Baseline Biodiversity Report

Bottle Peak Preserve

County of San Diego, Department of Parks and Recreation

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May 1, 2015

BIOLOGICAL DIVERSITY BASELINE REPORT FOR THE BOTTLE PEAK PROPERTY COUNTY OF SAN DIEGO DEPARTMENT OF PARKS AND RECREATION

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EXECUTIVE SUMMARY

In 2013, the County of San Diego (County) Department of Parks and Recreation (DPR) acquired the approximately 418.39-acre Bottle Peak Property (Property). The Property is located within the Draft North County Multiple Species Conservation Plan (North County Plan) preserve system and consists primarily of southern mixed chaparral habitat, with coast live oak habitat on the northern, northeastern, and eastern boundaries of the Property (County of San Diego 2009). The majority of the habitat is considered high to very high quality, although some areas within the Property have been impacted by human activities (e.g., unauthorized trails). DPR proposes to manage the Property in accordance with a Resource Management Plan, including Area-Specific Management Directives. This Resource Management Plan will be prepared based on the survey information contained within this report.

AECOM biologists performed the following biological inventory surveys within the Property from spring through winter 2014: habitat mapping survey, butterfly surveys, herpetological surveys, avian surveys, bat surveys, small mammal surveys, and medium and large mammal surveys. Due to drought conditions throughout the County in spring 2014, sensitive/rare plant surveys and invasive/nonnative plant surveys were conducted in spring 2015.

Habitat on the Property was mapped in accordance with the County's Habitat Identification Guidelines (County of San Diego 2010) using both the Oberbauer-modified Holland Code (Oberbauer et al. 2008) and the Vegetation Classification Manual (Sproul et al. 2011). Based on the habitat identification guidelines, 14 plant alliances, associations, or semi-natural stands were identified within the Property: Mediterranean California naturalized annual and perennial grassland semi-natural stands, *Brassica* (*nigra*) and other mustards semi-natural stands, woolly-leaved ceanothus association or *Ceanothus tomentosus* association, chamise/mission manzanita/woolly-leaved ceanothus association, California buckwheat alliance, laurel sumac alliance, black sage/California buckwheat association, black sage/California buckwheat association, California sagebrush/black sage association, coast live oak/California sagebrush association, coast live oak/scrub oak association, coast live oak/poison oak/grass association, Engelmann oak/coast live oak/poison oak/grass association, and disturbed habitat. A total of 162 plant species were recorded within the Property during field surveys, including one special-status plant species, Engelmann oak (*Quercus engelmannii*). Due to a very dry rainfall season in 2014, additional rare plant surveys were performed in early spring 2015. A total of 115 wildlife species were observed or detected within the Property during surveys, including 24 invertebrates, 15 reptiles, 55 birds, and 21 mammals. Fourteen special-status wildlife species were observed or detected within the Property. Four of the detected special-status wildlife species are proposed to be covered under the North County Plan.

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1.0 INTRODUCTION

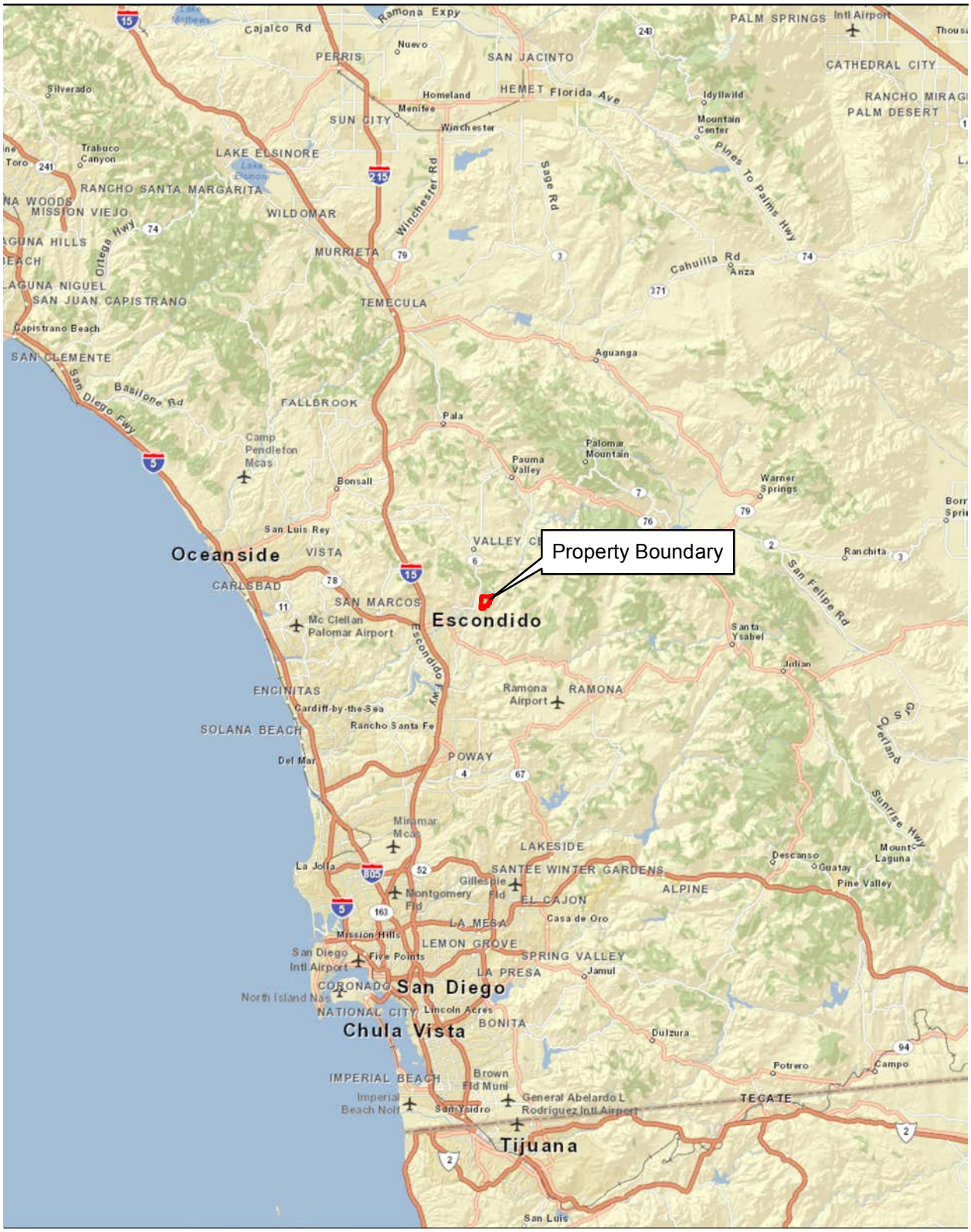
1.1 PURPOSE OF THE REPORT

Baseline biological resources surveys were conducted on the Bottle Peak Preserve Property (Property) for the County of San Diego (County) Department of Parks and Recreation (DPR) (Figures 1 and 2). The purpose of these surveys was to identify and map biological resources that exist on the Property and to map their locations. This information will be used to generate a Resource Management Plan (RMP). The RMP will include area-specific management directives (ASMDs) that outline the requirements for managing and monitoring the resources on the Property.

1.2 MSCP CONTEXT

This Property is located in the North County Plan Planning Area (Figure 3). It is within the western extension of a large area of habitat considered "high habitat value" under the County Habitat Evaluation Model. The North County Plan is currently in draft form and has not been adopted by the County, U.S. Fish and Wildlife Service (USFWS), or California Department of Fish and Wildlife (CDFW). (USFWS and CDFW collectively referred to as the "Wildlife Agencies" herein.) Although the North County Plan has not yet been approved by the County or the Wildlife Agencies, the Property has been proposed as part of a potential Pre-Approved Mitigation Area, and has been preserved as a result of those habitat values. The Property is preserved based on the values of habitat contained within, and its connectivity to the portion of the North County Plan Planning Area that extends to the east.

The City of Escondido (City) owns the land to the west of the Property. The City has designated this land as a Focused Planning Area, with a conservation level of less than 90%, on the Draft Multiple Habitat Conservation Plan (MHCP) Subarea Plan for the City. The MHCP labels designated lands by conservation level, and the conservation level is the expected proportion of the currently mapped natural area to be ultimately conserved within a specific area. Land to the south and east of the Property is primarily designated as Rural Lands (RL) 40, defined as one dwelling unit per 40 acres. Zoning on the Property and in the surroundings is General Agriculture Use Regulations (A72). These areas have low density designations that are compatible with goals for species conservation, preservation of blocks of habitat, and connectivity to habitat to the east.



Source: ESRI

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Scale: 1 = 760,320; 1 inch = 12 miles

Figure 1
Vicinity Map

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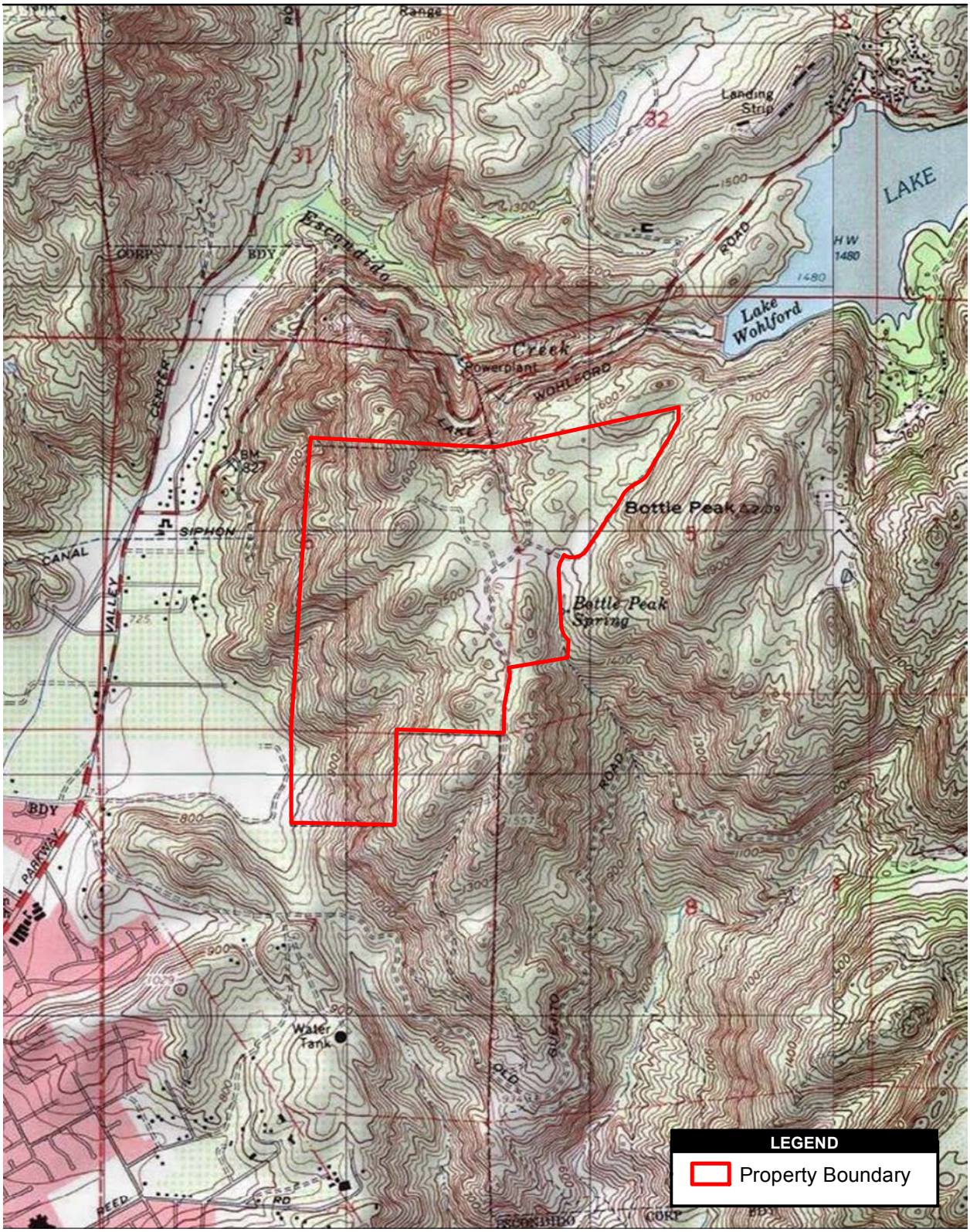

Source: USGS 7.5' Topographic Quadrangle Valley Center, CA 1978, Rodriguez Mountain, CA 1985

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Scale: 1 = 24,000; 1 inch = 2,000 feet

Figure 2
Property Location

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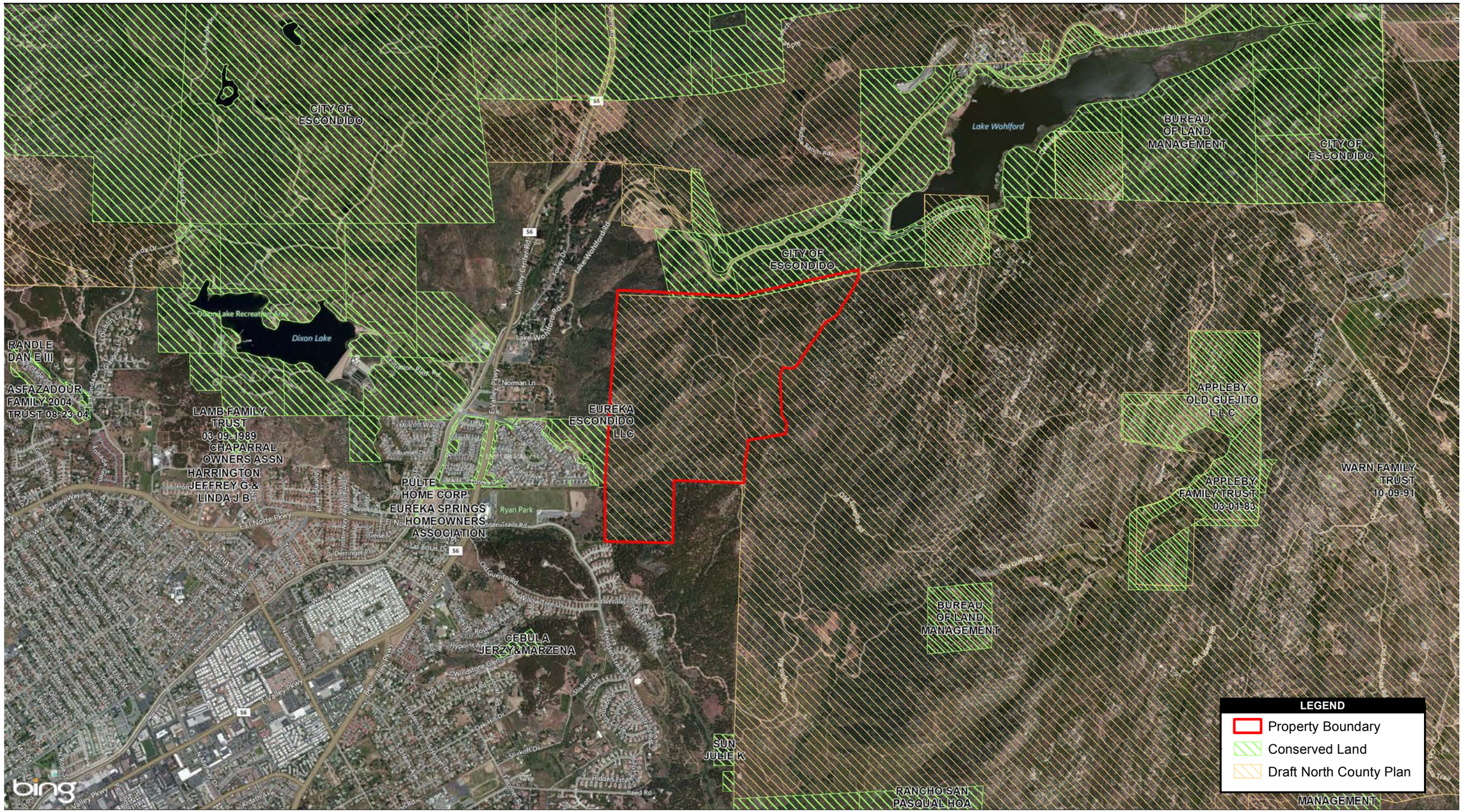

Source: SANGIS 2014; ESRI 2014; BING 2014

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Scale: 1:12,000; 1 inch = 1,000 feet

Figure 3
North County Plan Designations and Conserved Lands

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2.0 STUDY AREA DESCRIPTION

2.1 PROJECT LOCATION

The approximately 418.39[1]-acre Property is located in the north-central portion of the unincorporated area of the County, approximately 5.5 miles east of Interstate 15 (Figure 1). It is northeast of Escondido and adjacent to the City boundary, and less than 0.25 mile southwest of Lake Wohlford. Lake Wohlford Road traverses the slopes to the north of the Property, and Valley Center Road travels in a north/south direction west and off-site of the Property. The Property is located in the Valley Center Quadrangle and within Range 1 West and Township 12 South in portions of sections 5, 6, 7, and 8. The Property encompasses the following Assessor's Parcel Numbers: 240-110-03; 240-340-06; 240-350-06, -07; 240-360-01, -02, -03, -04, -05, -06, -07; 240-370-01, -02, -03, -04, -05; and 240-380-01, -02, -03.

2.2 GEOGRAPHICAL SETTING

The Property is located on the western portion of a block of largely undeveloped land that includes Rancho Guejito, the Black Mountain area of the Cleveland National Forest, and Mesa Grande. The Property is included in the proposed draft North County Plan as an area with high habitat value.

The Property consists of a small, shallow valley adjacent to the west slope of Bottle Peak, which is approximately 0.25 mile to the east of the Property. Agricultural development occurs south of the Property, and residential development at the base of the slopes occurs west of the Property. A large aggregate quarry, excavating material from steeply sloping land, is located next to Lake Wohlford Road to the north of the Property. The Property was previously divided into 19 parcels, and a series of dirt access roads were scraped into the Property prior to the mid-1990s. Approximately 0.5 acre of cleared lands exists in one of the parcels on the Property. Other locations have been cleared in the past, including a fire break on the northeast edge of the Property along a dirt road that defines the Property's boundary. Since the initial clearing of these areas, the vegetation has generally recovered, and the cleared areas are less prominent. A small (1 acre) pond is located in the northeastern part of the Property. The pond is dry for the majority of the year, but has been filled in the past following heavy rainfall seasons.

A portion of the Property is steeply sloping, especially along the western edge. Elevations range from 763 feet on the southwestern edge to 1,000 feet on the northwestern corner, and to 1,600

[1] Acreage was determined by totaling the vegetation classification acres from a GIS base layer for the Property.

feet in the northeast corner. The central portion is roughly 1,500 feet in elevation, and the highest point at 1,726 feet is located in the northwest corner, rising steeply from the 1,000-foot-elevation Property line. On the western rim of the Property are three rocky peaks: Tombstone Peak, Old Rocky Peak, and Devil's Anvil Peak. The peaks range between 1,580 feet (Devil's Anvil Peak) and 1,725 feet in elevation (Tombstone Peak).

2.3 GEOLOGY AND SOILS

The Property contains three soil types belonging to three soil series (Figure 4). All of the soils mapped on the Property are derived from granitic-base rock. In addition to the three soil series described below, it is noteworthy that Las Posas soil, derived from gabbro rock formations, occurs approximately 0.25 mile to the north of the Property. Las Posas soils are known to harbor a series of unusual plants due to the high concentrations of magnesium and iron within them, unlike the granitic rock soils occurring within the Property.

Cieneba Series

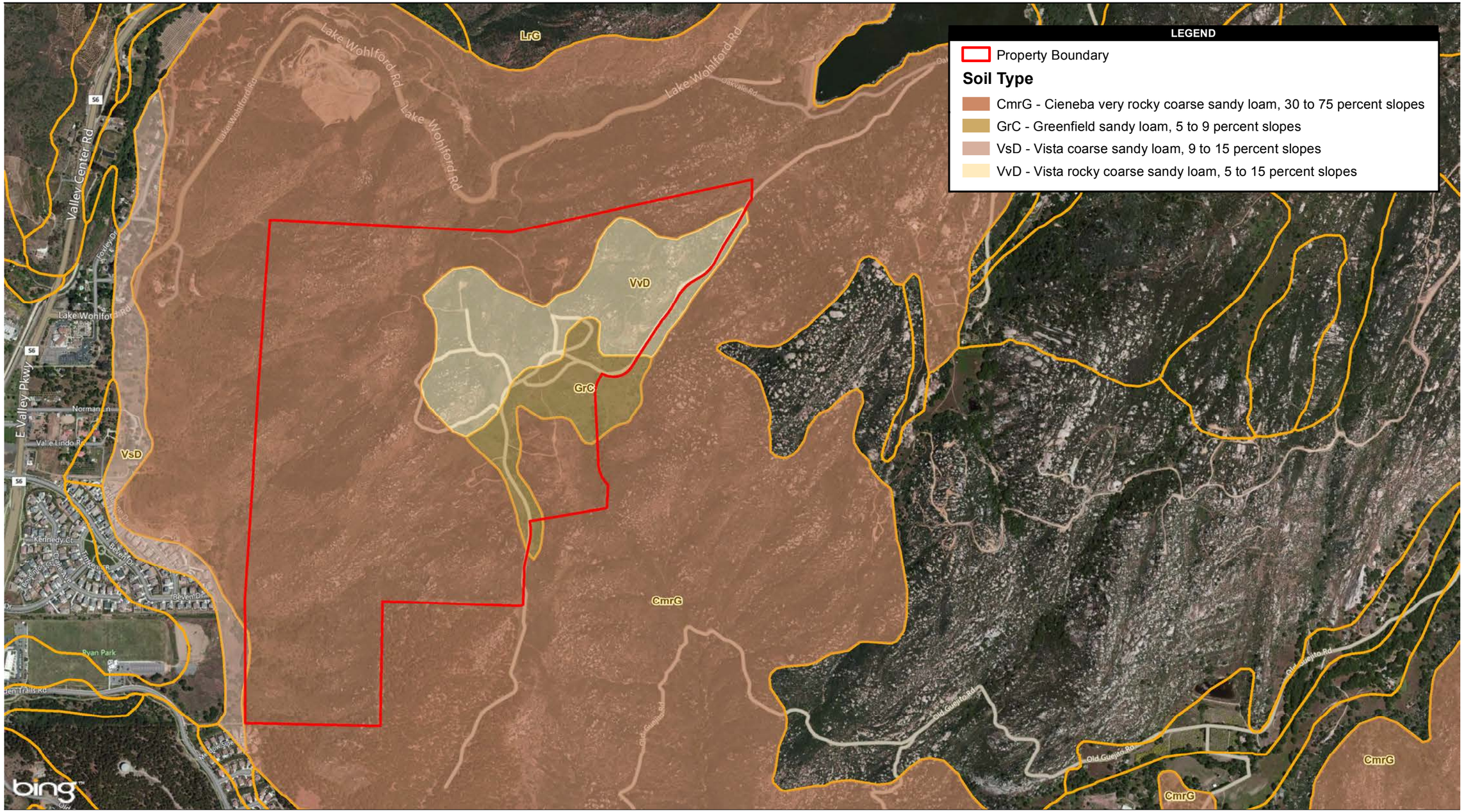
Cieneba soils make up the majority of the soils on the Property, with roughly 65% of the Property covered with the Cieneba very rocky coarse sandy loam, 30 to 75% slopes. According to Bowman 1973, this soil is "steep to very steep, has rock outcrops on about 20% of the surface and very large granodioritic boulders on about 30%, and is only 5 to 15 inches deep over hard granodiorite. Runoff is rapid to very rapid, and the erosion hazard is high to very high. The available water holding capacity is 1 inch to 1.5 inches."

