i>	Squamata	Anguidae	None	None
western fence lizard	<i>Sceloporus occidentalis</i>	Squamata	Phrynosomatidae	None	None
granite spiny lizard	<i>Sceloporus orcutti</i>	Squamata	Phrynosomatidae	None	None
side-blotched lizard	<i>Uta stansburiana</i>	Squamata	Phrynosomatidae	None	None
two-striped garter snake	<i>Thamnophis hammondi</i>	Serpentes	Natricidae	None	Species of Special Concern
red-necked slider	<i>Trachemys scripta</i>	Testudines	Emydidae	None	None
<b>Avian</b>					
red-tailed hawk	<i>Buteo jamaicensis</i>	Accipitriformes	Accipitridae	None	None
red-shouldered hawk	<i>Buteo lineatus</i>	Accipitriformes	Accipitridae	None	None
Cooper's hawk	<i>Accipiter cooperii</i>	Accipitriformes	Accipitridae	None	None (Watch List)

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bald eagle	<i>Haliaeetus leucocephalus</i>	Accipitriformes	Accipitridae	Delisted	Endangered
turkey vulture	<i>Cathartes aura</i>	Accipitriformes	Cathartidae	None	None
northern shoveler	<i>Anas clypeata</i>	Anseriformes	Anatidae	None	None
mallard	<i>Anas platyrhynchos</i>	Anseriformes	Anatidae	None	None
gadwall	<i>Anas strepera</i>	Anseriformes	Anatidae	None	None
bufflehead	<i>Bucephala albeola</i>	Anseriformes	Anatidae	None	None
common merganser	<i>Mergus merganser</i>	Anseriformes	Anatidae	None	None
ruddy duck	<i>Oxyura jamaicensis</i>	Anseriformes	Anatidae	None	None
black-chinned hummingbird	<i>Archilochus alexandri</i>	Apodiformes	Trochilidae	None	None
Anna's hummingbird	<i>Calypte anna</i>	Apodiformes	Trochilidae	None	None
Costa's hummingbird	<i>Calypte costae</i>	Apodiformes	Trochilidae	None	None
rufous hummingbird	<i>Selasphorus rufus</i>	Apodiformes	Trochilidae	None	None
killdeer	<i>Charadrius vociferus</i>	Charadriiformes	Charadriidae	None	None
Caspian tern	<i>Hydroprogne caspia</i>	Charadriiformes	Laridae	None	None
Forster's tern	<i>Sterna forsteri</i>	Charadriiformes	Laridae	None	None
black-necked stilt	<i>Himantopus mexicanus</i>	Charadriiformes	Recurvirostridae	None	None
spotted sandpiper	<i>Actitis macularius</i>	Charadriiformes	Scolopacidae	None	None
western sandpiper	<i>Calidris mauri</i>	Charadriiformes	Scolopacidae	None	None
least sandpiper	<i>Calidris minutilla</i>	Charadriiformes	Scolopacidae	None	None
mourning dove	<i>Zenaidura macroura</i>	Columbiformes	Columbidae	None	None
belted kingfisher	<i>Megasceryle alcyon</i>	Coraciiformes	Alcedinidae	None	None
greater roadrunner	<i>Geococcyx californianus</i>	Cuculiformes	Cuculidae	None	None
American kestrel	<i>Falco sparverius</i>	Falconiformes	Falconidae	None	None
California quail	<i>Callipepla californica</i>	Galliformes	Odontophoridae	None	None
American coot	<i>Fulica americana</i>	Gruiformes	Rallidae	None	None
bushtit	<i>Psaltriparus minimus</i>	Passeriformes	Aegithalidae	None	None