Vista Series

Vista series soils cover roughly 20% of the Property. They consist of well-drained, moderately deep and deep coarse sandy loams derived from granodiorite or quartz diorite. According to Bowman (1973), these soils are on upland and have slopes of 5 to 65%. The elevation ranges from 300 to 2,500 feet. The mean annual precipitation is between 14 and 18 inches, and the mean annual air temperature is between 60 and 62 degrees Fahrenheit (°F). Vista rocky coarse sandy loam, 5 to 15% slopes, is moderately sloping to strongly sloping, and is 20 to 36 inches deep over weathered rock. Approximately 10% of the Property is covered with exposed bedrock, and approximately 10% is covered with large boulders. The available water-holding capacity is 2 to 4.5 inches. Runoff is medium to rapid, and the erosion hazard moderate to high.

Greenfield Series

Greenfield series soils cover roughly 15% of the Property. Greenfield soils consist of well-drained, very deep sandy loams derived from granitic alluvium. These soils are on alluvial fans



Source: ESRI 2014; BING 2014; SSURGO 2012

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Figure 4
Soils Map

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and alluvial plains and have slopes of 0 to 15%. The elevation ranges from 400 to 800 feet for these soils. The mean annual precipitation is between 14 and 18 inches, and the mean annual air temperature is between 60 and 62°F. Greenfield sandy loam, 5 to 9% slopes, is moderately sloping. Runoff is slow to medium, and the erosion hazard is slight to moderate.

2.4 CLIMATE

The climate of the Property is influenced by the Pacific High Pressure System from the Pacific Ocean. The precipitation from this system typically occurs in winter through a series of sporadic storms that progress southward from the north. The yearly variation from this system is high, with numerous below-normal rainfall seasons. Summers are generally warm and dry, with some coastal low-cloud influence occurring in the early part of the day. The closest consistent weather station to the Property is the Escondido station (Western Regional Climate Center 2014). Average annual precipitation at Escondido is 14.93 inches of rain, with the greatest amount, 3.46 inches, falling in February (Table 1). July and August are the driest months, with only 0.08 inch of rain recorded. The summer months, from June through September, are generally dry and receive less than 0.25 inch of rain. The Property is located at a higher elevation than the rest of Escondido, and potentially receives 1 or 2 inches more than the average rainfall in Escondido. The average high temperature for August is 88.6°F, but extreme temperatures associated with Santa Ana wind events can occur in September and October. Santa Ana wind events drop humidity to below 10%, and are the periods when wildfires typically occur.

Table 1. Rainfall Data for Escondido 2, California Weather Station (042863)

Period of Record: May 1, 1979 through March 27, 2013													
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Average Maximum Temperature (°F)	69.0	69.0	70.3	74.5	76.6	82.0	87.2	88.6	86.6	79.9	73.3	68.9	77.2
Average Minimum Temperature (°F)	43.1	44.4	47.1	50.4	54.6	58.1	62.1	63.3	61.4	55.2	46.6	41.8	52.3
Average Total Precipitation (inches)	3.00	3.46	2.71	1.14	0.26	0.12	0.08	0.08	0.20	0.74	1.33	1.82	14.93

2.5 HYDROLOGY

The Property is located in a saddle between two watersheds, San Luis Rey – Escondido and San Diego (Figure 5). The northern and western portions of the Property drain into Escondido Creek, which flows through the City of Escondido and enters the ocean through San Elijo Lagoon. The headwaters of Escondido Creek are located in Bear Valley, just above Lake Wohlford (Escondido Creek Conservancy 2014). Lake Wohlford is the largest storage reservoir

on the creek, and is located approximately 0.25 mile northeast of the Property. Escondido Creek is channelized through approximately 6.25 miles of the City, with a portion of it contained underground beneath a major shopping center. The southern portion of the Property drains into a tributary to the San Dieguito River through San Pasqual Valley, upstream from Lake Hodges. Downstream from Lake Hodges, the San Dieguito River flows into the San Dieguito Lagoon at Del Mar and into the Pacific Ocean. Lake Hodges can hold up to 30,251 acre feet of water, and serves the San Dieguito Water and Santa Fe Irrigation Districts, and the City of San Diego. Lake Hodges is reliant solely on rainfall runoff; therefore, water levels at the lake are highly variable.

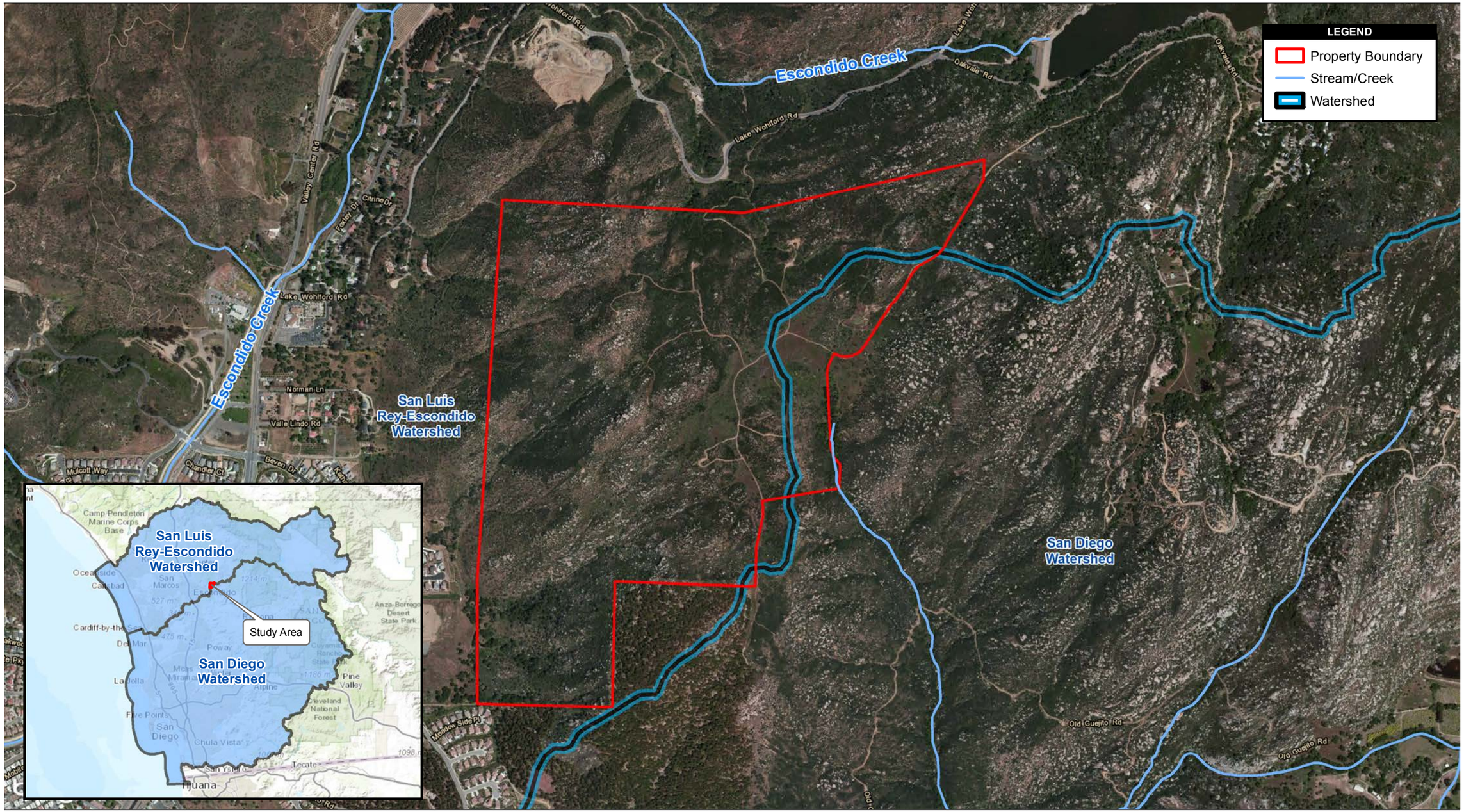
Flood periods occur occasionally in this region. The greatest flood on record occurred in January 1916, during which more than 19 inches of rain fell in the City for the month (McGlashan and Ebert 1918). Other floods occurred in 1927, and more recently in 1980. The January 1916 flood is generally considered to be a 100-year flood, but the channel of Escondido Creek through Escondido was apparently designed to carry a 500-year level flood. In 1980, the San Dieguito River exhibited the largest spill since 1927 (Chin et al. 1991). The Property provides flow for both watersheds during flood periods.

2.6 FIRE HISTORY

Based on historical fire data from the California Department of Forestry and Fire Protection and SANGIS.org, the Property has been affected by several different wildfires (Table 2 and Figure 6). The most recent fire to burn the Property was the Paradise Fire of October 2003, which burned the entire Property except for approximately 30 acres on the western slope. The Guejiuto fire of 1993 burned approximately 39.88 acres of the Property. Two large fires, the Oakvale Lodge Fire of 1955 and the Bottle Peak Fire of 1989, burned approximately 77% and 41.5% of the Property, respectively.

Table 2. Property Fire Interval Data

Fire Year	Fire Name	Interval (years)	Acreage Burned	Percent of Preserve Burned
1955	Oakvale Lodge	--	293.35	77.08%
1962	Bear Ridge	7	14.08	3.7%
1989	Bottle Peak	27	157.98	41.51%
1993	Guejito	4	39.88	10.48%
2003	Paradise	10	380.09	99.87%



Source: ESRI 2014; BING 2014; CALHydro 2012; USGS 2012

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Scale: 1:12,000; 1 inch = 1,000 feet

Figure 5
Hydrology Map

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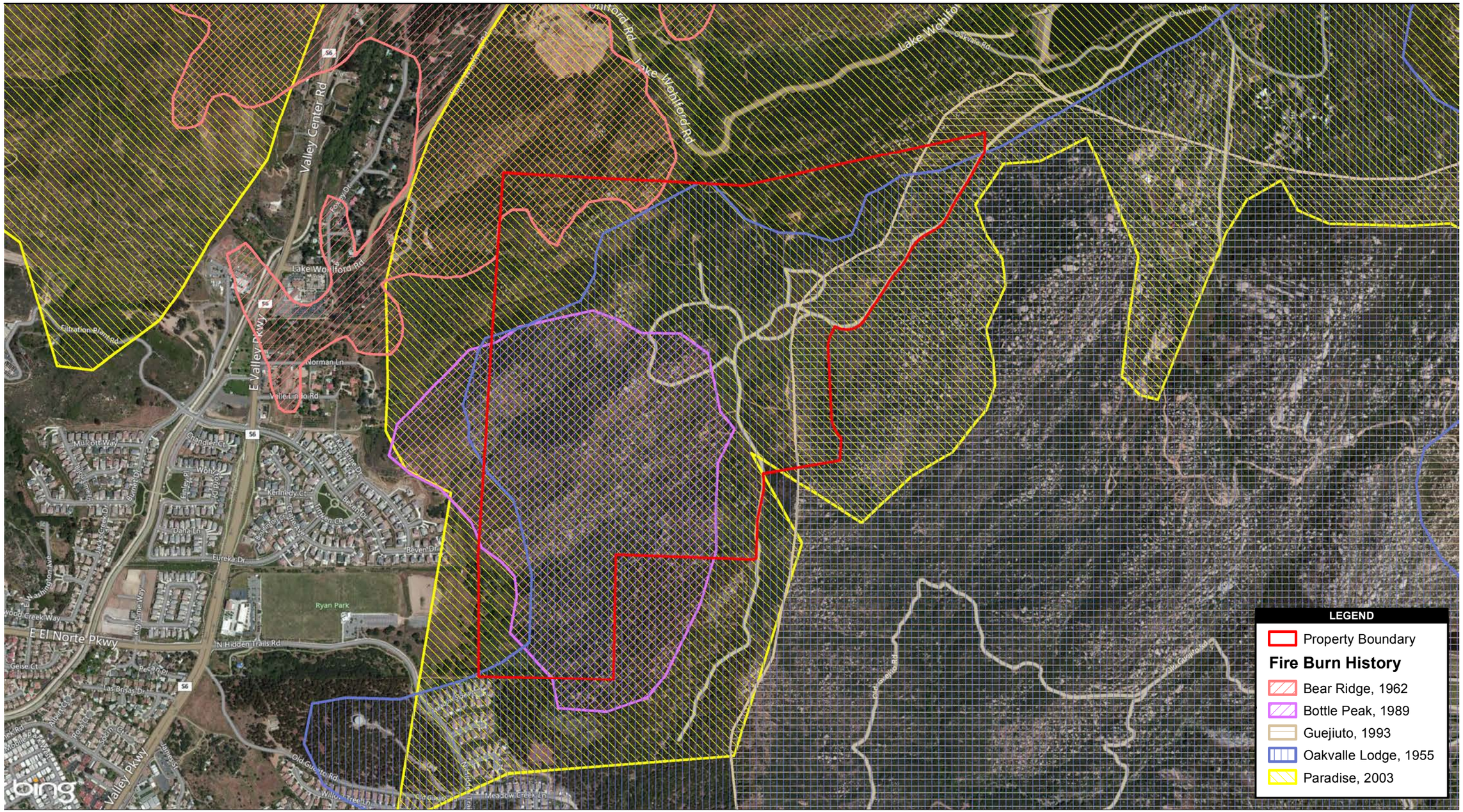

Source: SANGIS 2014; ESRI 2014; BING 2014

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Figure 6
Fire History Map

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2.7 TRAILS

Numerous vehicle trails, totaling approximately 2.53 miles, exist on the Property as a result of a previous designation of 19 parcels on the Property (Figure 7). These unmaintained vehicle trails consist of dirt access roads that are approximately 10 to 12 feet wide and may not be currently passable in a vehicle. The main access road traverses from the northeast near the Lake Wohlford Dam off of Oakvale Road, and passes through the Property to the south, ending at an avocado grove. An alternate access route occurs from east of Lake Wohlford Road onto the Property and meets up with the main access road at the grassy central area. Spur vehicle trails proceed to the northwest and west around Old Rocky Peak and Devil's Anvil Peak, and a loop vehicle trail exists on the west side of the main vehicle trail that occurs through the Property. Another vehicle trail, with a steep side spur, extends down a steep ridge that runs parallel to the eastern boundary of the Property.

Partially overgrown foot trails, totaling 0.63 mile, extend northwest from the northern base of Old Rocky Peak, and eastward from near the east base of Anvil Peak. A third trail passes down the east side of the Property to the south. These foot trails are approximately 3 feet wide and can only support pedestrian access due to their width and location within vegetation and along steep slopes.

Several of the vehicle trails may serve as foot trails or emergency access roads. However, it may be appropriate to eliminate several of them and either assist in the rehabilitation of habitat or allow for them to become overgrown by on-site vegetation.

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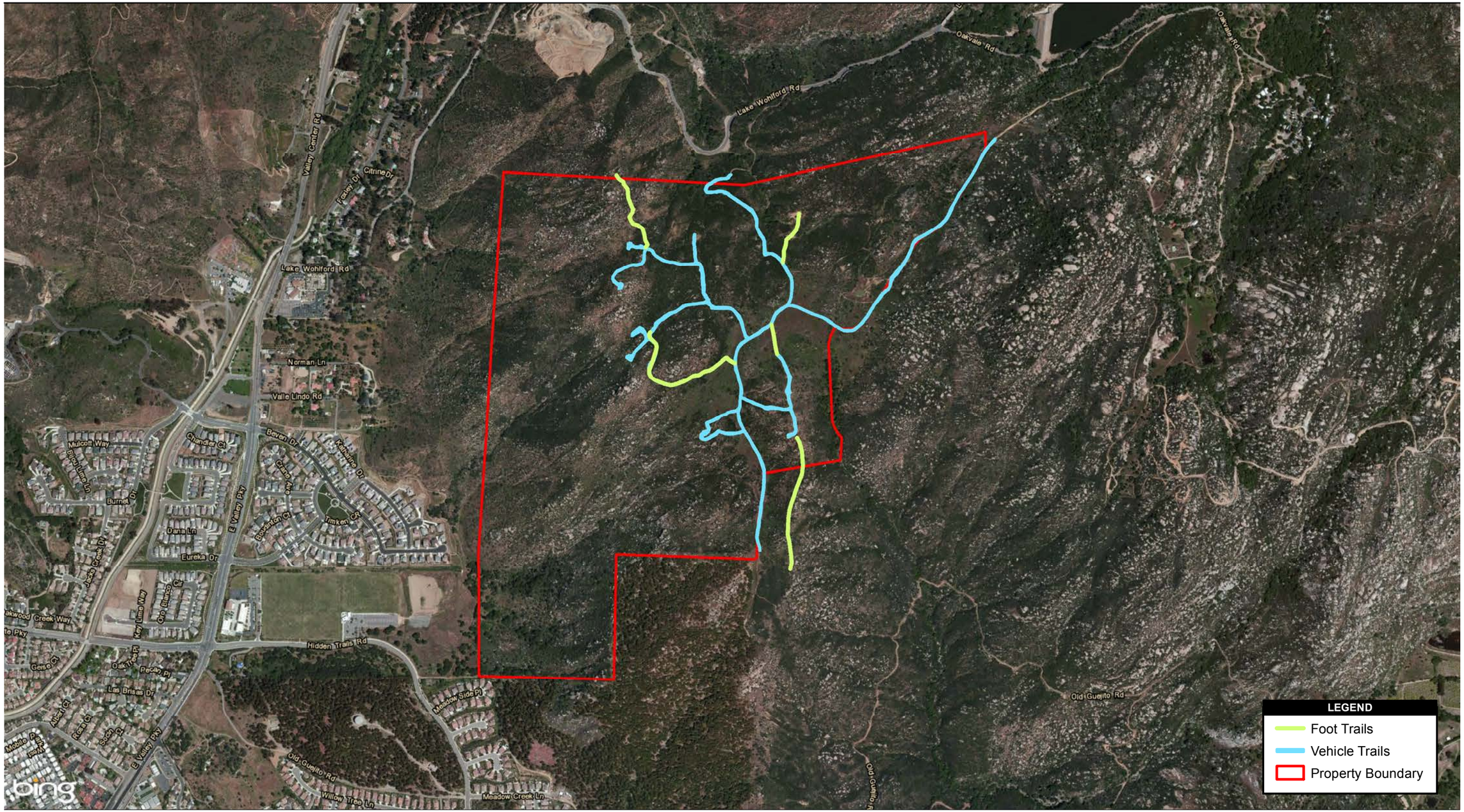

Source: ESRI 2014; BING 2014

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Scale: 1:12,000; 1 inch = 1,000 feet

Figure 7
Existing Trails

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3.0 METHODS

Biological surveys were conducted on the Property by AECOM biologists from April 2014 to through March 2015. Table 3 lists the survey dates and personnel who conducted the surveys. Surveys included vegetation mapping, preliminary rare plant surveys, and surveys for invasive plant species. Rare plant surveys were limited in 2014 due to low rainfall in the region, but were continued in 2015. Additional surveys included butterfly surveys, herpetological pitfall array surveys, diurnal and nocturnal avian point count surveys, small mammal trapping, passive acoustical bat surveys, and medium and large mammal remote camera surveys.

A review of state and federal databases for existing biological resource information for the Property was conducted to provide baseline information regarding special-status biological resources potentially occurring on the Property and in the surrounding area. Sources reviewed and used were the California Natural Diversity Database (CNDDB), California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants (CDFW 2014; CNPS 2014), and the Species Predictive Model developed by the County of San Diego (County of San Diego 2014a).

For purposes of this Baseline Biodiversity Report, species are considered to be "special-status species" if they meet at least one of the following criteria:

- Listed or proposed for listing (including candidate species[2]) under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA).
- CDFW Species of Special Concern (CSC) (CDFW 2014).
- CDFW fully protected species (CDFW 2014).
- CDFW watch list species (CDFW 2014).
- Listed by CNPS as California Rare Plant Ranks (CRPRs) 1A (presumed extinct in California and rare/extinct elsewhere), 1B (rare, threatened, and endangered in California and elsewhere), 2A (presumed extinct in California, but more common elsewhere), or 2B (rare, threatened, or endangered in California, but more common elsewhere) (CNPS

[2] Candidate species are those petitioned species that are actively being considered for listing under the Federal Endangered Species Act (FESA), as well as those species for which the U.S. Fish and Wildlife Service has initiated a FESA status review, as announced in the *Federal Register*. Proposed species are those candidate species that were found to warrant listing and have been officially proposed for listing in the *Federal Register*. Under the California Endangered Species Act, candidate species are those species currently petitioned for state-listing status.

2014). All plants constituting CRPR 1A, 1B, 2A, or 2B meet the definition of Sections 2062 and 2067 (CESA) of the California Fish and Game Code (CFGC) (CNPS 2014).

- Some, but not all, CRPR 3 and 4 species. Some plants constituting CRPR 3 and 4 meet the definitions of Sections 2062 and 2067 (CESA) of the CFGC (CNPS 2014). CRPR 3 plants are those for which more information is needed (a review list) and CRPR 4 plants are those of limited distribution (watch list) (CNPS 2014).
- Species considered sensitive by the County (County of San Diego 2010).
- Any species proposed to be covered by the draft North County Plan.

Table 3. Survey Dates and Personnel

Survey Date	Survey Number	Personnel	Conditions[1]
Reconnaissance Site Visit			
4/2/14	NA	Barbra Calantas, James McMorran, Michael Anguiano	NA
Botanical			
4/15/14	NA	Jonathan Dunn, Lance Woolley, Fred Sproul, Tom Oberbauer	NA
3/23/15	NA	Jonathan Dunn, Tom Oberbauer	NA
Butterfly			
6/4/14	1	Brennan Mulrooney	Start: 72°F, wind 2 mph, 5% CC End: 84°F, wind 8 mph, 30% CC
6/18/14	2	Brennan Mulrooney	Start: 69°F, wind 1 mph, 0% CC End: 75°F, wind 4 mph, 0% CC
6/25/14	3	Brennan Mulrooney	Start: 73°F, wind 3 mph, 0% CC End: 78°F, wind 3 mph, 0% CC
Herpetofauna Pitfall Trap Arrays			
4/11/14	Install	Michael Anguiano, Jean-Luc Brullot, Roman Mendoza, Adrian Mendoza	NA
4/14/14 – 4/18/14	1	Michael Anguiano	NA
5/19/14 – 5/24/14	2	Michael Anguiano	NA
6/2/14 – 6/6/14	3	Dana McLaughlin, Andrew Fisher	NA
6/9/14 – 6/13/14	4	Michael Anguiano	NA
Avian Diurnal Point Counts			
4/11/14	1	James McMorran	Start: 56°F, wind 0 mph, 50% CC, Visibility, good End: 65°F, wind: 0 mph 0% CC, Visibility, good
4/23/14	2	James McMorran	Start: 48°F, wind 0 mph, 0% CC, Visibility, good End: 65°F, wind: 0 mph 0% CC, Visibility, good
5/13/14	3	James McMorran	Start: 75°F, wind 8 mph, 100% CC, Visibility, good End: 86°F, wind: 10 mph 0% CC, Visibility, good

Survey Date	Survey Number	Personnel	Conditions[1]
5/26/14	4	James McMorran	Start: 52°F, wind 0 mph, 100% CC, Visibility, good End: 81°F, wind: 6 mph 0% CC, Visibility, good
9/25/14	5	James McMorran	Start: 61°F, wind 2 mph, 20% CC, Visibility, good End: 93°F, wind: 8 mph 5% CC, Visibility, good
9/29/14	6	James McMorran	Start: 50°F, wind 0 mph, 40% CC, Visibility, good End: 75°F, wind: 6 mph 5% CC, Visibility, good
10/11/14	7	James McMorran	Start: 53°F, wind 0 mph, 100% CC, Visibility, good End: 74°F, wind: 7 mph 10% CC, Visibility, good
10/30/14	8	James McMorran	Start: 48°F, wind 0 mph, 0% CC, Visibility, good End: 80°F, wind: 6 mph 10% CC, Visibility, good
11/15/14	9	James McMorran	Start: 44°F, wind 0 mph, 0% CC, Visibility, good End: 63°F, wind: 6 mph 10% CC, Visibility, good
11/24/14	10	James McMorran	Start: 42°F, wind 4 mph, 20% CC, Visibility, good End: 73°F, wind: 8 mph 10% CC, Visibility, good
Avian Nocturnal Searches			
4/14/14	1	James McMorran	Start: 64°F, wind 0 mph, 0% CC, Visibility, good End: 59°F, wind 3 mph, 0% CC, Visibility, good
4/24/14	2	James McMorran	Start: 62°F, wind 8 mph, 0% CC, Visibility, good End: 53°F, wind 3 mph, 0% CC, Visibility, good
5/14/14	3	James McMorran	Start: 79°F, wind 6 mph, 0% CC, Visibility, good End: 70°F, wind 3 mph, 0% CC, Visibility, good
5/27/14	4	James McMorran	Start: 67°F, wind 3 mph, 10% CC, Visibility, good End: 57°F, wind 2 mph, 0% CC, Visibility, good
9/24/14	5	James McMorran	Start: 81°F, wind 5 mph, 5% CC, Visibility, poor End: 72°F, wind 0 mph, 5% CC, Visibility, poor
9/30/14	6	James McMorran	Start: 67°F, wind 8 mph, 15% CC, Visibility, poor End: 58°F, wind 0 mph, 0% CC, Visibility, poor

Survey Date	Survey Number	Personnel	Conditions[1]
10/12/14	7	James McMorran	Start: 68°F, wind 15 mph, 10% CC, Visibility, poor End: 59°F, wind 4 mph, 5% CC, Visibility, poor
10/29/14	8	James McMorran	Start: 70°F, wind 1 mph, 0% CC, Visibility, poor End: 53°F, wind 0 mph, 10% CC, Visibility, poor
11/16/14	9	James McMorran	Start: 63°F, wind 7 mph, 40% CC, Visibility, poor End: 58°F, wind 5 mph, 20% CC, Visibility, poor
11/25/14	10	James McMorran	Start: 60°F, wind 6 mph, 15% CC, Visibility, poor End: 43°F, wind 0 mph, 10% CC, Visibility, poor
Small Mammal Trapping			
6/2/14 – 6/6/14	NA	Dana McLaughlin, Andrew Fisher	NA
Wildlife Cameras			
4/11/14 – 5/12/14	1	Andrew Fisher	NA
7/2/14 – 8/1/14	2	Andrew Fisher	NA
10/1/14 – 11/1/14	3	Andrew Fisher	NA
12/23/14 – 1/28/15	4	Andrew Fisher	NA
Wildlife Tracking Stations			
4/15/14 – 4/17/14	1	Michael Anguiano	NA
7/2/14 – 7/3/14	2	Andrew Fisher	NA
10/1/14 – 10/2/14	3	Andrew Fisher	NA
12/23/14 – 12/24/14	4	Andrew Fisher	NA
Bats – Passive AnaBat			
4/21/14 – 4/25/14	1	Matt Rahn	NA
6/2/14 – 6/6/14	2	Matt Rahn	NA
7/10/14 – 7/16/14	3	Matt Rahn	NA
Bats – Active Searches			
7/10/14	1	Matt Rahn	Start: 70°F, wind 4 mph, 0% CC End: 60°F, wind 2 mph, 0% CC
7/15/14	2	Matt Rahn	Start: 68°F, wind 5 mph, 0% CC End: 64°F, wind 3 mph, 0% CC
7/16/14	3	Matt Rahn	Start: 66°F, wind 5 mph, 5% CC End: 62°F, wind 3 mph, 5% CC
10/5/14	4	Matt Rahn	Start: 64°F, wind 5 mph, 0% CC End: 67°F, wind 3 mph, 0% CC
10/7/14	5	Matt Rahn	Start: 61°F, wind 2 mph, 0% CC End: 62°F, wind 2 mph, 0% CC
10/11/14	6	Matt Rahn	Start: 62°F, wind 5 mph, 10% CC End: 56°F, wind 3 mph, 10% CC

[1]NA = not applicable, CC = cloud cover

Survey Limitations

Biological surveys within the Property were conducted from April through March 2015. Vegetation and plant surveys were conducted in April 2014 and March 2015. However, seasonal rainfall amounts in 2014 and 2015 were extremely low. Spring 2014 and 2015 were considered very dry because the previous three rainfall seasons were well below normal, including the 2013/2014 season, which only received approximately 50% of normal rainfall. The level of plant growth in 2014 and 2015, including rare or sensitive annuals and herbaceous perennials, was likely to have been adversely affected by the low rainfall.

Invasive weed species were mapped in their entirety during spring 2015 surveys. Mapping was conducted concurrently with rare plant surveys. However, due to continued drought conditions, in 2015 the level of plant growth of invasive weeds may have also been suppressed.

Invertebrate diversity and numbers may have also been affected by low rainfall amounts prior and during the survey period for these species.

3.1 VEGETATION COMMUNITIES/HABITAT

3.1.1 Vegetation Communities Mapping

Vegetation communities and land cover were delineated in the field using ArcGIS onto high-resolution (1-foot-accuracy) color aerial imagery. Data was collected on a Panasonic Toughbook CF-H1 Tablet hand-held computer. Mapping of the Property included a 100-foot buffer pursuant to County guidelines (County of San Diego 2010). Surveys were conducted throughout the Property, with all roads and trails walked, high points visited for panoramic views, and a cross-country traverse down the west side slope of the Property. Vegetation classification was based on the Vegetation Classification Manual for Western San Diego County (Sproul et al. 2011) and the Holland (1986) classification system modified by Oberbauer (Oberbauer et al. 2008). The field mapping was conducted in conformance with the Vegetation Classification Manual (VCM) (Sproul et al. 2011) and then cross-walked to the Holland/Oberbauer classification. Acreage calculations were generated using ArcGIS. Vegetation classifications used in this report follow the VCM.

3.2 PLANTS

All plant species encountered during the field surveys were identified and recorded. Latin and common names follow the Checklist of Vascular Plans of San Diego County (Rebman and Simpson 2014). A list of plant species observed on the Property is included in Appendix A.

The suitability of habitats for special-status plant species to occur on the Property was evaluated during vegetation mapping surveys. The potential for special-status plant species to occur on the Property was based on habitat suitability for each species, including elevation, vegetation communities, soil type, and status and distribution within the vicinity of the Property. A table of the special-status plant species with potential to occur on the Property is included in Appendix B.

3.2.1 Floristic Surveys

Special-Status/Rare Plant Surveys

Special-status biological resources potentially present on the Property were identified through a literature search using the CNDDB (CDFW 2014), the Inventory of Rare and Endangered Vascular Plants (CNPS 2014), and the Species Predictive Model (County of San Diego 2014a). The Species Predictive Model is a combination of Microsoft Excel and geographic information system (GIS) data with attributes assigned to species based on current knowledge of their biological requirements. The attributes are then used to generate maps of the species' predicted distribution. Special-status plant species evaluated in this report are taxa that are listed or candidates for listing by federal or state agencies, listed on the County of San Diego Rare Species List (County of San Diego 2010), and/or included in the North County Subarea Plan Species Targeted for Conservation (County of San Diego 2014b).

Spring 2014 was not adequate for sensitive plant surveys due to drought conditions following three very dry rainfall seasons. The vegetation survey was conducted on April 15, 2014, and it was noted that many plants had already finished flowering. The surveyors observed that shrubs had finished flowering and were beginning to lose their leaves due to the dry conditions. Due to seasonal weather conditions, it was confirmed that rare plant surveys should be postponed to spring 2015. Although drought conditions continued in spring 2015, rare plant surveys were conducted to capture the blooming period of rare plants with a potential to occur on-site.

Field survey methods conformed to the County Guidelines Report Format and Content Requirements for Biological Resources (County of San Diego 2010); Guidelines for Conducting and Reporting Botanical Inventories of Federally Listed, Proposed, and Candidate Plants (USFWS 1996); Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities (CDFG 2009); and CNPS Botanical Survey Guidelines (CNPS 2001). All plant species observed in the field surveys were identified to subspecies or variety to determine sensitivity status.

The vegetation, elevation, soil types and rock formations, and disturbance were considered when evaluating the Property for sensitive plant species. The portion of the County within which the

Property is located is not known to support a high number of sensitive species; however, gabbro soils exist to the north of the Property, and these soils are known to support numerous sensitive plants. Due to the proximity of the Property to the gabbro soils, there is potential for rare plant species to occur in isolated patches of gabbro soils on the Property.

Invasive Plant Species Mapping

During vegetation mapping surveys, nonnative invasive plant species were identified within the Property, and their distribution evaluated either individually or as part of a vegetation classification area. There are certain areas where a greater number of nonnative species grow, particularly annual grasses, but several species are also spread over much of the Property. The species that are considered the most invasive or represented in a few locations were of greatest priority for mapping individual locations. Species of greatest concern include those rated by the California Invasive Plant Council (Cal-IPC) (Cal-IPC Invasive Plant Inventory Database 2014), existing on the Federal Invasive and Noxious Plant List (USDA Natural Resources Conservation Service 2014), or occurring on the California Noxious Weeds list (California Department of Food and Agriculture 2014). Nonnative species on the Property and their listing status in the Cal-IPC and federal and state invasive plant lists are described further in Section 4.0.

3.3 WILDLIFE

All wildlife species detected during the field surveys of the Property were identified and recorded. General wildlife surveys occurred concurrently with focused surveys and assessments of the Property. AECOM biologists identified wildlife species by sight, vocalizations, burrows, tracks, scat, nests/middens, and other sign. A list of the wildlife species observed on the Property is included in Appendix C.

The suitability of habitats for special-status wildlife species to occur on the Property was evaluated during general wildlife surveys. The potential for special-status wildlife species to occur on the Property was based on habitat suitability for each species, including elevation, vegetation communities, level of disturbance, and status and distribution within the vicinity of the Property. A table of the special-status wildlife species with potential to occur on the Property is included in Appendix D.

3.3.1 Invertebrates

Three general butterfly surveys were conducted in June 2014 to assess the diversity of butterfly species occurring within the Property. These three surveys were timed to coincide with the peak of the Hermes copper (*Lycaena hermes*) flight season. Survey dates, times, personnel, and

weather are shown in Table 3. Although the three survey dates all fall within the flight season of a large number of butterflies, there are several species that do not fly at that time, and so it is expected that there are species that occur within the Property that were not detected during the surveys. The survey effort was focused in areas of high densities of flowering plants that provide nectar sources, as well as on ridges, hilltops, and in drainages where butterflies congregate. Surveys were conducted by walking meandering transects through the Property, from late morning to early afternoon when butterfly activity is at its peak. Incidental observations of other invertebrate species were gathered during these and all other wildlife surveys.

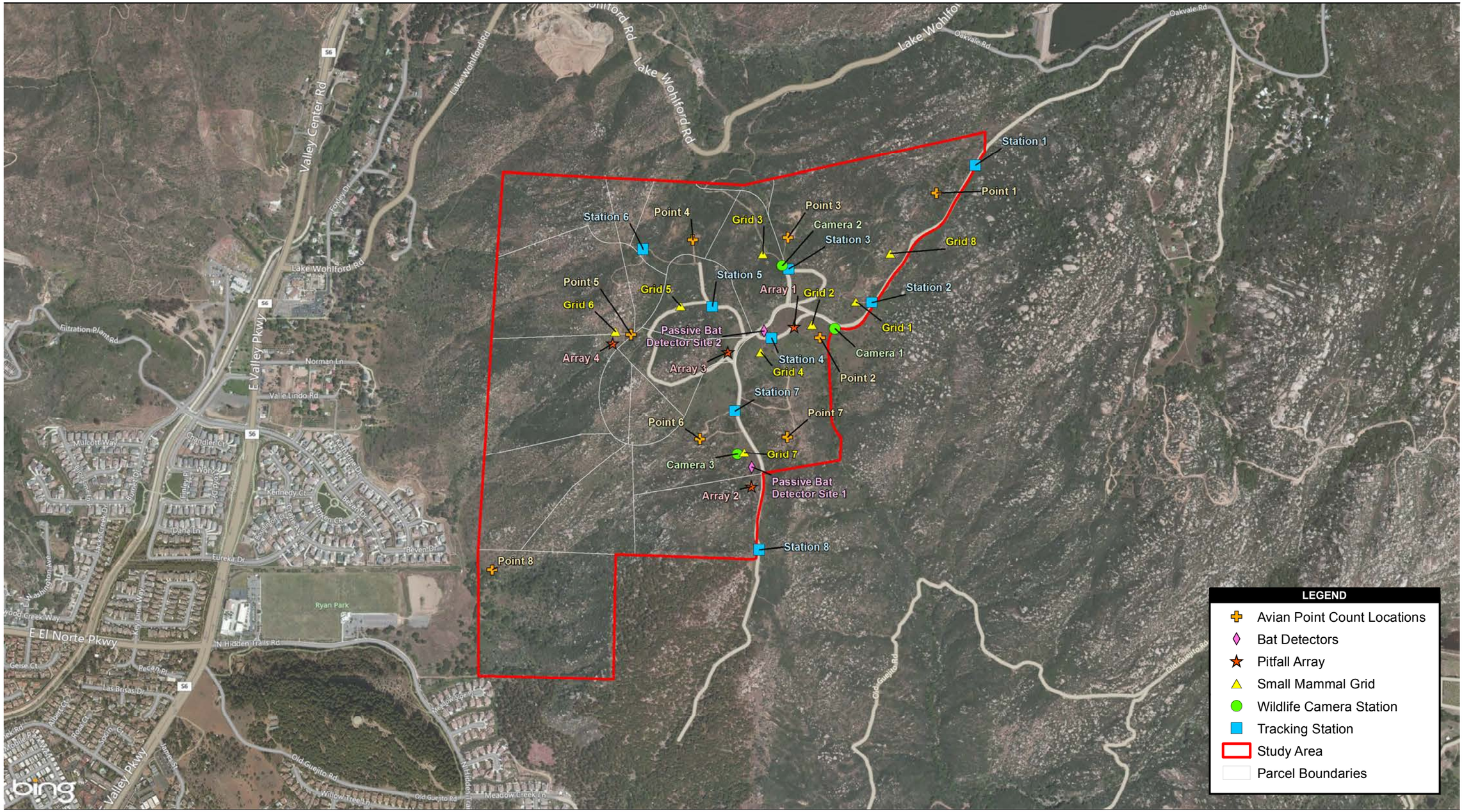
3.3.2 Herpetofauna

General herpetological surveys were conducted to document the presence of amphibian and reptile species occurring within the Property. Methods for herpetological surveys included pitfall trap array and visual encounter surveys.

Four pitfall arrays were installed on the Property on April 11, 2014 (Figure 8). The pitfall trap arrays were designed based on the guidelines outlined in Herpetological Monitoring Using a Pitfall Trapping Design in Southern California (Fisher et al. 2008), and were modified to incorporate the use of box funnel traps. The arrays were strategically placed in representative areas that had potential to fully capture the diversity of the herpetofauna on the Property. Each pitfall array consisted of four 5-gallon buckets and three box funnel traps (12 by 8 by 18 inches) connected by shade cloth drift-fences (50 feet by 12 inches). Each array was created around a center bucket (pitfall) with three arms of drift fence extending out 50 feet, forming a Y-shape (Appendix F). In addition to the center bucket, each arm of the "Y" had a bucket placed in the middle and a box funnel trap placed at the end with approximately 28-inch-long drift fence "wings" protruding off the front of each trap to increase the size of the funnel. Each box funnel trap and bucket contained a piece of PVC pipe to provide shelter for captured animals. Each bucket also contained a water-saturated sponge to provide moisture for captured amphibians. Each box funnel trap and bucket was covered with boards and/or lids to protect animals captured from the heat of the sun.

Three 5-day sampling periods and one 6-day sample period were conducted in April, May, and June 2014 (Table 3). Traps were opened on day one, checked every morning, and were closed on the last day of each sample period. All vertebrates captured were identified to species (if possible) and released. Representative photographs of species were taken, when possible (Appendix F). All pitfall arrays were removed from the Property after the last survey.

Visual encounter surveys were also conducted to the extent feasible, based on available survey time, while walking to and from drift fence locations and in areas where drift fences were not



Source: Digital Globe 2008

1,000 500 0 1,000 Feet

Scale: 1:12,000; 1 inch = 1,000 feet

Figure 8
Biological Inventory Locations

Path: P:\2013\60278233_DPR_2012\06GIS\6.3_Layout\TO_12\Report Figures\Biodiversity_Report\Fig8_Bio_Inv_Locs.mxd, 4/27/2015, SorensenJ

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installed. A meandering route was walked to allow for investigation of features most likely to attract amphibians and reptiles (e.g., cover objects, rocks). Any reptiles or amphibians observed during visual encounter surveys were identified to species.

3.3.3 Birds

Monitoring the presence and abundance of birds using point counts has been a standard practice by a variety of establishments, as it is an effective way to conduct repeatable surveys, year after year. Organizations that participate in such surveys include USFWS, the U.S. Geological Survey, the Audubon Christmas Bird Counts, the U.S. National Park Service, Partners in Flight, the California DPR, and many others.

Although many organizations participate in this standard survey methodology, there is a high variability on how the surveys are conducted. Depending on habitat, topography, and a variety of other factors, the amount of time spent at a survey location, the area of the radius to be sampled (e.g., 164-foot radius or 328-foot radius), and the distance between each survey area can vary from project to project. Because the topography and habitats within this Property are primarily uniform, 328-foot radius survey locations were used on the Property.

Point Count Locations

Eight 328-foot survey locations were dispersed throughout the Property, with a minimum distance of 886 feet between each survey point (Figure 8). The survey points were strategically placed to gather species diversity and abundance in all habitats found within the Property. Several points were exclusive to surveying southern mixed chaparral, but other survey locations encompassed a variety of habitats, including combinations of southern mixed chaparral, Diegan coastal sage scrub, and coast live oak and Engelmann's oak woodlands. Survey locations were determined in the field, and global positioning system (GPS) coordinates were mapped. The center point of the survey location was flagged, and then removed upon completion of the spring and fall season surveys. The eight survey locations were photographed in four cardinal compass directions and are shown in Appendix E.

Conducting the Point-Count Surveys

All point-count stations were visited by hiking to each point. There are well-established roads to many of the points, but surveyors chose to hike to all locations to minimize noise pollution. Additionally, the opportunity for capturing incidental sightings not detected during actual point-count surveys was increased. At the beginning and end of each survey day, weather conditions were recorded. Upon arriving at each survey location, the observer collected general data

(e.g., point-count location), which allowed time for the birds to adjust to human presence. Once this data was recorded, the start time was recorded and the survey commenced for 10 minutes. After the survey was completed, the observer proceeded to the next survey location. All surveys began at similar times according to sunrise/sunset adjustments, and survey point locations were periodically visited at different times of day to take into consideration bird activity differences.

Once the survey started, the observer immediately recorded all birds detected both visually and aurally within the 328-foot radius. Approximate distances were recorded, as was the species and the number of individuals associated with the observation. Every effort was made to confirm that an individual species (or group of birds) was not double-counted and that all observations were of unique individuals. If multiple individuals of the same species were in the survey area, each individual received its own record if the observer was confident that the detections were of unique individuals (e.g., counter singing, vocalizing simultaneously, one observed while the other vocalized elsewhere). When birds were seen flying over the survey area, these were recorded as "flyovers." Species were also recorded outside of the 328-foot-radius survey area if they were a species that had not been detected during surveys or incidentally, and after the official survey was completed so that the observer could concentrate on the survey area.

During diurnal surveys, the observer did nothing to elicit bird activity or to draw in birds from outside the survey area with methods such as "pishing" or any "bird scolding call" playback or similar methods.