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cedar waxwing	<i>Bombycilla cedrorum</i>	Passeriformes	Bombycillidae	None	None
blue grosbeak	<i>Passerina caerulea</i>	Passeriformes	Cardinalidae	None	None
black-headed grosbeak	<i>Pheucticus melanocephalus</i>	Passeriformes	Cardinalidae	None	None
western scrub-jay	<i>Aphelocoma californica</i>	Passeriformes	Corvidae	None	None
American crow	<i>Corvus brachyrhynchos</i>	Passeriformes	Corvidae	None	None
common raven	<i>Corvus corax</i>	Passeriformes	Corvidae	None	None
rufous-crowned sparrow	<i>Aimophila ruficeps</i>	Passeriformes	Emberizidae	None	None (Watch List)
song sparrow	<i>Melospiza melodia</i>	Passeriformes	Emberizidae	None	None
California towhee	<i>Melospiza crissalis</i>	Passeriformes	Emberizidae	None	None
fox sparrow	<i>Passerella iliaca</i>	Passeriformes	Emberizidae	None	None
spotted towhee	<i>Pipilo maculatus</i>	Passeriformes	Emberizidae	None	None
golden-crowned sparrow	<i>Zonotrichia atricapilla</i>	Passeriformes	Emberizidae	None	None
white-crowned sparrow	<i>Zonotrichia leucophrys</i>	Passeriformes	Emberizidae	None	None
Lawrence's goldfinch	<i>Spinus lawrencei</i>	Passeriformes	Fringillidae	None	None
house finch	<i>Haemorhous mexicanus</i>	Passeriformes	Fringillidae	None	None
lesser goldfinch	<i>Spinus psaltria</i>	Passeriformes	Fringillidae	None	None
American goldfinch	<i>Spinus tristis</i>	Passeriformes	Fringillidae	None	None
barn swallow	<i>Hirundo rustica</i>	Passeriformes	Hirundinidae	None	None
cliff swallow	<i>Petrochelidon pyrrhonota</i>	Passeriformes	Hirundinidae	None	None
northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	Passeriformes	Hirundinidae	None	None
tree swallow	<i>Tachycineta bicolor</i>	Passeriformes	Hirundinidae	None	None
violet-green swallow	<i>Tachycineta thalassina</i>	Passeriformes	Hirundinidae	None	None
red-winged blackbird	<i>Agelaius phoeniceus</i>	Passeriformes	Icteridae	None	None
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	Passeriformes	Icteridae	None	None

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Bullock's oriole	<i>Icterus bullockii</i>	Passeriformes	Icteridae	None	None
brown-headed cowbird	<i>Molothrus ater</i>	Passeriformes	Icteridae	None	None
great-tailed grackle	<i>Quiscalus mexicanus</i>	Passeriformes	Icteridae	None	None
northern mockingbird	<i>Mimus polyglottos</i>	Passeriformes	Mimidae	None	None
California thrasher	<i>Toxostoma redivivum</i>	Passeriformes	Mimidae	None	None
oak titmouse	<i>Baeolophus inornatus</i>	Passeriformes	Paridae	None	None
Wilson's warbler	<i>Cardellina pusilla</i>	Passeriformes	Parulidae	None	None
common yellowthroat	<i>Geothlypis trichas</i>	Passeriformes	Parulidae	None	None
yellow-breasted chat	<i>Icteria virens</i>	Passeriformes	Parulidae	None	Species of Special Concern
orange-crowned warbler	<i>Oreothlypis celata</i>	Passeriformes	Parulidae	None	None
yellow-rumped warbler	<i>Setophaga coronata</i>	Passeriformes	Parulidae	None	None
yellow warbler	<i>Setophaga petechia brewsteri</i>	Passeriformes	Parulidae	None	Species of Special Concern
Townsend's warbler	<i>Setophaga townsendi</i>	Passeriformes	Parulidae	None	None
blue-gray gnatcatcher	<i>Polioptila caerulea</i>	Passeriformes	Poliptilidae	None	None
phainopepla	<i>Phainopepla nitens</i>	Passeriformes	Ptilonotidae	None	None
ruby-crowned kinglet	<i>Regulus calendula</i>	Passeriformes	Regulidae	None	None
white-breasted nuthatch	<i>Sitta carolinensis</i>	Passeriformes	Sittidae	None	None
European starling	<i>Sturnus vulgaris</i>	Passeriformes	Sturnidae	None	None
wren	<i>Chamaea fasciata</i>	Passeriformes	Sylviidae	None	None
canyon wren	<i>Catherpes mexicanus</i>	Passeriformes	Troglodytidae	None	None
Bewick's wren	<i>Thryomanes bewickii</i>	Passeriformes	Troglodytidae	None	None
house wren	<i>Troglodytes aedon</i>	Passeriformes	Troglodytidae	None	None
hermit thrush	<i>Catharus guttatus</i>	Passeriformes	Turdidae	None	None
western bluebird	<i>Sialia mexicana</i>	Passeriformes	Turdidae	None	None
Pacific-slope flycatcher	<i>Empidonax difficilis</i>	Passeriformes	Tyrannidae	None	None
ash-throated flycatcher	<i>Myiarchus cinerascens</i>	Passeriformes	Tyrannidae	None	None
black phoebe	<i>Sayornis nigricans</i>	Passeriformes	Tyrannidae	None	None

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Say's phoebe	<i>Sayornis saya</i>	Passeriformes	Tyrannidae	None	None
Cassin's kingbird	<i>Tyrannus vociferans</i>	Passeriformes	Tyrannidae	None	None
western kingbird	<i>Tyrannus verticalis</i>	Passeriformes	Tyrannidae	None	None
warbling vireo	<i>Vireo gilvus</i>	Passeriformes	Vireonidae	None	None
Hutton's vireo	<i>Vireo huttoni</i>	Passeriformes	Vireonidae	None	None
great egret	<i>Ardea alba</i>	Pelecaniformes	Ardeidae	None	None
great blue heron	<i>Ardea herodias</i>	Pelecaniformes	Ardeidae	None	None
snowy egret	<i>Egretta thula</i>	Pelecaniformes	Ardeidae	None	None
black-crowned night heron	<i>Nycticorax nycticorax</i>	Pelecaniformes	Ardeidae	None	None
American white pelican	<i>Pelecanus erythrorhynchos</i>	Pelecaniformes	Pelecanidae	None	None
northern flicker	<i>Colaptes auratus</i>	Piciformes	Picidae	None	None
acorn woodpecker	<i>Melanerpes formicivorus</i>	Piciformes	Picidae	None	None
Nuttall's woodpecker	<i>Picoides nuttallii</i>	Piciformes	Picidae	None	None
downy woodpecker	<i>Picoides pubescens</i>	Piciformes	Picidae	None	None
hairy woodpecker	<i>Picoides villosus</i>	Piciformes	Picidae	None	None
Clark's grebe	<i>Aechmophorus clarkii</i>	Podicipediformes	Podicipedidae	None	None
western grebe	<i>Aechmophorus occidentalis</i>	Podicipediformes	Podicipedidae	None	None
eared grebe	<i>Podiceps nigricollis</i>	Podicipediformes	Podicipedidae	None	None
pieb-billed grebe	<i>Podilymbus podiceps</i>	Podicipediformes	Podicipedidae	None	None
barn owl	<i>Tyto alba</i>	Strigiformes	Tytonidae	None	None
double-crested cormorant	<i>Phalacrocorax auritus</i>	Suliformes	Phalacrocoracidae	None	None
<b>Mammals</b>					
mule deer	<i>Odocoileus hemionus</i>	Artiodactyla	Cervidae	None	None
coyote	<i>Canis latrans</i>	Carnivora	Canidae	None	None
striped skunk	<i>Mephitis mephitis</i>	Carnivora	Mephitidae	None	None

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raccoon	<i>Procyon lotor</i>	Carnivora	Procyonidae	None	None
Virginia opossum	<i>Didelphis virginiana</i>	Didelphimorphia	Didelphidae	None	None
desert cottontail	<i>Sylvilagus audubonii</i>	Lagomorpha	Leporidae	None	None
California ground squirrel	<i>Spermophilus beecheyi</i>	Rodentia	Sciuridae	None	None

\* Sensitivity status taken from CDFW 2013