Nocturnal surveys were duplicative of the methods for diurnal surveys, but the rotation of the survey points were less varied. During these surveys, a flashlight was used for navigation and for species detection, if possible, during the night. Nocturnal surveys did involve eliciting bird activity. This occurred as incidental, after the official survey was complete if there were no vocalizations or detections from any nocturnal (or migrating diurnal) species during the survey period. Species elicited for playback in appropriate habitats were common poorwill (*Phalaenoptilus nuttallii*), great horned owl (*Bubo virginianus*), western screech owl (*Megascops kennicottii*), and barn owl (*Tyto alba*).

Spring 2014 surveys occurred in April and May, and fall 2014 surveys occurred September through November (Table 3).

3.3.4 Mammals

Small Mammals

Small mammal trapping was conducted during spring 2014 to document the presence of small mammals within the Property. Prior to the start of trapping, biologists conducted a habitat

assessment for small mammals by driving and walking through the Property. Biologists looked for sign of small mammals such as burrow entrances, run-ways, litter mounds, dust-bathing sites, and vegetation that could support small mammal species. Range maps for small mammals occurring within the vicinity of the Property were reviewed before trapping was performed. The vegetation, soils, and specific micro-habitat areas to target trap were chosen based on the range of small mammal species that could occur. The specific locations of trapping grids are depicted in Figure 8.

Trapping grids were located in a range of habitat and vegetation types: grassland areas, disturbed areas, dense chaparral, sage scrub, oak woodland, and a mixture of habitats. A combination of 9-inch and 12-inch Sherman live traps were used. The traps were baited with a combination of bird seed that consisted of millet, sunflower seed, dried raisins, sorghum, and cracked corn. The traps were set in a variety of habitat types, with specific habitats chosen to target specific small mammal species. One trapping session was conducted from June 2 through 6, 2014, and consisted of four consecutive trap nights.

Eight trapping grids were placed throughout the Property. Seven trapping grids consisted of two parallel lines of 15 traps each, for a total of 30 traps per grid. The traps were spaced approximately 16 to 32 feet apart, depending on the terrain and vegetation. The eighth trapping grid consisted of 12 traps placed around woodrat middens in chaparral and oak woodland habitat. A total of 222 traps were set to sample the small mammal population at the Property. Each trap was marked with brightly colored flagging, and the ends of each trapping line were double flagged to indicate the end of a line. Each grid was recorded with a GPS unit and photographed.

Traps were opened and baited in the late afternoon hours, and were checked the following morning. Traps were placed in locations to minimize exposure to direct sunlight, and in locations where small mammals might frequent (such as along rock ledges, in front of woodrat middens, rock outcrops, runs, and burrow entrances). Biologists checked each trap in the early morning hours before direct sunlight could cause temperatures to rise in the traps, possibly resulting in mortality. When a small mammal was captured in a trap, it was identified to species and then released unharmed. If possible, the age of the animal was also recorded. No marking scheme was conducted. All traps were closed in the morning to prevent any wildlife from entering the traps during the day. If ants were detected within traps, the traps were moved to a new location that was free of ants.

In addition to trapping grids, small mammals that were incidentally captured in pitfall traps or that walked into funnel traps were recorded and then released unharmed.

Bats

Active and passive bat surveys were conducted to understand the diversity of bat species occurring within the Property. Prior to conducting bat surveys, bat biologist Matt Rahn walked throughout the Property to look for potential bat corridors, roosting areas, and foraging areas. Potential roosting areas include oak trees and riparian vegetation for tree-dwelling bats, and rocky outcrops and caves or exfoliating rock for cave-dwelling species. Dr. Rahn documented potential resources and topographical features that may attract bats (such as meadows, "tunnels" through vegetation, and ponded water). Two locations were chosen to leave passive AnaBat units in the field, and areas for active bat surveys were determined.

Active AnaBat surveys were conducted during summer 2014 (to document potential resident species), and again during fall 2014 (to document migratory species). Active bat surveys involved using a handheld mobile AnaBat SM1 unit and then walking the main trails within the Property. Dr. Rahn walked meandering transects following existing trails within multiple vegetation communities and scanned for bat calls. When a bat was detected with the AnaBat unit, the volume was increased to either "pull-in" the bat call (if it was far away), or turned down to minimize interference and record a clear call of the bat species flying nearby.
Three nights of active surveys were conducted during the summer (July 10, 15 and July 16, 2014), and three nights in the fall season (October 5, 7, and 11, 2014), for a total of 6 nights of active surveys.

Passive AnaBat surveys were conducted by leaving two stationary AnaBat units in the field at two different locations (Figure 8). Two AnaBat units were attached to vegetation and pointed toward an area where bats would potentially fly. One unit was placed in the northeastern part of the Property and pointed in the direction of the dry stock pond, and the second unit was placed along the periphery of a meadow and pointed in the direction of the meadow. These units were left in the field for several days during the spring (April 21 through 25 and June 2 through 6, 2014) and summer (July 10 through 16, 2014). Passive surveys were conducted during fall 2014 (October 5 through 11, 2014).

Spring surveys consisted of passive surveys with two AnaBat detectors from April 21 through 25, 2014, and June 2 through 6, 2014. The two AnaBat detectors were programmed to turn on at 7 p.m. and turn off at 6:30 a.m. During the sampling period, daytime temperatures ranged from the mid-50s °F to the mid-80s °F. Relative humidity ranged from the mid-30% to the upper 70% Most nights were clear or partly cloudy, with wind speeds of 0 to 15 miles per hour (mph) (with a mean of 4 mph).

Summer surveys were conducted using both passive and active surveys. Active surveys occurred on July 10 and July 16, 2014, with passive AnaBat units running concurrently during that week. The two AnaBat detectors were programmed to turn on at 7:30 p.m. and turn off at 6 a.m. They were placed in the same location as the spring surveys (Figure 8).

Fall surveys were conducted using both passive and active surveys. Active surveys occurred on October 5, 7, and 11, 2014 with passive AnaBat units running concurrently during that week. The two Anabat detectors were programmed to turn on at 7:45 p.m. and turn off at 6:00 a.m. They were placed in the same location as the spring surveys (Figure 8).

All bat calls were identified to species by Dr. Rahn either in the field while the bat was flying by (during active surveys) or using a computer with a library of known bat calls. Data from active surveys is helpful for determining the direction bats are flying, attaining an accurate number of bats within the site (instead of just bat passes), and determining how that bats are using the site (foraging, roosting, or flying through).

Medium to Large Mammals

Wildlife Cameras

Remote wildlife cameras and tracking stations were set to document the diversity of medium and large mammals that occur on the Property. Three Reconyx HyperFire Semi-covert Infrared HC500 cameras were set in areas of high mammal activity (based on animal tracks and scat), and along trails, roads, and other potential wildlife transit routes. The HC500 camera was used because the trigger speed is less than 1 second, which maximizes the number of potential photos that can be taken of an animal that is moving quickly in front of the camera. Each camera was baited with several drops of Carman's Pro Choice scent lure, which was placed on a large rock in the center of the camera's viewshed. This scent tends to attract a wide variety of wildlife, and lures them into the center viewshed of the camera so that an identifiable photograph can be taken. The scent lure also keeps the animal in the viewshed of the camera so that several photos can be taken. A scent lure is particularly useful at night to lure wildlife to within the range of the semi-covert infrared flash. A camera with a semi-covert infrared flash was chosen because a white-light or LED flash can over-expose, or "white-out," a photograph, making the identification of the animal difficult. White-light or LED flashes can also scare wildlife away, but the infrared flash often attracts wildlife because it simply "glows." The locations of the wildlife cameras are shown in Figure 8.

All three cameras were turned on and run for the entire months of April, July, October, and part of December 2014 and most of January 2015. To prevent vandalism and theft, each camera was

placed inside a bear-proof box and locked. One camera was locked to a large oak tree, and the other two cameras were bolted to poles that had been cemented in the ground.

At the end of each month, the cameras were removed and checked to confirm that each camera worked for the entire month. The photographs were then reviewed and categorized based on the species detected. All photographs of humans and or dogs were lumped together to understand the amount of human activity within the Property.

Tracking Stations

Wildlife tracking stations were set on the same day that the cameras were turned on. Eight wildlife tracking stations were set. The purpose of the wildlife tracking stations was to detect any medium or large mammals that were missed on wildlife cameras. Each tracking station was placed along a dirt road or trail where wildlife might be occurring. The tracking station locations were selected to have vegetation on both sides of the trail to help keep wildlife on the trail. Tracking stations were prepared by first removing any large rocks or sticks in the area and then smoothing out the surface of the soil. The native dirt was sifted across the trail using fine wire mesh. Each station spanned the entire width of the road or trail, and was approximately 3 feet wide. Each station was set in the morning and then checked a day or two later. All wildlife tracks were identified to species when possible. The locations of the tracking stations are shown in Figure 8.

4.0 RESULTS AND DISCUSSION

4.1 VEGETATION COMMUNITIES/HABITAT

Vegetation community classification was based on two separate systems: the VCM (Sproul et al. 2011) and the Holland (1986) (as modified by Oberbauer et al. 2008) classification system. Field mapping was conducted in April 2014 according to the VCM and then cross-walked to the Holland/Oberbauer classification system. The predominant vegetation community within the Property is the *Ceanothus tomentosus* association (woolly-leaved ceanothus association); however, 11 other plant alliances, associations, or semi-natural stands were mapped within the Preserve: *Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus* association, *Eriogonum fasciculatum* alliance, *Malosma laurina* alliance, *Salvia mellifera-Eriogonum fasciculatum* association, *Artemisia californica-Eriogonum fasciculatum-Malosma laurina* association, *Artemisia californica-Salvia mellifera* association, *Quercus agrifolia-Artemisia californica* association, *Quercus agrifolia/Quercus* (*berberidifolia, acutidens*) association, *Quercus agrifolia-Toxicodendron diversilobum* association, and the *Quercus engelmannii-Quercus agrifolia/Toxicodendron diversilobum*/grass association (Table 4). Disturbed habitat was also mapped for the Property. Vegetation communities according to the Holland/Oberbauer and VCM classification system are included in Figures 9a and 9b.

The following vegetation communities and land cover types for the Property follow those designated in the VCM.

4.1.1 Nonnative Grassland

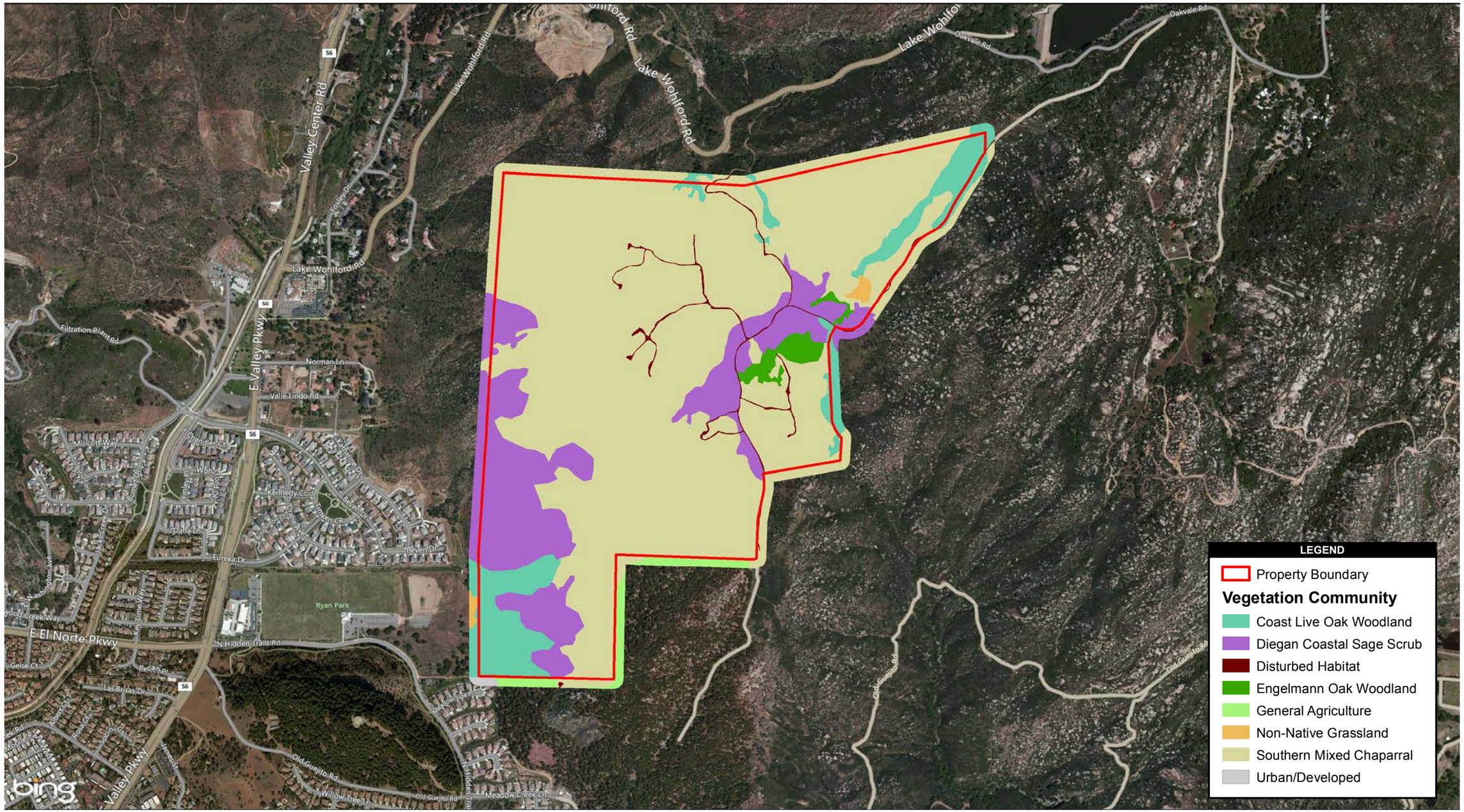
Black Mustard (Brassica [nigra]) and Other Mustards Semi-Natural Stands (5.7)

The Black Mustard and Other Mustards Semi-Natural Stands is dominated by members of the family Brassicaceae. This vegetation occurs on 0.92 acre of the Property and is generally located in the area of dry pond bottom. The dominants of this stand are black mustard (*Brassica nigra*), short pod mustard (*Hirschfeldia incana*), and London rocket (*Sisymbrium irio*). Other annual grasses and nonnative weeds such as ripgut brome (*Bromus diandrus*) occur with these mustards. This habitat is listed as Tier III in the draft North County Plan.

Table 4. Vegetation Communities and Land Cover Types

VCM Code	VCM Alliance/Association	VCM Common Name	Holland Code	Holland Classification	Acres On the Property
	Herbaceous			***Grassland***	***0.92***
5.7	*Brassica* (*nigra*) and Other Mustards Semi-Natural Stands	Black Mustard and Other Mustards Semi-Natural Stands	42210	Nonnative Grassland: Broadleaf Dominated	0.92
	Chaparral			***Chaparral***	***319.25***
4.18.1	*Ceanothus tomentosus* Association	Woolly-Leaved Ceanothus Association	37120	Southern Mixed Chaparral	288.75
4.2.3	*Adenostoma fasciculatum/ Xylococcus bicolor/ Ceanothus tomentosus* Association	Chamise/Mission Manzanita/Woolly-Leaved Ceanothus Association	37120	Southern Mixed Chaparral	30.50
	Sage Scrub			***Coastal Sage Scrub***	***62.52***
4.23	*Eriogonum fasciculatum* Alliance	California Buckwheat Alliance	32500	Diegan Coastal Sage Scrub	5.72
4.35	*Malosma laurina Alliance*	Laurel Sumac Alliance	32000	Diegan Coastal Sage Scrub	3.75
4.44.1	*Salvia mellifera/Eriogonum fasciculatum* Association	Black Sage/California Buckwheat Association	32500	Diegan Coastal Sage Scrub	2.00
4.7.1	*Artemisia californica/ Eriogonum fasciculatum/ Malosma laurina* Association	California Sagebrush/ California Buckwheat/ Laurel Sumac Association	32500	Diegan Coastal Sage Scrub	44.26
4.8.1	*Artemisia californica/Salvia mellifera* Association	California Sagebrush/ Black Sage Association	32500	Diegan Coastal Sage Scrub	6.79
	Woodland			***Woodland***	***31.89***
3.6.1	*Quercus agrifolia/Artemisia californica* Association	Coast Live Oak/California Sagebrush Association	71160	Coast Live Oak Woodland	15.11
3.6.2	*Quercus agrifolia/Quercus* (*berberidifolia, acutidens*) Association	Coast Live Oak/Scrub Oak Association	71160	Coast Live Oak Woodland	0.20
3.6.4	*Quercus agrifolia/ Toxicodendron diversilobum* Association	Coast Live Oak/Poison Oak/Grass Association	71161	Open Coast Live Oak Woodland	11.18
3.7.2	*Quercus engelmannii/ Quercus agrifolia/ Toxicodendron diversilobum*/Grass Association	Engelmann Oak/Coast Live Oak/Poison Oak/Grass Association	71180	Engelmann Oak Woodland	5.40
	Other			***Other***	***3.81***
	Disturbed Habitat			Disturbed Habitat	3.81
Total					418.39

VCM = Vegetation Classification Manual (Sproul et al. 2011)



Source: ESRI 2014; BING 2014

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Scale: 1:12,000; 1 inch = 1,000 feet

Figure 9a
Vegetation Communities/Habitats
(Holland/Oberbauer Classification)

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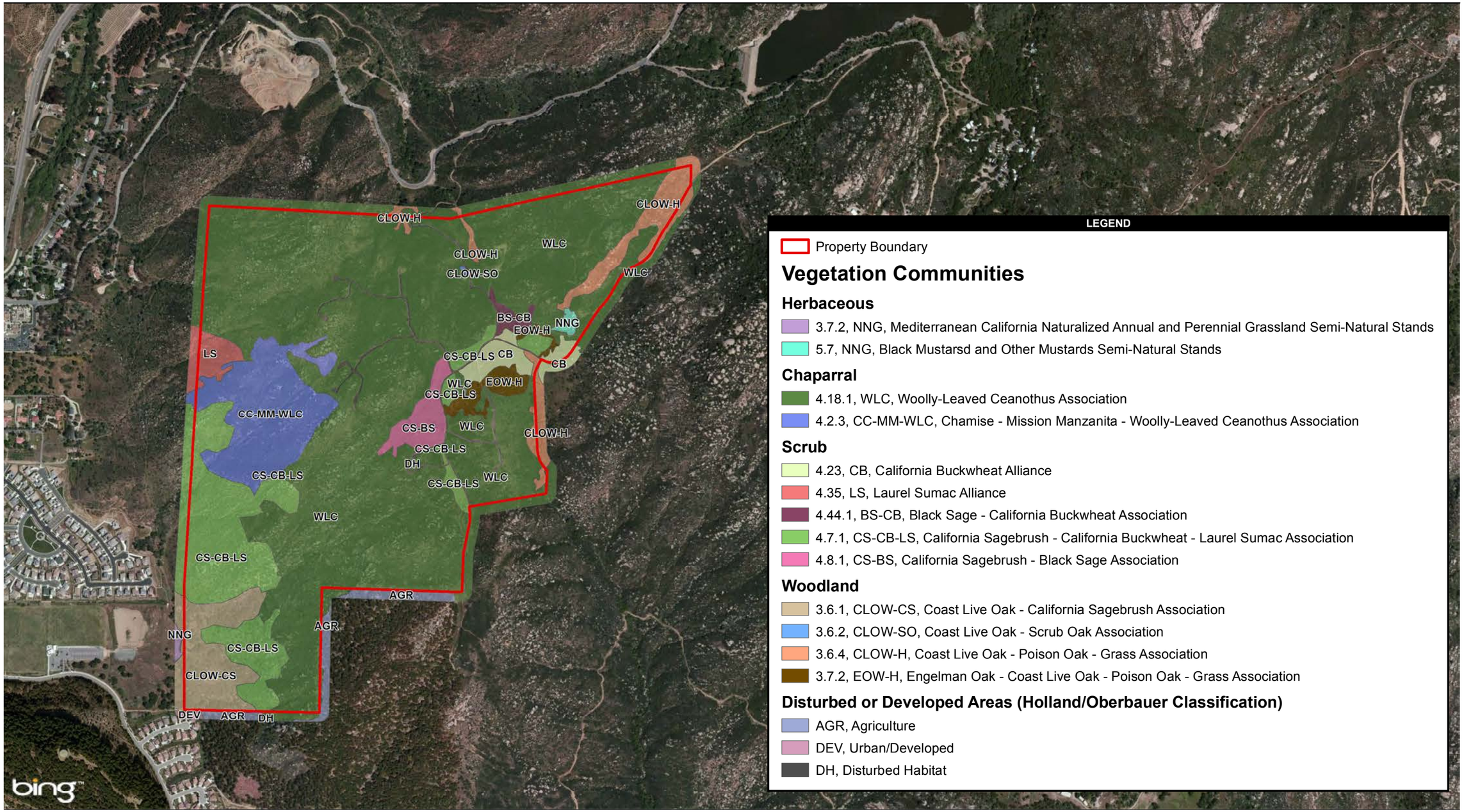

Source: ESRI 2014; BING 2014

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Scale: 1:12,000; 1 inch = 1,000 feet

Figure 9b
Vegetation Communities/Habitats
(VCM Classification)

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4.1.2 Chaparral

Woolly-Leaved Ceanothus Association or Ceanothus tomentosus Association (4.18.1)

Woolly-leaved ceanothus (*Ceanothus tomentosus*) is a dominant species in the shrub canopy of continuous stands of low-cover shrubs, including scrub oaks (*Quercus berberidifolia*, *Q.* x *acutidens*), San Diego mountain mahogany (*Cercocarpus minutiflorus*), and other shrubs. This is the dominant vegetation on the Property occurring on 288.75 acres along the central ridges and lowlands. Following adequate rains, this shrub community can be covered in dark blue from the flowers of the *Ceanothus*. Following fires, a number of annual plant species may appear within this association if there is sufficient rainfall. This habitat is listed as Tier III in the draft North County Plan.

Chamise/Mission Manzanita/Woolly-Leaved Ceanothus Association (4.2.3)

Chamise/Mission Manzanita/Woolly-Leaved Ceanothus association (*Adenostoma fasciculatum/ Xylococcus bicolor/Ceanothus tomentosus* association) is a widespread association in San Diego County. Chamise (*Adenostoma fasciculatum*), mission manzanita (*Xylococcus bicolor*), and woolly-leaved ceanothus (*Ceanothus tomentosus*) form an open or continuous canopy, and occur as co-dominant shrubs. This vegetation occurs on the central-western portion of the Property covering 30.50 acres. Herbaceous plants often occur in openings of this association, and following fire. This habitat is listed as Tier III in the draft North County Plan.

4.1.3 Sage Scrub

California Buckwheat Alliance (4.23)

California buckwheat alliance (*Eriogonum fasciculatum* alliance) grows in low valleys and slopes and in a variety of soils. This alliance is one of the first to recolonize disturbed areas that have been previously cleared or cultivated, and it occurs in central-eastern portion of the Property in the flatter lands, covering 5.72 acres. It may mix with a wide variety of other shrubs, including California sagebrush (*Artemisia californica*), monkey flower (*Mimulus aurantiacus*), bush mallow (*Malacothamnus fasciculatus*), and a variety of others. This habitat is listed as Tier II in the draft North County Plan.

Laurel Sumac Alliance (4.35)

Laurel sumac alliance (*Malosma laurina* alliance) is dominated by laurel sumac or may be co-dominant with California sagebrush, California buckwheat (*Eriogonum fasciculatum*), or toyon

(*Heteromeles arbutifolia*). Laurel sumac quickly regrows following fires, and is often the first sign of growth within a few weeks of a fire. This alliance occurs on 3.75 acres of west-facing slopes in the northwest portion of the Property. This habitat is listed as part of the Tier II coastal sage scrub in the draft North County Plan.

Black Sage/California Buckwheat Association (4.44.1)

Black sage/California buckwheat association (*Salvia mellifera/Eriogonum fasciculatum* association) is an open shrub canopy association dominated by black sage and California buckwheat. Other associates include coyote bush (*Baccharis pilularis*) and laurel sumac (*Malosma laurina*). This habitat is listed as part of the Tier II coastal sage scrub in the draft North County Plan. On the Property, this vegetation occurs on 2.00 acres in the northeast portion of the Property west of the dry pond.

California Sagebrush/California Buckwheat/Laurel Sumac Association (4.7.1)

California sagebrush/California buckwheat/laurel sumac association (*Artemisia californica/ Eriogonum fasciculatum/Malosma laurina* association) is the classic form of vegetation common in coastal regions of Southern California. The three listed species occur as co-dominants, but also in association with a number of other species, including sawtooth goldenbush (*Hazardia squarrosa*), coyote bush, and chaparral candle (*Hesperoyucca whipplei*). This association occurs on 44.26 acres on west-facing slopes of the southwestern portion of the Property. It is listed as part of the Tier II coastal sage scrub in the draft North County Plan.

California Sagebrush/Black Sage Association (4.8.1)

California sagebrush/black sage association (*Artemisia californica/Salvia mellifera* association) occurs with these two species growing as co-dominants in a relatively open canopy. Other subdominant plants include California buckwheat, laurel sumac, and monkey flower. It is listed as part of the Tier II coastal sage scrub in the draft North County Plan. It occurs on 6.79 acres located near the center of the Property.

4.1.4 Woodland

Coast Live Oak/California Sagebrush Association (3.6.1)

Coast live oak/California sagebrush association (*Quercus agrifolia/Artemisia californica* association) occurs where coast live oak is the dominant species in an open tree canopy and California sagebrush is dominant in an open shrub canopy. The open tree and open shrub

canopies overlap with each other in this association. There may be a large number of other associated shrubs, including woolly-leaved ceanothus (*Ceanothus tomentosus*), chamise, and laurel sumac. Herbaceous cover in openings includes wild cucumber (*Marah macrocarpa*) and caterpillar phacelia (*Phacelia cicutaria*), as well as nonnative species. This association occurs on the southwestern corner of the Property below the slopes on 15.11 acres. It is classified as Tier I habitat in the draft North County Plan.

Coast Live Oak/Scrub Oak Association (3.6.2)

Coast live oak/scrub oak association (*Quercus agrifolia/Quercus* [*berberidifolia, acutidens*] association) grows with *Quercus agrifolia* as a dominant and scrub oaks (*Quercus berberidifolia* and *Q.* x *acutidens*) present in the shrub canopy. It may include a number of other shrubs as well, including species of ceanothus, toyon, and laurel sumac. This association is typical of slopes where coast live oak is not associated with riparian vegetation types. It is classified as Tier I habitat in the draft North County Plan. On the Property, it grows on 0.20 acre in an upper portion of a drainage that flows down the middle of the northern boundary.

Coast Live Oak/Poison Oak/Grass Association (3.6.4)

Coast live oak/poison oak/grass association (*Quercus agrifolia-Toxicodendron diversilobum* association) grows where coast live oak is dominant in the tree canopy and poison oak (*Toxicodendron diversilobum*) is subdominant in the shrub canopy. This association usually contains an understory of native or nonnative annuals. This association is typically up slope from riparian areas. It is classified as Tier I habitat in the draft North County Plan. This vegetation grows along the eastern boundary and drainages crossing the northern boundary of the Property and comprises 11.18 acres.

Engelmann Oak/Coast Live Oak/Poison Oak/Grass Association (3.7.2)

Engelmann oak/coast live oak/poison oak/grass association (*Quercus engelmannii-Quercus agrifolia/Toxicodendron diversilobum*/grass association) occurs where Engelmann oak (*Quercus engelmannii*) is present with coast live oak in upland areas. Poison oak is also present to some degree in most locations. This association occurs on 5.40 acres located in the central-eastern portion of the Property and around the areas dominated by California buckwheat on the rolling slopes. It is classified as Tier I habitat in the draft North County Plan.

4.1.5 Disturbed Habitat (Holland 11300)

The VCM does not have a "disturbed" classification. In the Oberbauer et al. (2008) modification of the Holland code, disturbed habitat refers to areas that have no native vegetation but is not developed. Disturbed areas are "areas that have been graded, repeatedly cleared for fuel management purposes, and/or experienced repeated use that prevents natural vegetation, such as dirt parking lots and well established trails, recently graded fuelbreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old home sites" (Oberbauer et al. 2008). Vegetation on these types of sites, if present, is usually dominated by invasive annuals, including star thistle (*Centaurea melitensis*), tumbleweed (*Salsola tragus*), horehound (*Marrubium vulgare*), fennel (*Foeniculum vulgare*), and milk thistle (*Silybum marianum*). There are 3.81 acres of disturbed habitat on the Property occurring along the roads, vehicle trails, and widened foot trails. It is classified as Tier IV habitat in the draft North County Plan.

4.2 PLANTS

A total of 162 species were observed within the Property during the 2014 baseline surveys. Of these 162 species, 47 species are nonnative. Rare plant observations are depicted in Figure 10. A comprehensive list of all plant species detected within the Property during 2014 and 2015 surveys is included in Appendix A.

4.2.1 Special-Status Plant Species Observed

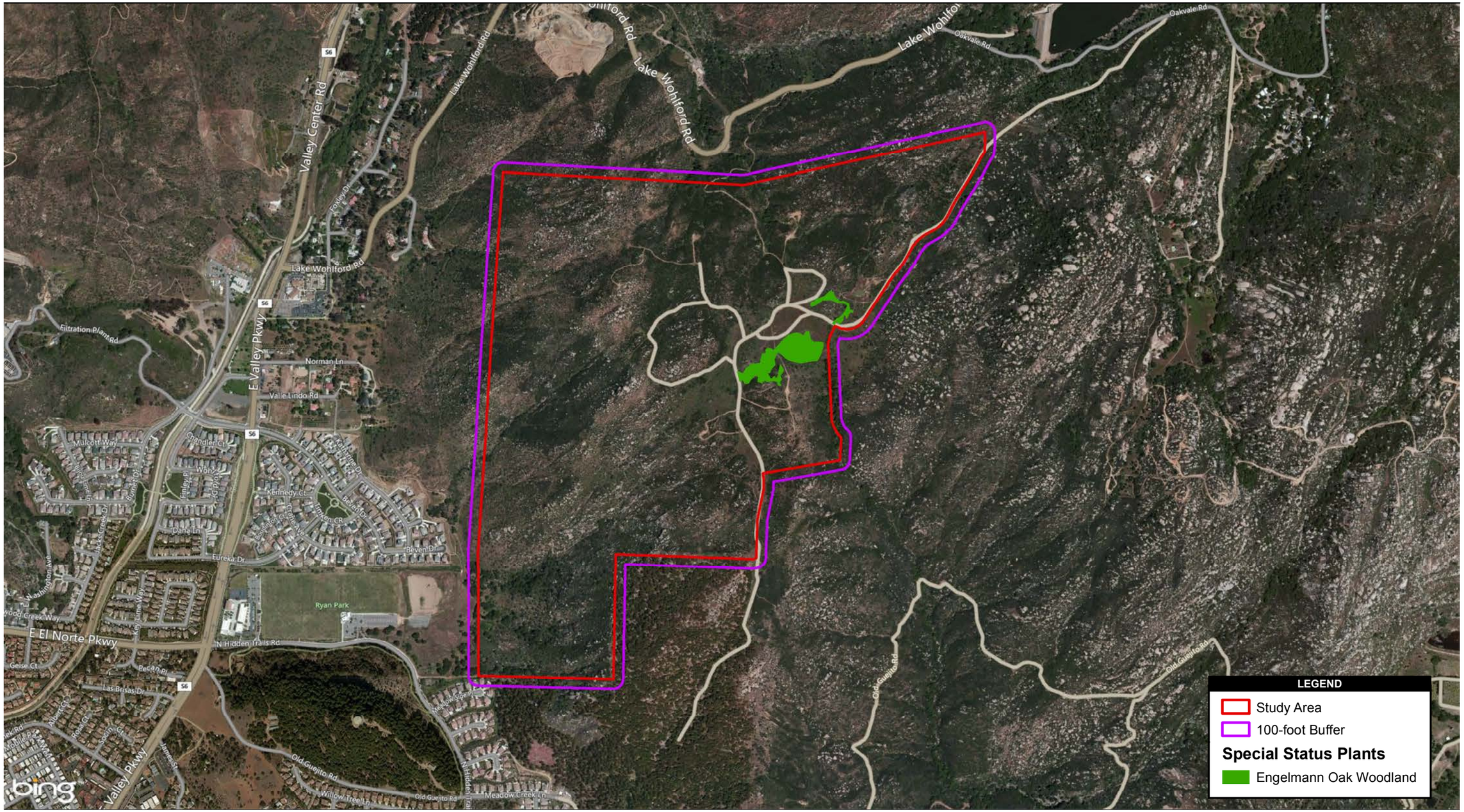
The following section discusses the special-status or sensitive plant species observed within the Property. A sensitive or special-status plant species is listed or proposed for listing as threatened or endangered by a federal or state agency, included on the CNPS Inventory of Rare and Endangered Plants, or included on the County of San Diego Sensitive Plant List.

One special-status plant species, Engelmann oak, was identified on the Property during 2014 and 2015 surveys.

Engelmann Oak *(Quercus engelmannii)*

CRPR 4.2, County List D, North County Plan Covered Species

Engelmann oak is a perennial deciduous tree that grows 16 to 26 feet high in oak woodlands or grassland habitats. Engelmann oak often occurs with coast live oak (*Quercus agrifolia*), in savannah-like habitats with annual grasses, or in areas where white sage (*Salvia apiana*) occurs. It is a drought-tolerant oak, and will regrow new leaves following rain after going dormant.



Source: ESRI 2014; BING 2014

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Scale: 1:12,000; 1 inch = 1,000 feet

Figure 10
Special Status Plant Species

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Reiser (1994) indicates that Engelmann oak is relatively stable in Southern California, but reproduction has been limited as a result of cattle grazing and herbivory by small mammals and deer. The introduction of feral pig (*Sus scrofa*) in the County in the past few years and wild turkey (*Meleagris gallopavo*) in the early 1990s further causes problems with oak reproduction, since they both consume acorns. Engelmann oak is known to hybridize with scrub oak (*Quercus berberidifolia*) (Baldwin et al. 2012).

Within the Property, Engelmann oak occurs with California buckwheat and California sagebrush in the central portion of the site. Individuals were also mapped with coast live oak in the vicinity of the old pond.

4.2.2 Special-Status Plant Species with High Potential to Occur

Special-status plant species were evaluated for potential to occur on the Property based on habitats present and the locations of known recent occurrences (Appendix B). Based on the vegetation communities occurring on the Property, elevation, soils, and distribution of species within the vicinity, few rare plants have potential to occur within the Property. Vegetation mapping surveys in spring 2014 and 2015 did not result in identification of sensitive herbaceous annual plants due to the poor plant growth of the season.

4.2.3 Invasive Plants

A total of 47 nonnative plant species have been observed on the Property. Nonnative plants are present throughout the Property, but the greatest amounts are found along roads and trails and around grassy areas. The nonnative annual species found on the Property have been established in this region for many years. Nonnative shrubs and trees are less prevalent on the site. A number of these nonnative species, although invasive, are not considered as high priority for mapping and removal. Removing nonnatives on the Property without controlling the source populations would only temporarily control their populations. Additionally, many of the species have become "naturalized" in Southern California. Target nonnative species were selected based on their invasive potential and ability for management. Table 5 describes the nonnative plants observed on the Property that are highly recommended for removal from the Property. Invasive plants are mapped and displayed in Figure 11.

Table 5. Nonnative Plant Species with High Priority for Removal on the Bottle Peak Property[1]

Common Name	Scientific Name	Cal-IPC Rating[2]
Silver Wattle	*Acacia dealbata*	Moderate
Red Gum	*Eucalyptus camaldulensis*	Limited
Fennel	*Foeniculum vulgare*	High
Gazania	*Gazania linearis*	Moderate
Natalgrass	*Melinis repens* ssp. *repens*	None
Tree Tobacco	*Nicotiana glauca*	Moderate
Wavyleaf Beeblossum	*Oenothera sinuosa*	None
Milkthistle	*Silybum marianum*	Limited
Tamarisk	*Tamarix ramosissima*	High

[1] Species are included in this table due to their potential for being invasive and the possibility that they could be removed from the site since they currently remain in low enough numbers or area for removal to be feasible.

[2] Source: Cal-IPC Invasive Plant Inventory Database, updated June 2012. Overall rating listed for southwest region, factoring impact, invasiveness, distribution, and documentation level.

Inventory Categories

High: Species have severe ecological impacts, are conducive to moderate to high rates of dispersal/establishment, and most are widely spread.

Moderate: Species have substantial and apparent, but generally not severe, ecological impacts; are conducive to moderate to high rates of dispersal, though establishment is generally dependent on ecological disturbance; and distribution may range from limited to widespread.

Limited: Species are invasive, but their ecological impacts are minor on a statewide level, or there was not enough information to justify a higher score; have low to moderate rates of invasiveness; and are generally limited but may be locally persistent and problematic.

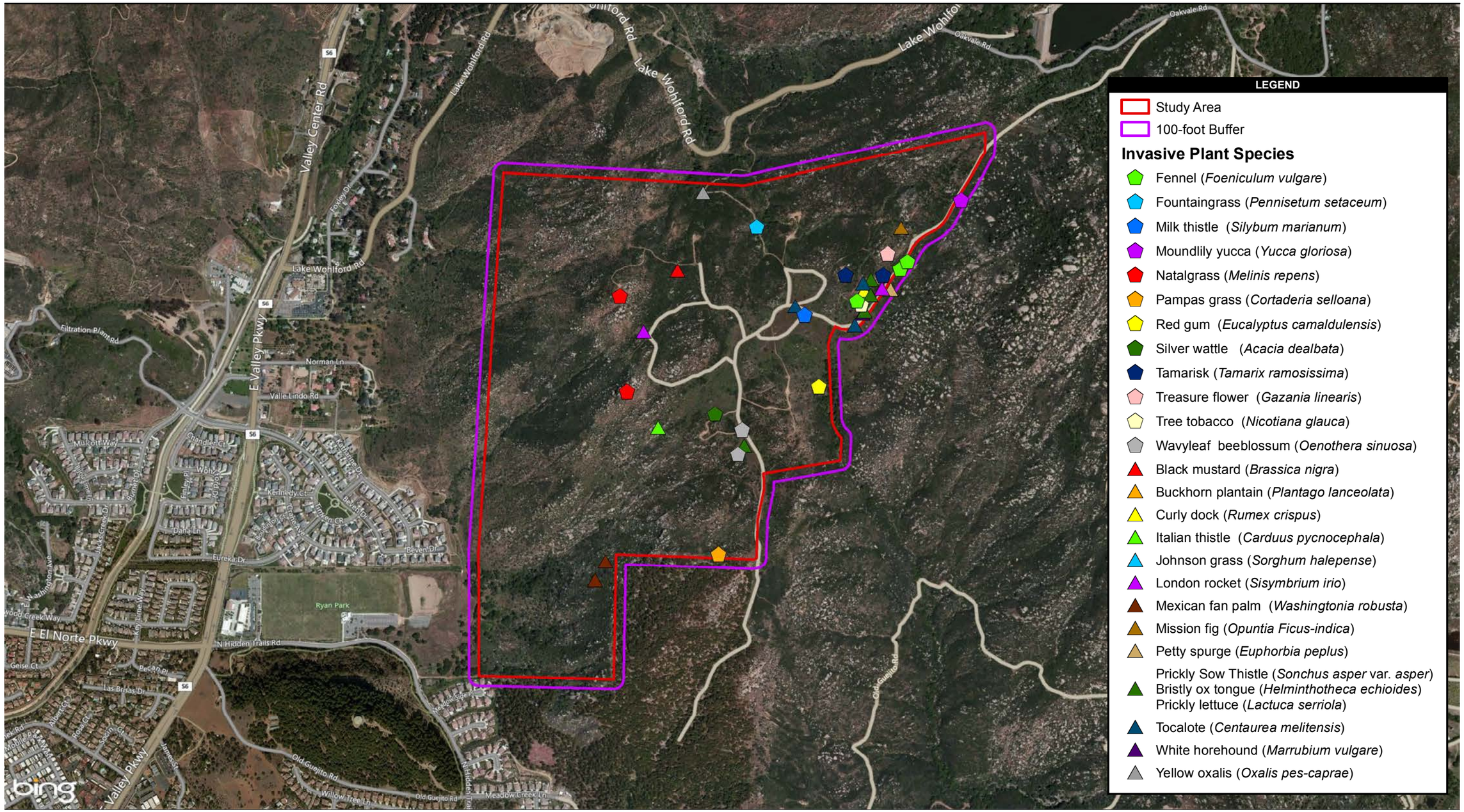
None: Species has not been listed by Cal-IPC.

Silver Wattle (*Acacia dealbata*)

Silver wattle is native to southeastern Australia but has been found in disturbed areas, particularly roadsides throughout California. One individual of silver wattle was found along the old loop road in the southeast portion of the Property and should be removed. This individual tree was not of large size; however, this species is known to send out roots up to several meters away that can resprout after the main trunk is removed. Complete removal of the tree may require treatment with herbicide and repeated removal of resprouts. This individual can be cut and treated with Roundup. It can be treated any time but treatment would be most effective during the active growing season in spring. The tree should be cut and the stump painted with a Roundup solution. If runners are observed, their foliage should be treated with Roundup spray. The area around the stump should be monitored to ensure that additional sprouts do not emerge.

Pampas Grass (*Cortaderia selloana*)

Pampas grass has been found on the southern edge of the Property within and adjacent to the avocado grove there. It appears that at least one clump is growing north of the property line. Pampas grass can be removed by cutting it back and treating it with Roundup during the spring



Source: ESRI 2014; BING 2014

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Scale: 1:12,000; 1 inch = 1,000 feet

Figure 11
Invasive Plant Species Locations

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active growing season. It will require multiple treatments and it may require digging out of the root system if it continues to regenerate.

Red Gum (*Eucalyptus camaldulensis*)

Red gum is another native to Australia that is occasionally planted in cultivation but persists and spreads in some areas of California. It occurs along the eastern edge of the Property. While the Cal-IPC inventory categorizes eucalyptus species as having overall ratings of "limited" or "moderate," they are ranked as a high priority for removal/control on the Property because they are large, nonnative species. These trees could be cut for removal at any time of the year. Any resprouts could be treated with herbicide or physically removed. There are questions about the value of eucalyptus as raptor nesting locations and whether the trees should be removed. The conclusion is that the more natural vegetation is preferable due to the value of native trees and shrubs in providing nest sites for smaller birds that might be displaced by eucalyptus (Suddjian 2004).

Fennel (*Foeniculum vulgare*)

Fennel is native to southern Europe but has spread in wide portions of California. It has a Cal-IPC rating of high due to its ability to spread. Fennel reproduces by root crown and seed. In some locations, particularly parts of Marine Corps Base Camp Pendleton, fennel is a widespread invasive that has altered landscapes or prevented the recovery of native vegetation from disturbance. Cutting, mowing, and chopping the plants leave the roots intact and ready to regrow. Repeated cuts may assist in killing the plants but the interval between the cuts must be short. Cutting while plants are producing seed will promote rather than reduce dispersal. Prescribed burning alone is not an effective means for removal of the plants, but fall burning with herbicide sprays the following two springs can reduce fennel cover by 95 to 100% (Bossard et al. 2000). Roundup sprayed on the plants is reported to reduce fennel cover by 75 to 80%. On the Property, fennel that occurs near the small earthen dam on-site should be removed. Use of Roundup would be most effective during the spring active growing season.

Gazania (*Gazania linearis*)

Gazania is an herbaceous perennial native to South Africa. It is widely used in ornamental cultivation in Southern California. It occasionally escapes from cultivation in more coastal areas of Northern California and throughout Southern California. The Cal-IPC invasive species rating for gazania is moderate due to its reported ability to escape into grassland and creekside vegetation. On the Property, this species was observed growing near the road to the northeast of the dry pond on-site in what may have been an intentional planting sometime in the past. A

relatively low number of plants are growing there, and should be removed to reduce spreading potential. Because of its relatively low numbers, removal can occur mechanically any time of the year with follow-up to observe - any resprouts from the root bases.

Natalgrass (*Melinis repens* ssp. *repens*)

Natalgrass is a pink-colored grass that apparently spreads by wind and is native to South Africa. This species is an invasive pest in a number of locations world-wide including other parts of California, Australia, French Polynesia, Hawaii, and Florida. It has not been rated for the Cal-IPC list of invasive plants. This plant was found growing in cracks in rocks on the higher peaks on the Property. It is a relatively recent invader to San Diego County. However, due to its ease at dispersing to the isolated portions of the Property, if removed, it will need to be monitored to ensure it does not reinvade. It currently does not form dense stands in potential habitat areas. Efforts should be carried out to ensure that it remains only in low numbers. It can be controlled through physical removal and chemical treatment (Sylvan Kaufman 2014) during the spring active growing season, particularly prior to seed set.

Tree Tobacco (*Nicotiana glauca*)

Tree tobacco is a native to South America that has invaded disturbed areas throughout the southwestern United States. The Cal-IPC rating for invasiveness is moderate. This species was observed in the area near the off-site avocado orchard on the southern portion of the Property. Tree tobacco is generally associated with disturbed habitats, but it can spread into other parts of the Property along roads and trails. Control through the use of Roundup appears to work as foliar spray, drizzle, or cut stump application (Oneto et al. 2005) during the spring active growing season.

Wavyleaf Beeblossom (*Oenothera sinuosa*)

Wavyleaf beeblossom is native to Oklahoma and Texas but has spread through the Mojave Desert and most of California. It has not been rated in the Cal-IPC inventory of invasive plants. Wavyleaf beeblossom is an invasive species of concern in other locations of the southwestern United States. On the Property, it was found in two locations in the southeastern portion along the main north-south road near the southern leg of a loop road in that area. It is a perennial herb that would need to be excavated to remove it, and removal efforts would be necessary in consecutive periods to prevent reestablishment. Wavyleaf beeblossom is not easily recognized unless it is in flower. It should be removed during the spring active growing season when flowers make it more visible.

Fountaingrass (*Pennisetum setaceum*)

Fountaingrass occurs along the northern road into the site. It is not widespread on the site at this point. It is a rapidly spreading species that can be removed at this early stage of invasion of the Property. It will require spraying with Roundup and mechanical removal during winter months in order to make an effort to remove it before it flowers and disperses seed.

Milkthistle (*Silybum marianum*)

Milkthistle is a large, prickly thistle that can grow in dense thickets creating an impenetrable mass. It is native to the Mediterranean and has spread in pastures, moist soils and clays through large portions of California. Though its level of invasiveness is listed as limited in the Cal-IPC invasive plant inventory, its removal on-site should be a high priority. It can be dug up but the seeds must be gathered as well and it must be monitored for consecutive seasons to ensure that new seeds do not germinate. Removal would be best prior to flowering and seed set during the late winter months.

Tamarisk (*Tamarix ramosissima*)

Tamarisk is native to Asia but has been introduced and has spread throughout much of North America. It is a very invasive species in riparian habitats throughout its occurrences. It not only modifies the vegetation communities and displaces native species of plants but its presence also affects animals inhabiting riparian vegetation. On the Cal-IPC list of invasive species, it is rated as high. It was observed along the northeast access road approximately 0.2 mile from the northeastern boundary of the Property. It should be removed from the Property and an examination should consider its potential source location. Mechanical removal is preferred; however, this species will need to be monitored for retreatment when the root systems resprout. It can be cut and treated at any time of the year.

4.3 WILDLIFE

A total of 115 wildlife species were detected and/or observed during surveys conducted in 2014 and 2015: 24 invertebrates, 15 reptiles, 55 birds, and 21 mammals. A total of 14 special-status wildlife species were observed or detected, four of which are covered under the draft North County Plan. A comprehensive list of wildlife species observed or detected on the Property is included in Appendix B.

4.3.1 Invertebrates

Several species of invertebrates were captured during trapping efforts for other wildlife. Additionally, various invertebrates were observed during butterfly and other surveys. Non-butterfly invertebrates were identified to genus or species when possible. These included wolf spiders (Family Lycosidae), windscorpions (Order Solifugae), Pacific coast ticks (*Dermacentor occidentalis*), dragonflies (Suborder Anisoptera), true crickets (Family Gryllidae), Jerusalem crickets (Family Stenopelmatidae), European earwigs (*Forficula auricularia*), darkling beetles (*Eleodes* sp.), figeater beetle (*Cotinis mutabilis*), ants (Family Formicidae), velvet ants (*Dasymutilla* sp.), tarantula hawks (*Pepsis* spp.), western honey bee (*Apis mellifera*), and centipedes (Class Chilopoda).

Butterflies

Ten species of butterfly were detected during butterfly surveys on the Property: mournful duskywing (*Erynnis tristis*), funereal duskywing (*Erynnis funeralis*), rural skipper (*Ochlodes agricola*), checkered white (*Pontia protodice*), mountain mahogany hairstreak (*Satyrium tetra*), hedgerow hairstreak (*Satyrium saepium*), marine blue (*Leptotes marina*), Bernardino dotted-blue (*Euphilotes bernardino*), Behr's metalmark (*Apodemia virgulti*), and lady sp. (*Vanessa* sp.).

Hermes copper is a federal Species of Special Concern and a Group 1 County Sensitive Species. The host plant of Hermes copper is spiny redberry (*Rhamnus crocea*). Hermes copper is found in areas of mixed chaparral with *Rhamnus crocea* growing in association with California buckwheat (*Eriogonum fasciculatum*). *Rhamnus crocea* has not been found during surveys to this point, but *Eriogonum fasciculatum* is widespread on the Property, and habitat is otherwise suitable for Hermes copper. Although all three butterfly surveys were conducted during the flight season of Hermes copper, none were observed.

4.3.2 Herpetofauna

Amphibians

No amphibian species were detected during pitfall trap array or visual encounter surveys. Amphibians that have potential to be present on the Property include Baja California treefrog (*Pseudacris hypochondriaca*), western toad (*Bufo boreas*), western spadefoot (*Spea hammondii*), and garden slender salamander (*Batrachoseps major major*). Western spadefoot is a special-status species and is discussed in further detail in Section 4.3.6.

Amphibian detections may have been limited by several factors. Amphibians are often active and/or detected following rain storms or in areas where there is permanent/temporary water

source. Pitfall trap surveys were conducted in April, May, and June 2014, when there was very little precipitation. Two rain events in April resulted in 1.02 inches of rain (Western Regional Climate Center 2014), but surveys were not conducted immediately following these rain events, and water did not remain ponded on the Property. Additionally, conditions have been dry for the past year leading up to the 2014 pitfall trap surveys, with rainfall approximately 61% below the past approximately 30-year average (Western Regional Climate Center 2014). These dry conditions have likely limited activity and decreased the detection probability of amphibian species. Also confounding the issue is the low capture rate of most herpetofauna species. Plus, nocturnal visual encounter surveys were not conducted, which may have resulted in detection of species both visually and aurally.

Reptiles

A total of 15 reptile species were detected during pitfall trap array and visual encounter surveys (Appendix B): nine lizard species and six snake species. A total of 98 reptile captures representing 11 species were recorded during the four pitfall trap surveys (Table 6). These captures consisted of seven species of lizards and four species of snakes. During visual encounter surveys, 11 species were also detected (Table 7); however, four reptile species (two snake and two lizard species) detected during visual encounter surveys were not detected in pitfall trap arrays.

Table 6. Reptile Pitfall Array Captures (April – June 2014)

Common Name	Scientific Name	Array (No. of Captures)				Total No. of Captures
		1	2	3	4	
Lizards						
Belding's Orange-Throated Whiptail	*Aspidoscelis hyperythra beldingi*	1	10	5	11	27
Coast Horned Lizard	*Phrynosoma blainvillii*		1			1
Coastal Whiptail	*Aspidoscelis tigris stejnegeri*	12	5		3	20
Coronado Island Skink	*Plestiodon skiltonianus interparietalis*	4	1	1		6
Side-Blotched Lizard	*Uta stansburiana*				4	4
Southern Alligator Lizard	*Elgaria multicarinata*	1		1		2
Western Fence Lizard	*Sceloporus occidentalis*	7	11	4	7	29
Snakes						
California Striped Racer	*Coluber lateralis lateralis*		1		3	4
Coast Patch-Nosed Snake	*Salvadora hexalepis virgultea*	1		1	1	3
Southern Pacific Rattlesnake	*Crotalus oreganus helleri*			1		1
Southwestern Speckled Rattlesnake	*Crotalus mitchellii pyrrhus*			1		1
Total Number of Captures		**26**	**29**	**14**	**29**	**98**

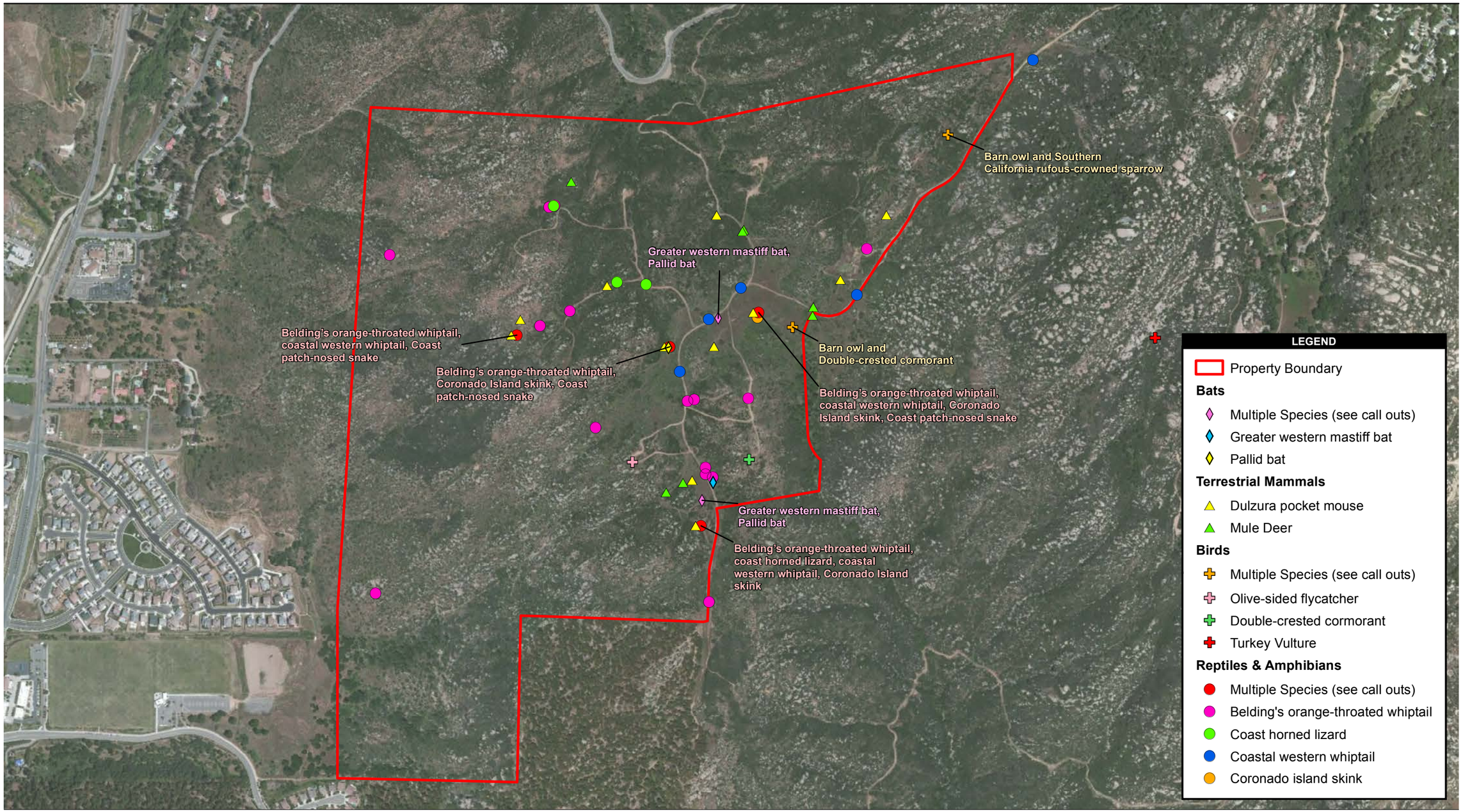
Table 7. Incidental Reptile Detections

Common Name	Scientific Name
Lizards	
Belding's Orange-Throated Whiptail	*Aspidoscelis hyperythra beldingi*
Coast Horned Lizard	*Phrynosoma blainvillii*
Coastal Whiptail	*Aspidoscelis tigris stejnegeri*
Coronado Island Skink	*Plestiodon skiltonianus interparietalis*
Granite Night Lizard	*Xantusia henshawi*
Granite Spiny Lizard	*Sceloporus orcutti*
Side-Blotched Lizard	*Uta stansburiana*
Western Fence Lizard	*Sceloporus occidentalis*
Snakes	
California Kingsnake	*Lampropeltis getula californiae*
Gopher Snake	*Pituophis catenifer*
Southern Pacific Rattlesnake	*Crotalus oreganus helleri*

Lizard species accounted for approximately 91% of the pitfall trap array captures, and were the most abundant reptile seen during visual encounter surveys. Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), western fence lizard (*Sceloporus occidentalis*), and coastal whiptail (*Aspidoscelis tigris stejnegeri*) were the three most abundant lizard species captured on the Property (Table 6). These species were distributed throughout the Property. Whiptails were often seen on the open trails on the Property (Figure 12). Visual encounter surveys detected two additional lizard species that were not detected in the pitfall arrays: granite night lizard (*Xantusia henshawi*) and granite spiny lizard (*Sceloporus orcutti*) (Table 7). These lizard species were detected while searching the granite outcrops present on the Property. Notable lizard detections included Belding's orange-throated whiptail, coast horned lizard (*Phrynosoma blainvillii*), and Coronado Island skink (*Plestiodon skiltonianus interparietalis*). These three species are special-status species and are discussed in further detail in Section 4.3.5.

Snake species accounted for approximately 9% of the pitfall trap array captures. California striped racer (*Coluber lateralis lateralis*) and coast patch-nosed snake (*Salvadora hexalepis virgultea*) were the two most abundant species captured on the Property (Table 6). Visual encounter surveys detected two additional snake species that were not detected in the pitfall arrays: California kingsnake (*Lampropeltis getula californiae*) and gopher snake (*Pituophis catenifer*) (Table 7). The species detected are likely present throughout the Property, and are some of the more common species in the County. Coast patch-nosed snake was the only special-status snake species detected, and is discussed in further detail in Section 4.3.5.

The combination of pitfall trap arrays and visual encounter surveys detected the majority of reptile species expected to occur on the Property. As mentioned previously for amphibians, the extended drought may be influencing lizard and snake species abundance and movement patterns, and could be lowering species detection rates. Most herpetofauna species have low



Source: ESRI 2014; BING 2014

750 375 0 750 Feet

Scale: 1:9,000; 1 inch = 750 feet

Figure 12
Special Status Wildlife Species

Path: P:\2013\60278233_DPR_2012\06GIS\6.3_Layout\TO_12\Report Figures\Biodiversity_Report\Fig12_Animal_Species.mxd, 4/27/2015, SorensenJ

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capture rates, and it may take 10 to 12 weeks of sampling per year for several years to detect all herpetofauna species on a given site (Fisher et al. 2008). Additionally, any snake species longer than the depth of the pitfall buckets can climb out of the bucket. Reptile capture rates were approximately 2.6 captures per bucket versus approximately 4.8 captures per box funnel trap for this study. Future survey efforts should consider modifying the pitfall trap array design to include additional box funnel traps. The box funnel traps also have an added benefit of supplementing small mammal data (see Section 4.3.4), and had higher small mammal capture rates than buckets for this study (0.1 captures per bucket versus 2.5 captures per trap).

4.3.3 Birds

During surveys of the Property in 2014, a total of 79 bird species were detected, six of these being incidental detections and not detected during avian point count surveys. The most common species detected during diurnal point counts were Bewick's wren (*Thryomanes bewickii*), western scrub jay (*Aphelocoma californica*), wrentit (*Chamaea fasciata*), California thrasher (*Toxostoma redivivum*), California towhee (*Melozone crissalis*), lesser goldfinch (*Spinus psaltria*), and house finch (*Haemorhous mexicanus*). However, as depicted in Table 8, several other species not mentioned above have high totals and appear to be more common than some of the above-mentioned species. Species such as double-crested cormorant (*Phalacrocorax auritus*), turkey vulture (*Cathartes aura*), and common raven (*Corvus corax*) were typically detected flying over the Property in groups, but were not detected on every survey. Therefore, a single detection could have consisted of many individuals. Species such as yellow-rumped warbler (*Setophaga coronata*), fox sparrow (*Passerella iliaca*), and white-crowned sparrow (*Zonotrichia leucophrys*) also appear to be very common; however, only during the fall surveys. These species are not resident and only occupy the Property for a portion of the year. Five species were detected during nocturnal surveys: black-crowned night-heron (*Nycticorax nycticorax*), great horned owl (*Bubo virginianus*), barn owl (*Tyto alba*) common poorwill (*Phalaenoptilus nuttallii*), and northern mockingbird (*Mimus polyglottos*). Five special-status bird species were detected during 2014 surveys: double-crested cormorant, turkey vulture, barn owl, olive-sided flycatcher (*Contopus cooperi*), and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) (Figure 12).

Of these species, only the southern California rufous-crowned sparrow and barn owl are likely residents and breeders within the Property boundary. However, no breeding behaviors were observed while surveyors were on-site. The double-crested cormorant was only observed flying over the Property, and the olive-sided flycatcher was a migrant using the Property as stop-over habitat during migration. Turkey vultures likely use the Property for foraging and potentially for roosting, but nesting is likely limited by human disturbance around suitable rocky outcroppings.

Table 8 is a summary of avian survey results from spring and fall, 2014. The detected species are listed, with the number of individuals documented under each point-count location (1 through 8). A total of 815 individual birds were detected during 2014 point-count surveys. As noted in the table, five bird species were detected during nocturnal surveys.

Table 8. Avian Point Count Survey Results

Species Common Name	Point Count Survey Location								Total
	1	2	3	4	5	6	7	8	
Acorn Woodpecker		1						1	2
American Crow	1	3	7			1			12
American Kestrel					1				1
American White Pelican							15		15
Anna's Hummingbird	7		1	2	1	5		1	17
Ash-throated Flycatcher	1		1	1	1	5		4	13
Barn Owl*	1	2						2	5
Bewick's Wren	10	1	7	6	4	8	7	5	48
Black Phoebe								1	1
Black-chinned Sparrow					1	1			2
Black-crowned Night-Heron*			1	1	1				3
Black-headed Grosbeak	2	8	2					1	13
Black-throated Gray Warbler						1		1	2
Blue-gray Gnatcatcher	1		4		1		3	4	13
Brewer's Blackbird						4			4
Bullock's Oriole	1	3							4
Bushtit		6				3	3		12
California Thrasher	5	2	2	4	1	1	3	3	21
California Towhee	7	8	2		3	4	2	6	32
Canyon Wren								3	3
Cassin's Kingbird						1		1	2
Cliff Swallow	1								1
Common Poorwill*					2		1		3
Common Raven	1	3	6			14	4	1	29
Cooper's Hawk	1							2	3
Costa's hummingbird	1	2					1	3	7
double-crested cormorant		3	1	17			4		25
Fox Sparrow	1	2	5	2	3	1	4	1	19
Great Horned Owl*		2							2
Greater Roadrunner			1	2	1	1			5
Hermit Thrush				2				2	4
Hooded Oriole		2							2
House Finch	10	23	1		19		1	41	95
House Wren	6	6						1	13
Lawrence's goldfinch				2	2			1	5

Species Common Name	Point Count Survey Location								Total
	1	2	3	4	5	6	7	8	
Lazuli Bunting	1	1		1					3
Lesser Goldfinch	2	14	1	4	4	5	4	1	35
Lincoln's Sparrow		1							1
MacGillivray's Warbler								2	2
Mourning Dove				2	1		4	1	8
Nashville Warbler								1	1
Northern Flicker		1			4			2	7
Northern Mockingbird*		1						2	3
Northern Rough-winged Swallow						3			3
Nuttall's Woodpecker		3					1	3	7
Oak Titmouse	1							11	12
Olive-sided Flycatcher						1			1
Orange-crowned Warbler	2	4	2		1				9
Pacific-slope Flycatcher							1	5	6
Phainopepla								2	2
Pine Siskin			2					1	3
Red-shouldered Hawk								1	1
Red-tailed Hawk		2		2		1	2		7
Red-winged Blackbird						2			2
Rock Wren					1				1
Ruby-crowned Kinglet	1	2		2	1				6
Savannah Sparrow				1					1
Sharp-shinned Hawk	1			1					2
Southern California Rufous-crowned Sparrow	4								4
Spotted Towhee	9	3	1		1	2		1	17
Townsend's Warbler	1	1		1					3
Turkey Vulture				12	15	3	1	9	40
Warbling Vireo		1						1	2
Western Kingbird							2	2	4
Western Scrub-Jay		4	6	2	6	10	3	4	35
Western Tanager		1					2		3
Western Wood-Pewee			1						1
White-crowned Sparrow	8	11	15				7	1	42
White-throated Swift								15	15
Wilson's Warbler		6			1			4	11
Wrentit	4		13	3	1	5	1	3	30
Yellow Warbler								1	1
Yellow-rumped Warbler	6	13	1	3	7	3	6	7	46
Total	**97**	**146**	**83**	**73**	**84**	**85**	**82**	**165**	**815**
Total Unique Species per Station ID	**29**	**34**	**23**	**22**	**26**	**24**	**24**	**44**	**73**

*Bird species detected during nocturnal surveys.

Point-count survey location 8 had the highest species diversity and richness. This location is dominated by coast live oak woodlands and Diegan coastal sage scrub, and is located near the southwestern portion of the Property. Point-count survey location 2 encompassed a variety of habitats, including Engelmann and coast live oak woodlands, southern mixed chaparral, and Diegan coastal sage scrub. This point had the second highest species diversity and richness.

4.3.4 Mammals

Small Mammals

Six small mammal species were captured during trapping from June 2 through June 6, 2014. A total of 222 traps were set and there were 136 captures. Some of these small mammals were likely the same individual going into the traps on consecutive nights, but no animals were marked. Table 9 summarizes the species of the small mammals captured per small mammal trapping grid. Cactus mouse (*Peromyscus eremicus*) had the greatest number of captures, followed by the Dulzura pocket mouse (*Chaetodipus californicus femoralis*).

Table 9. Results of Small Mammal Trapping

Common Name	Scientific Name	Trap Grid								Total
		1	2	3	4	5	6	7	8	
Cactus mouse	*Peromyscus eremicus*	8	1	10			14		3	36
California mouse	*Peromyscus californicus*	6			7	4	4		4	25
California towhee	*Melozone crissalis*							1		1
Deer mouse	*Peromyscus maniculatus*		3					9		12
Dulzura kangaroo rat	*Dipodomys simulans*	2	1	14				5		22
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	10		2	13	5	1	2	2	35
Large-eared woodrat	*Neotoma macrotis*	2			1				2	5
Total		**28**	**5**	**26**	**21**	**9**	**19**	**17**	**11**	**136**

Four small mammal species were also captured in pitfall arrays. Table 10 summarizes small mammals captured within pitfall arrays. One of these species, western harvest mouse (*Reithrodontomys megalotis*), was not captured during small mammal trapping and, thus, seven different small mammal species were captured within the Property. One additional small mammal, brush mouse (*Peromyscus boylii*), was not captured in traps, but several large clump nests were located in large oak trees. Brush mouse constructs large stick nests, often in oak trees. Therefore, eight different small mammal species were detected within the Property.

During small mammal trapping, one California towhee was incidentally captured and released unharmed.

Table 10. Small Mammals Captured in Pitfall Arrays

Common Name	Scientific Name	Array				Total
		1	2	3	4	
California Mouse	*Peromyscus californicus*		4			4
Dulzura Kangaroo Rat	*Dipodomys simulans*	1				1
Dulzura Pocket Mouse	*Chaetodipus californicus femoralis*	1	3	10	7	21
Western Harvest Mouse	*Reithrodontomys megalotis*	5				5
Total		**7**	**7**	**10**	**7**	**31**

Medium and Large Mammals

Wildlife Cameras

For the spring session, all three wildlife cameras were run from April 11 through May 12, 2014. They were checked on April 21, 2014, to ensure that they were working correctly. The cameras were removed on May 12, and were checked to make sure they had been working. All data was downloaded and reviewed.

For the summer session, all cameras were run from July 2 through August 1, 2014. The cameras were removed on August 1, 2014, and all data was downloaded and reviewed.

For the fall session, all cameras were run from October 1 through November 1, 2014. The cameras were removed on November 1, 2014, and all data was downloaded and reviewed.

For the winter session, all cameras were run from December 23, 2014 through January 28, 2015. The cameras were removed on January 28, 2015, and all data was downloaded and reviewed. Additionally, the posts that had been cemented in the ground to secure the cameras were removed.

Several mammal and bird species were detected on the three wildlife cameras. Species detected on wildlife cameras in approximate order of abundance based on the number of photographs of each species are coyote (*Canis latrans*), Audubon's cottontail (*Sylvilagus audubonii*), gray fox (*Urocyon cinereoargenteus*), various avian species (red-tailed hawk [*Buteo jamaicensis*], California quail [*Callipepla californica*], lesser goldfinch, house finch, hermit thrush [*Catharus guttatus*], greater roadrunner [*Geococcyx californianus*], California towhee,white-crowned sparrow, western scrub-jay, and California thrasher), bobcat (*Lynx rufus*), striped skunk (*Mephitis mephitis*), mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), and an unknown species of wood rat. Mule deer was the only special-status wildlife species detected, and it was detected on all three wildlife cameras (Figure 12). Table 11 details the number of photographs taken per wildlife camera per species.

Table 11. Species Photographs Taken at Wildlife Camera Stations

Wildlife Camera Station ID	Number of Photographs Taken
Audubon's cottontail	
1	21
2	64
3	18
Total	**103**
Bird Species	
1	53
3	27
Total	**80**
Bobcat	
1	22
2	40
3	10
Total	**72**
Coyote	
1	1,070
2	1,790
3	2,038
Total	**4,898**
Gray fox	
1	53
2	1
3	40
Total	**94**
Mule deer	
1	6
2	24
3	6
Total	**36**
Raccoon	
1	3
2	8
3	7
Total	**18**
Striped skunk	
1	5
2	9
3	55
Total	**69**
Total Photos (All Species)	**5,370**

Tracking Stations

For the spring session, tracking stations were set on April 15 and checked on April 17, 2014. For the summer session, tracking stations were set on July 2 and checked on July 3, 2014. For the fall session, tracking stations were set on October 1 and checked on October 2, 2014. For the winter session, tracking stations were set on December 23 and checked on December 24, 2014. All

tracking sessions detected similar species regardless of the time of year, with no new species detected with tracking stations compared to wildlife cameras. Coyote was the most commonly detected species at tracking stations, along with multiple species of bird and rodent tracks. Since the tracking stations were placed along trails or dirt roads, and checked the following morning, more mobile species, such as coyotes, were the most commonly detected.

Bats

During spring and summer active and passive bat surveys, seven bat species were detected. During the active surveys, no new species of bats were identified when compared to the passive surveys. However, the active surveys resulted in better estimates of relative abundance and a better understanding of Property use and habitat associations. Generally, the Property does not seem to support significant bat roosting habitat. Western pipistrelle bats (*Parastrellus hesperus*) were observed emerging from the higher rocky outcrops and possibly from the larger oak trees, but no other species were observed roosting within the Property. The majority of bats spent little time foraging in the area, but were observed "commuting" through the area in both southern and northern routes. Presumably, the bats going south were headed toward Lake Wohlford to forage (though this was not confirmed). Table 12 details the species, number of calls, and frequency of occurrence during passive bat surveys in April and June 2014.

Table 12. Results of Passive Bat Surveys during Spring 2014

Species	Common Name	Number of Calls		Frequency of Occurrence	
		Site #1	Site #2	Site #1	Site #2
April					
Eptescus fuscus	Big Brown Bat	1	3	20.0%	18.8%
Parastrellus hesperus	Western Pipistrelle	4	13	80.0%	81.3%
June					
Eptescus fuscus	Big Brown Bat	1	17	5.2%	23.6%
Myotis ciliolabrum	Small-Footed Myotis	2	0	10.5%	0.0%
Myotis yumanensis	Yuma Myotis	12	22	63.2%	30.6%
Parastrellus hesperus	Western Pipistrelle	4	33	21.0%	45.8%

Data from passive bat surveys during spring 2014 indicates that western pipistrelle is the most common bat species within the Property, followed by Yuma myotis (*Myotis yumanensis*), big brown bat (*Eptescus fuscus*), and small-footed myotis (*Myotis ciliolabrum*). Table 13 details the species, number of calls, and frequency of occurrence during bat surveys during the summer in July 2014.

Table 13. Results of Passive and Active Bat Surveys during Summer 2014

Species	Common Name	AnaBat Passive Surveys				Active Surveys	
		Number of Calls		Frequency of Occurrence			
		Site #1	Site #2	Site #1	Site #2	10-Jul	16-Jul
Antrozous pallidus	Pallid Bat	12	14	16.4%	20.9%	6	4
Eptescus fuscus	Big Brown Bat	15	23	20.5%	34.3%	4	14
Myotis ciliolabrum	Small-Footed Myotis	4	0	5.5%	0.0%	0	0
Myotis yumanensis	Yuma Myotis	22	10	30.1%	14.9%	32	18
Parastrellus hesperus	Western Pipistrelle	7	12	9.6%	17.9%	25	26
Tadarida brasiliensis	Mexican Free-Tailed Bat	12	5	16.4%	7.5%	14	6
Eumops perotis	Greater Western Mastiff Bat	1	3	1.4%	4.5%	0	1

When data was combined from passive and active bat surveys in summer 2014, the most commonly detected bat species within the Property was Yuma myotis, followed by western pipistrelle, big brown bat, Mexican free-tailed bat (*Tadarida brasiliensis*), pallid bat (*Antrozous pallidus*), and greater western mastiff bat (*Eumops perotis*).

When both the spring and summer passive and active bat surveys were combined, western pipistrelle and Yuma myotis are the most common bat species detected within the Property. Within the Property there are a few large rock outcrops that western pipistrelle may use for roosting.

Table 14 details the species, number of calls, and frequency of occurrence during bat surveys during the fall 2014 session.

Table 14. Results of Passive and Active Bat Surveys during Fall 2014

Species	Common Name	AnaBat Passive Surveys				Active Surveys		
		Number of Calls		Frequency of Occurrence				
		Site #1	Site #2	Site #1	Site #2	5-Oct	7-Oct	11-Oct
Eptescus fuscus	Big Brown Bat	3	3	30%	30%	1	0	3
Myotis yumanensis	Yuma Myotis	2	3	20%	20%	0	0	1
Parastrellus hesperus	Western Pipistrelle	5	4	50%	40%	5	7	11

Data from passive bat surveys during fall 2014 indicates that the western pipistrelle is the most common species recorded, followed by the Yuma myotis and big brown bat. When data was combined from passive and active bat surveys in fall 2014, the most commonly detected bat species remain the same as with the passive surveys with no additional species detected.

When all three seasons (spring, summer, and fall) passive and active bat surveys were combined, the western pipistrelle is the most common species, followed by the Yuma myotis and big brown bat. Less common were the pallid bat and Mexican free-tailed bat. The small-footed myotis and greater western mastiff bat were rarely detected in the project area.

4.3.5 Special-Status Wildlife Observed

Fourteen special-status wildlife species were observed or detected within the Property during 2014 and 2015 surveys (Figure 12). Four of the detected species are covered under the draft North County Plan. Observed special-status species are discussed below.

4.3.5.1 Invertebrates

No special-status invertebrate species were observed during any survey on the Property.

4.3.5.2 Herpetofauna

Coronado island skink *(Plestiodon skiltonianus interparietalis)*
California Species of Special Concern, County Group 2

Coronado island skink is a subspecies of western skink known from San Diego County and Baja California. The known elevational range is sea level to 8,300 feet. Coronado island skink is a habitat generalist, occurring in a wide variety of plant associations, including coastal sage, chaparral, oak woodlands, piñon-juniper, riparian woodlands, and pine forests (Jennings and Hayes 1994; Stebbins 2003). Within these habitats they are restricted to more mesic micro-habitats. This small, secretive reptile is declining as a result of habitat loss due to urban development and agricultural expansion (Jennings and Hayes 1994).

Coronado island skink was detected in chaparral and scrub habitat on-site during surveys. It was captured in low numbers at pitfall trap arrays 1, 2, and 3 (Figure 12). This species likely inhabits most of the habitat throughout the Property.

Belding's orange-throated whiptail *(Aspidoscelis hyperythra beldingi)*
California Special of Special Concern, County Group 2, North County Plan Covered Species

In California, Belding's orange-throated whiptail is found on the west side of the Peninsular Ranges between sea level and 3,000 feet in the southernmost counties (CDFG 1988). Belding's orange-throated whiptail inhabits washes, streams, terraces, and other sandy areas associated with some perennial plants, open scrub, or coastal chaparral. The principal threat to this species

is loss of open sage scrub. Development of floodplains and stream terraces has also greatly contributed to this species' decline, as well as habitat fragmentation.

Belding's orange-throated whiptail was detected in the open chaparral and scrub habitat on-site during surveys. This species was most frequently observed during visual encounter surveys (Figure 12). It was also one of the most frequently trapped species on the Property. It was captured at every pitfall trap array (Figure 12). This species likely inhabits most of the open chaparral and scrub habitat throughout the Property.

Coastal western whiptail *(Aspidoscelis tigris stejnegeri)*
County Group 2

Coastal western whiptail is found in a variety of open habitats in California, including scrub, chaparral, woodland, and riparian areas. This subspecies is found in coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County.

Coastal whiptail was detected in the open chaparral and scrub habitat on-site during surveys. It was frequently observed during visual encounter surveys (Figure 12). It was also one of the most frequently trapped species on the Property. It was captured at pitfall trap arrays 1, 2, and 4 (Figure 12). This species likely inhabits most of the open chaparral and scrub habitat throughout the Property.

Coast horned lizard *(Phrynosoma coronatum blainvillei)*
California Species of Special Concern, County Group 2, North County Plan Covered Species

Coast horned lizard is endemic to extreme southwestern California, from Los Angeles County into Baja California (Stebbins 2003). In San Diego County, it is relatively widespread and locally common from the coast to the western edge of the desert (SDHS 1980). Coast horned lizard is most often found on sandy or friable soil with a variety of habitats, from sage scrub and chaparral to coniferous and broadleaf woodlands (Stebbins 2003). Habitat requirements include open areas for sunning, bushes for cover, and fine loose soil for rapid burrowing.

Coastal horned lizard was detected in the open chaparral and scrub habitat on-site during surveys. It was observed in the loose sandy soil along the trails in the Property during visual encounter surveys (Figure 12). It was also captured at pitfall trap array 2 (Figure 12). This species likely inhabits most of the open chaparral and scrub habitats where they coincide with sandy or friable soils on the Property.

Coast patch nosed snake *(Salvadora hexalepis virgultea)*
California Species of Special Concern, County Group 2

Coast patch-nosed snake occurs in California from the northern Carrizo Plains in San Luis Obispo County, south through the coastal zone, south and west of the deserts, and into coastal northern Baja California up to 7,000 feet in elevation (Marlow 2005). It occurs in semi-arid brushy areas within chaparral, desert scrub, washes, and sandy flats and rocky areas (Marlow 2005). This species seems to require at least a low shrub structure of minimum density; it is not found in habitats lacking this habitat characteristic (Jennings and Hayes 1994).

Coast patch nosed snake was detected in the open chaparral and scrub habitat during surveys. It was captured at pitfall trap arrays 1, 3, and 4 (Figure 12). This species likely inhabits most of the open chaparral and scrub habitats where they coincide with sandy or friable soils on the Property.

4.3.5.3 Birds

Double-crested cormorant *(Phalacrocorax auritus)*
CDFW Watch List

Double-crested cormorant is a yearlong resident along the entire coast of California and on inland lakes. Within San Diego County, this species occurs commonly as a nonbreeding visitor. It occurs year-round, but is far more abundant in fall and winter. It is a very occasional nester within the County, at Sweetwater Reservoir and San Diego Bay. The established nesting sites closest to the County include the Channel and Coronado Islands and the Salton Sea.

Double-crested cormorants are common in the coastal waters, bays, and inland ponds and lakes of San Diego County. The species requires undisturbed nest sites next to water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, or jetties. Perching sites include unvegetated areas. The species is declining in numbers primarily as a result of habitat destruction and boating and fishing activities. It is also susceptible to reduced nesting success from pesticides in the water.

This species was observed on multiple occasions flying over the Property to and from nearby Lake Wohlford (Figure 12).

Turkey vulture *(Cathartes aura)*
County Group 1

Turkey vulture is a highly migratory species, but the County lies within the overlap zone of the species' winter and summer ranges. Thus, the turkey vulture is present in the County year-round.

Turkey vultures are wide ranging birds that forage on the wing, searching for carrion in a variety of habitats. They nest in secluded rocky outcroppings, away from human activity. Many areas of San Diego County have suitable rocky substrates for nesting, but are not utilized for nesting due to frequent human disturbance.

This species was observed on multiple occasions flying over the Property and roosting on boulders on hilltops (Figure 12). The frequent use of the Property's peaks by hikers probably limits the Property's suitability for nesting.

Barn owl *(Tyto alba)*
County Group 2

Barn owl is a common, year-long resident in open habitats, including grassland, chaparral, riparian, and other wetlands. It occurs throughout California, from sea level to 5,500 feet, avoiding dense forests and open desert habitats. It is often found in the vicinity of human communities (Unitt 2004).

This species feeds primarily on mice, rats, voles, pocket gophers, and ground squirrels. It also eats shrews, insects, crustaceans, reptiles, and amphibians. Small birds, such as blackbirds, are important prey items in the winter. Barn owl hunts on the wing or from a perch, and also hovers and stoops on prey. It hunts in open fields, wetlands, and grasslands. For nesting and roosting, barn owls prefer quiet cavities, either in trees or on built structures such as barns and silos.

Barn owl was detected on two occasions during nocturnal surveys within the Property (Figure 12). On both detections, the owl was heard calling, and only once was its silhouette observed. There is suitable nesting and roosting habitat within the oak woodlands found within the Property.

Olive-sided flycatcher *(Contopus cooperi)*
California Species of Special Concern, County Group 2

Olive-sided flycatcher is an uncommon to common summer resident in a wide variety of forest and woodland habitats below 9,000 feet. It occurs throughout California, with the exception of the deserts, Central Valley, and other lowland valleys and basins. Its preferred nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine (Unitt 2004).

Olive-sided flycatcher requires large, tall trees, usually conifers, for nesting and roosting. It also requires lofty perches for singing and hunting, such as the dead tips or uppermost branches of the

tallest trees in the vicinity. This species hunts for flying insects over forest canopy or adjacent meadows, clearings, or shrub-covered slopes in wide-ranging flights from high, conspicuous perches.

In San Diego County, this species typically arrives in mid-April, and most have departed by early October. This species was observed on one occasion within the Property, most likely using the Property as stop-over habitat during migration (Figure 12).

Southern California rufous-crowned sparrow *(Aimophila ruficeps canescens)*
CDFW Watch List, County Group 1, North County Plan Covered Species

Southern California rufous-crowned sparrow is a resident species in San Diego County. This species prefers steep grassy or rocky slopes with open scrub at elevations from sea level to approximately 2,000 feet. Most of the species' population occurs in coastal sage scrub, although it can occupy other coastal scrub habitats.

Southern California rufous-crowned sparrow is not migratory, but territory size may increase during the post-breeding season. This bird is secretive, and forages and nests on the ground, usually near vegetative cover. Southern California rufous-crowned sparrow maintains year-round territories. As with many species found in coastal scrub habitats, this species is primarily threatened due to habitat loss and fragmentation.

Southern California rufous-crowned sparrows were detected only from one point-count survey location (Point 1); however, suitable habitat occurs within the Property (Figure 12). It is likely that this species occupies habitat on the Property that was not surveyed.

4.3.5.4 Mammals

Dulzura pocket mouse *(Chaetodipus californicus femoralis)*
California Species of Special Concern

Dulzura pocket mouse is found in a variety of vegetation communities within San Diego County, including coastal sage scrub, sagebrush, grassland, and various chaparral communities. Within the Property, this species was detected primarily in scrub and chaparral type habitats (Figure 12). This species was the second most commonly captured species during small mammal trapping within the Property, and the most commonly captured species in pitfall arrays. There were 56 captures, although this may represent the same individuals captured multiple times.

Pallid bat *(Antrozous pallidus)*
California Species of Special Concern, County Group 2, North County Plan Covered Species

Pallid bat is a wide-ranging species within the western half of the United States and from southern Canada to Mexico. It is known to occur at low elevations in rocky desert, canyon lands, and shrub-steppe grasslands, and is most abundant in xeric environments (Rambaldini 2005). Pallid bats may roost alone or in small to large groups. It has a wide range of roost locations depending on terrain, vegetation, and nearby built structures. Roost locations may include rock outcrops and crevices, cliffs, exfoliating tree bark, tree cavities, caves, mines, buildings, bridges, and other structures where they can wedge themselves or have suitable gripping surfaces. It tends to forage over a variety of habitats, including scrub environments, orchards, grasslands, and others.

Pallid bats were detected flying through the Property during summer active bat surveys. They were not detected roosting within the Property, but were observed flying through and potentially foraging. Pallid bats were detected flying through a small shallow valley near the center of the Property (Figure 12).

Greater western mastiff bat *(Eumops perotis californicus)*
California Species of Special Concern, County Group 2

Greater western mastiff bat inhabits the southwestern United States from Northern California to Mexico and east to Texas. The species range is geomorphically determined in that it occurs in areas with significant rock features that provide suitable roosting habitat. It occurs in a variety of habitats, including desert scrub, chaparral, oak woodlands, and coniferous forest (Pierson 2005). The species is primarily a cliff-dwelling species that requires large rock slabs, crevices, and large boulders. This species is a large, fast flier that can cover large distances between roosting and foraging locations. It will forage over large open areas, including agricultural fields, chaparral, dry desert washes, flood plains, grasslands, oak woodlands, and other areas. Is has also been detected foraging over large bodies of water.

Suitable roosting habitat is unlikely within the Property, but greater western mastiff bat was detected flying through the Property and potentially foraging within the Property. Great western mastiff bats were detected flying through the southeast corner of the Property through a shallow valley (Figure 12).The lack of water within the Property in 2014 may have deterred bats from spending time using the site for foraging, and they may be flying through en route to Lake Wohlford or other areas with water.

Mule deer *(Odocoileus hemionus)*
County Group 2

Mule deer is a fairly common species in large areas of native vegetation within San Diego County. Mule deer tends to be more numerous in the foothills and mountain ranges in the eastern part of the County. It has large home ranges and requires areas with dense vegetation for cover and fresh water. Several female deer were observed walking along trails on the Property going past the wildlife cameras (Figure 12). Additionally, one young buck was detected walking past a wildlife camera. The tracks and scat of mule deer were detected along several of the trails and within openings in chaparral vegetation within the Property. Due to the lack of permanent water, and since 2014 was a historically dry year, there was no water source on the Property. Mule deer foraged within the Property and moved through it en route to areas with fresh water, such as Lake Wohlford to the east.

4.3.6 Special-Status Wildlife with High Potential to Occur

In addition to the special-status wildlife species documented during the field surveys, 20 special-status wildlife species have high potential to occur on the Property. The evaluation of their potential for occurrence is based on the elevation, soils, and vegetation communities present on the Property; the level of disturbance occurring within the Property; and the range and distribution of species within the vicinity of the Property. Special-status wildlife species that were not detected on the Property during 2014 and 2015 surveys but have a high potential to occur are presented below in Table 15.

Table 15. Special-Status Wildlife with High Potential to Occur within the Property

Species	Status[1]	General Habitat	Habitat on Property (Holland Classification)
Invertebrates			
Hermes copper (*Hermelycaena* [*Lycaena*] *hermes*)	USFWS: Candidate County: Group 1 NC Plan: Covered	Larvae use redberry (*Rhamnus crocea*) as a foodplant, and the distribution of the Hermes copper is closely tied to the distribution of redberry, typically occurring in chaparral or coastal sage scrub. Adults visit flowers, especially those of flat-top buckwheat (*Eriogonum fasciculatum*).	Southern Mixed Chaparral, Diegan Coastal Sage Scrub
Reptiles and Amphibians			
Northern three-lined boa (former subspecies of coastal rosy boa) (*Lichanura orcutti*)	CDFW: CSC County: Group 2	Scrub habitats with rock outcrops. Once common on the coast, now typically found in inland locations.	Diegan Coastal Sage Scrub

Species	Status[1]	General Habitat	Habitat on Property (Holland Classification)
Red diamond rattlesnake (*Crotalus ruber*)	CDFW: CSC County: Group 2 NC Plan: Covered	Coastal sage scrub and grasslands. Occurs in rocky areas and dense vegetation with rodent burrows, cracks in rocks, or surface cover objects.	Nonnative Grassland: Broadleaf Dominated, Southern Mixed Chaparral, Diegan Coastal Sage Scrub
Southern California legless lizard (formerly silvery legless lizard) (*Anniella stebbinsi*)	CDFW: CSC County: Group 2	Lives in burrows in loose, sandy soils. Often found in leaf litter and loose soil. Insectivorous. Moisture is essential. Found in beach dunes, pine-oak woodlands, chaparral, desert scrub, washes, and stream terraces.	Southern Mixed Chaparral, Diegan Coastal Sage Scrub, Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
San Diego banded gecko (*Coleonyx variegatus abbottii*)	County: Group 2	Occurs in arid areas, including creosote flats, sagebrush desert, pinion-juniper woods, and chaparral. Prefers rocky areas, but may occur in rock-free areas such as sand dunes.	Southern Mixed Chaparral, Diegan Coastal Sage Scrub
San Diego ringed neck snake (*Diadophis punctatus similis*)	County: Group 2	Prefers moist habitats, including wet meadows, rocky hillsides, gardens, grassland, chaparral, mixed coniferous woods, and woodlands.	Nonnative Grassland: Broadleaf Dominated, Southern Mixed Chaparral, Diegan Coastal Sage Scrub, Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
Western spadefoot toad (*Scaphiopus hammondii*)	CDFW: CSC County: Group 2 NC Plan: Covered	Sandy or gravelly soil in grasslands, open chaparral and pine-oak woodlands, coastal sage scrub; vernal pools or freshwater marshes are essential for breeding.	Nonnative Grassland: Broadleaf Dominated, Southern Mixed Chaparral, Diegan Coastal Sage Scrub, Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
Birds			
White tailed kite (*Elanus caeruleus*)	CDFW: Fully Protected; CSC (Nesting) County: Group 1	Widespread over the coastal slope of San Diego County, preferring riparian woodlands, oak groves, or sycamore groves adjacent to grasslands.	Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland

Species	Status[1]	General Habitat	Habitat on Property (Holland Classification)
Cooper's hawk (*Accipiter cooperi*)	CDFW: Watch List (Nesting) County: Group 1	Inhabits broken woodlands, woodland edges, and streamside groves. Nests in open woodlands or in deciduous trees in riparian areas.	Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
Red shouldered hawk (*Buteo lineatus*)	County: Group 1	Occurs mainly in swamp and forest habitats; uses the same nesting site from year to year.	Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
Sharp-shinned hawk (*Accipiter striatus*)	CDFW: Watch List (Nesting) County: Group 1	A winter visitor, distributed over the coastal slope of San Diego County. The habitat of this species encompasses a variety of vegetation communities and land covers. It requires a certain amount of dense cover, but this can be localized and scattered through relatively open country.	Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
Golden eagle (*Aquila chrysaetos*)	CDFW: Fully Protected; Watch List (Nesting and Wintering) NC Plan: Covered	Nests on cliff ledges and trees on steep slopes. Hunts for prey in nearby grasslands, sage scrub, or broken chaparral. Requires very large territories.	Nonnative Grassland: Broadleaf Dominated, Southern Mixed Chaparral, Diegan Coastal Sage Scrub
Western bluebird (*Sialia mexicana*)	County: Group 1	Frequents open woodlands for foraging, but requires suitable roosting and nesting cavities usually in snags. Availability of snags may limit population density.	Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
Bell's sage sparrow (*Amphispiza belli belli*)	CDFW: Watch List County: Group 1 NC Plan: Covered	Coastal sage scrub and sparse chaparral, typically in large unfragmented blocks in inland locales.	Southern Mixed Chaparral, Diegan Coastal Sage Scrub
Mammals			
American Badger (*Taxidea taxus*)	CDFW: CSC County: Group 2 NC Plan: Covered	Shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food and friable soils. Preys on burrowing rodents.	Nonnative Grassland: Broadleaf Dominated, Southern Mixed Chaparral, Diegan Coastal Sage Scrub, Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
Big free-tailed bat (*Nyctinomops macrotis*)	CDFW: CSC County: Group 2	Low-lying arid areas in Southern California.	Southern Mixed Chaparral, Diegan Coastal Sage Scrub

Species	Status[1]	General Habitat	Habitat on Property (Holland Classification)
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	CDFW: CSC County: Group 2	Rugged cliffs, rocky outcrops, and slopes in desert shrub and pine oak forests.	Southern Mixed Chaparral, Diegan Coastal Sage Scrub, Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	CDFW: CSC County: Group 2 NC Plan: Covered	Grasslands, open scrub habitats, disturbed areas, and agricultural fields.	Nonnative Grassland: Broadleaf Dominated, Southern Mixed Chaparral, Diegan Coastal Sage Scrub, Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland, Disturbed Habitat
San Diego desert woodrat (*Neotoma lepida intermedia*)	CDFW: CSC County: Group 2	Sagebrush scrub, annual grassland, chaparral, and desert scrubs, often with cactus patches, rock outcrops, or rock piles.	Nonnative Grassland: Broadleaf Dominated, Southern Mixed Chaparral, Diegan Coastal Sage Scrub
Mountain lion (*Puma concolor*)	County: Group 2 NC Plan: Covered	Rugged mountains, forests, deserts, and swamps.	Southern Mixed Chaparral, Diegan Coastal Sage Scrub, Coast Live Oak Woodland, Open Coast Live Oak Woodland, Engelmann Oak Woodland

Federal U.S. Fish and Wildlife Service (USFWS)
State California Department of Fish and Wildlife (CDFW): California Species of Special Concern (CSC)
Other County Designations
Group 1 = Animals of high sensitivity (listed or specific natural history requirements)
Group 2 = Animals declining, but not in immediate threat of extinction or extirpation
NC Plan Covered: Included on the draft North County Multiple Species Conservation Plan covered species list (February 2009)

4.3.7 Invasive Species

No invasive invertebrates, herpetofauna, or mammal species were detected on the Property. One brown-headed cowbird (*Molathrus ater*) was detected as an incidental sighting during a general wildlife survey. Although brown-headed cowbird is a brood parasite that adversely affects native songbird populations, this species was detected as a flyover, and is most likely not occurring as a

brood parasite on the Property. Brown-head cowbird typically parasitizes species occurring in riparian and grassland areas, and the majority of the Property is dominated by chaparral vegetation communities.

Additionally, humans and domestic dogs were observed within the Property during field surveys, and may adversely affect native wildlife use of and distribution within the Property.

4.4 WILDLIFE MOVEMENT

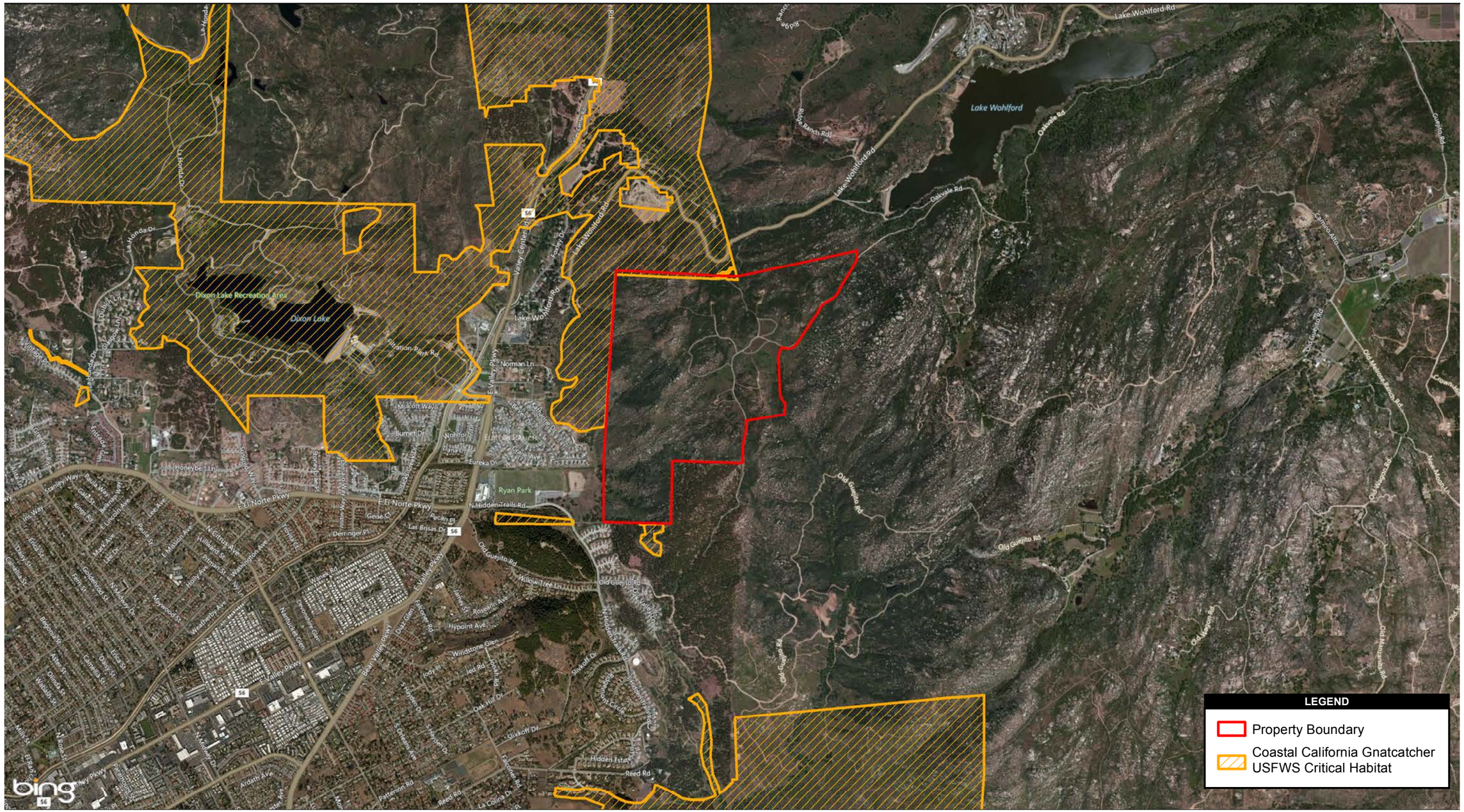
In general, wildlife species are likely to use habitat in the Property for local movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). As indicated by the presence of the species detected during surveys, the Property is part of the home range of many species, which may use it at different times of the year depending on available resources. Mule deer and other mammals were observed moving through the Property and several mule deer trails were observed following small valleys along the west slope of the Property. Mule deer and other large mammals require fresh water and since this is lacking within the Property, many large mammals may be transiting through the Property and using it for temporary forage and cover.

Regionally, the Property is part of large, unfragmented area of undeveloped habitat that extends in nearly all directions except to the southwest. The City of Escondido is located to the southwest of the Property and virtually eliminates terrestrial wildlife movement in that direction. The Property has no fence around it, and therefore wildlife can easily move into and out of the Property to adjacent habitat areas. Avocado orchards exist to the south of the Property. Although avocado orchards are not high value wildlife habitat, they provide cover for many species to move through. Extensive habitat exists to the northwest of the Property towards Daley Ranch, although, Valley Center Road and some low density residential development may limit terrestrial wildlife movement to and from the Property in that direction.

Large patches of habitat occur north of the Property on the other side of Lake Wolford Road. Escondido Creek is located to the north and may provide additional resources for species that require fresh water. Many terrestrial species can easily move across the two-lane Lake Wohlford Road; however, the steep slopes do not provide ideal locations for wildlife to cross. Occasionally road killed mammals were observed along Lake Wohlford Road, particularly because the road is cut into the steep slope with many sharp curves and blind corners. There are no wildlife culverts or underpasses along the road further increasing the mortality risk to terrestrial species that attempt to cross this road.

The Property is also a part of the Pacific Flyway, a major north/south migration route for birds that travel between North and South America. Many avian species pass through the Property during migration and/or may use the Property as migratory stopover habitat. Additionally, large patches of California gnatcatcher critical habitat exist to the northwest and south of the Property (Figure 13). The patches of sage scrub habitat may provide stepping stone habitat for California gnatcatchers dispersing between these patches of critical habitat.

There is potential for bats to move through the Property from roosting locations to foraging areas, such as Lake Wohlford. Bat surveys conducted around Lake Wohlford in 2013 (Rahn and Stricker 2014), identified large numbers of bats flying to the lake to forage, and discuss transit routes for bats moving to Lake Wohlford and possibly a connection between Lake Wohlford and Daley Ranch. Active bat surveys showed bats flying through the Property and heading in the direction of Lake Wohlford.



Source: ESRI 2014; BING 2014; USFWS 2012

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 13
Critical Habitat

Path: P:\2013\60278233_DPR_2012\06GIS\6.3_Layout\TO_12\Report Figures\Biodiversity_Report\Fig13_Critical_Habitat.mxd, 4/27/2015, SorensenJ

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5.0 CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

Surveys conducted in 2014 and 2015 documented 13 vegetation group level classifications, alliances, associations, or semi-natural stands as described in the VCM (Sproul et al. 2011). Approximately 162 plant species and 115 wildlife species were observed or detected within the Property during surveys, including 24 invertebrates, 15 reptiles, 55 birds, and 21 mammals. Fifteen special-status species (one plant and 14 wildlife species), of which four are covered under the North County Plan, were detected or observed within the Property.

This section provides resource-specific conclusions and management recommendations for each vegetation alliance, association, stand, or community evaluated during the 2014 and 2015 field surveys. These recommendations are based on the results of the baseline biological diversity surveys and management and monitoring guidelines associated with the North County Plan. The Preserve is located within the draft North County Plan. As such, no approved Framework Management Plan has been created that would affect this area. Recommendations for management follow general concepts of what would be appropriate for management of specific habitats in the County.

The Property acts as a link between an isolated and remote portion of the County and the urbanized areas of Escondido. Due to this location, the Property will need to be managed to prevent degradation of habitat by off-road vehicles and other activities by transient human inhabitants and possible expansion of feral pigs and turkeys.

5.1 VEGETATION COMMUNITIES/HABITAT

Vegetation on the Property has been classified into 13 different categories, including woodland, chaparral, scrub, and grassland habitats. The Property is strategically located within a block of habitat that was assessed in preparation of the draft North County Plan, due to its importance for on-site wildlife and connectivity to other locations to the east and across to preserve lands to the northwest.

The Property is an area that exists geographically as a small valley or saddle on the western slope of Bottle Peak, but extends down-slope to the upper portions of Escondido Creek. Land to the west is urban, and land to the east and south is rural and somewhat remote. The upland habitats on the Property are relatively undisturbed, having recovered significantly from past clearing and off-road-vehicle activities. Invasive species, (goldspotted oak borer [*Agrilus auroguttatus*], wild turkeys [*Meleagris gallopavo*], and feral pigs [*Sus scrofa*]) were not detected on the Property, but would be a primary concern for management if they were to reach the Property in the future. Fire

has occurred on the Property since the 1950s, but the Property appears to be recovering from the most recent Paradise Fire of 2003. Invasive species treatment recommendations are discussed in Section 5.4, and fire recommendations are discussed in Section 5.6.

Riparian woodland types of habitat are located adjacent to, but off site of, the Property, to the east. The woodland habitats on the Property appear to be generally in good condition, but a few still appear to have been adversely affected by the fire in 2003 and the generally dry conditions that have existed over the past 16 years. Since the vegetation is still recovering from the fires that occurred in 2003, it would be reasonable to help prevent recurrence of fires for at least another decade. The oak woodlands may be the most sensitive to recurrence of fires at this time, and the trees should be monitored for infestation of goldspotted oak borer.

5.2 PLANTS

The surveys in 2014 and 2015 identified one special-status species of plant, Engelmann oak. This species is covered under the draft North County Plan. Threats to its existence are currently limited to fire occurring too frequently, although it has been able to recover from fires in a manner that is sustaining. Future fires occurring too frequently, coupled with further extended drought, may impact the species. A fire periodicity that mimics the frequency of the past 100 years, once every approximately 20 to 40 years on any particular portion of the Property, would not pose a problem for the trees. If pigs and turkeys threaten the Property in the future, they will pose a negative impact to oaks due to their consumption of acorns as a major food source.

As the North County Plan is in draft form, specific monitoring and management requirements have not been established for special-status plant species. General management recommendations, however, should include the following:

- Monitoring and removing nonnative/invasive plant species
- Designing future Property uses to avoid special-status plant populations
- Maintaining fences or barriers to prevent unauthorized public access
- Continued monitoring of known special-status plant populations, including rare plant surveys

5.3 WILDLIFE

The surveys in 2014 identified 14 special-status wildlife species, four of which are covered under the draft North County Plan. As the North County Plan is in draft form, specific monitoring and

management requirements have not been established for special-status wildlife species. General management recommendations, however, should be followed and are provided below for invertebrates, herpetofauna, birds, and mammals.

Invertebrates

No special-status invertebrate species were detected within the Property, but there is high potential for Hermes copper butterfly to occur. Hermes copper larval host plant, spiny redberry, was not detected on the Property, but habitat for this species is suitable within the Property. The adult nectar plant, California buckwheat, was documented throughout the Property. Based on the suitability of the habitat for spiny redberry, and the presence of California buckwheat, the following general management recommendations should be followed:

- Focused rare plant surveys conducted every 3 to 5 years to document the presence or absence of spiny redberry
- Butterfly surveys conducted every 3 to 5 years to document the presence or absence of Hermes copper

Herpetofauna

Five special-status reptile species were detected within the Property: Coronado skink, Belding's orange-throated whiptail, coastal whiptail, coast horned lizard, and coast patch nosed snake. Belding's orange-throated whiptail and coast horned lizard are covered under the draft North County Plan. Based on the presence of the five special-status reptiles, and the potential for six additional special status species with high probability of occurring on the Property, the following general management recommendations should be followed:

- Continued surveying and monitoring for herpetofauna to document health of populations within the Property
- Control of nonnative plant and wildlife species, including domestic pets
- Management and reduction of edge effects in the south and western portion of the Property that is adjacent to residential/agricultural areas
- Maintenance of populations of native ant species for coast horned lizard by monitoring and controlling populations of invasive Argentine ants (*Linepithema humile*)
- Maintenance of fences or barriers, including "no trespassing" signs and signs warning of penalties associated with unauthorized collection, to prevent unauthorized public access

Birds

Five special-status bird species were detected within the Property: double-crested cormorant, barn owl, olive-sided flycatcher, southern California rufous-crowned sparrow, and turkey vulture. Southern California rufous-crowned sparrow is covered under the draft North County Plan. Based on the presence of the five special-status bird species, and the potential for seven additional special status species with high probability to occur on the Property, the following general management recommendations should be followed:

- Continued surveying and monitoring for avian species to document the health of populations within the Property
- Management and reduction of human-caused edge effects (such as introduction of invasive/exotic species and domestic pets, increase in trash/pollution, and/or habitat destruction) in the south and western portion of the Property that is adjacent to residential/agricultural areas. Management strategies for edge effects are listed in the following bullets.
- Control and/or removal of nonnative plant and wildlife species within the Property, including domestic pets
- Maintenance of fences or barriers, including "no trespassing" signs and signs warning of penalties associated with unauthorized collection, to prevent unauthorized public access

Mammals

Four special-status mammal species were detected within the Property: Dulzura pocket mouse, pallid bat, greater western mastiff bat, and mule deer. Pallid bat is covered under the draft North County Plan. Based on the presence of the special-status mammal species, and the potential for nine additional species with high probability to occur on the Property, the following general management recommendations should be followed:

- Continued surveying and monitoring for mammals to document their use of, and distribution within, the Property
- Management and reduction of human-caused edge effects (such as introduction of invasive/exotic species and domestic pets, increase in trash/pollution, and/or habitat destruction) in the south and western portion of the Property that is adjacent to residential/agricultural areas. Management strategies for edge effects are listed below.

- Control and/or removal of nonnative plant and wildlife species within the Property, including domestic pets. Maintenance of fences or barriers, including "no trespassing" signs and signs warning of penalties associated with unauthorized plant and animal collection, to prevent unauthorized public access
- Maintenance of natural ecological processes, such as wildfires, to allow for openings of chaparral and scrub communities with herbaceous understories
- Incorporation of regional management plans to monitor and support wildlife corridors

Critical Habitat

Approximately 4.4 acres of coastal California gnatcatcher (*Polioptila californica californica*) critical habitat occurs in the northwest corner of the Property (Figure 13). Coastal California gnatcatcher was not detected during field surveys in 2014, and only 65.52 acres of suitable sage scrub habitat occurs on the Property. General management strategies for coastal California gnatcatcher include preservation of suitable habitat for this species and monitoring of this habitat for the presence/absence of coastal California gnatcatcher.

5.4 NONNATIVE INVASIVE SPECIES REMOVAL AND CONTROL

The removal of nonnative/invasive plant and wildlife species is recommended to enhance habitat quality for native plants and wildlife.

5.4.1 Plants

Thirty-nine nonnative plant species were observed within the Property. Of these, 25 species have been targeted for removal (Table 16). Species that have been designated as high priority are recommended for immediate removal; moderate species should be removed after high-priority species are under control, and low-priority species should be removed after moderate species are under control. A Vegetation Management Plan has been prepared for the Property and includes specific information regarding methods for removing each of the 25 species targeted for removal.

Removal methods for nonnative/invasive plant species include manual removal, mechanical removal, application of herbicides, and cutting with herbicide treatment. The appropriate removal method should be tailored to the individual species, and should be determined based on several variables. Such variables include seasonal timing of the removal, severity of species invasion, presence of sensitive and native species, and proximity to a water source.

Table 16. Priorities for Removal or Management of Nonnative Species

Common Name	Scientific Name	Removal/Management Priority
Silver Wattle	*Acacia dealbata*	High
Pampas Grass	*Cortaderia selloana*	High
Red Gum	*Eucalyptus camaldulensis*	High
Fennel	*Foeniculum vulgare*	High
Treasure Flower	*Gazania linearis*	High
Natalgrass	*Melinis repens* ssp. *repens*	High
Tree Tobacco	*Nicotiana glauca*	High
Wavyleaf Beeblossum	*Oenothera sinuosa*	High
Fountaingrass	*Pennisetum setaceum*	High
Milkthistle	*Silybum marianum*	High
Tamarisk	*Tamarix ramosissima*	High
Moundlily Yucca	*Yucca gloriosa*	High
Black Mustard	*Brassica nigra*	Moderate
Italian Thistle	*Carduus pycnocephalus*	Moderate
Shortpod Mustard	*Hirschfeldia incana*	Moderate
White Horehound	*Marrubium vulgare*	Moderate
Buttercup Oxalis	*Oxalis pres-caprae*	Moderate
Curly Dock	*Rumex crispus*	Moderate
London Rocket	*Sisymbrium irio*	Moderate
Johnson Grass	*Sorghum halapense*	Moderate
Mexican Fan Palm	*Washingtonia robusta*	Moderate
Tocalote	*Centaurea melitensis*	Low
Petty Spurge	*Euphorbia peplus*	Low
Bristly Ox Tongue	*Helminthotheca echioides*	Low
Prickly Lettuce	*Lactuca serriola*	Low
Mission Fig	*Opuntia ficus-indica*	Low
Buckhorn Plantain	*Plantago lanceolata*	Low
Prickly Sow Thistle	*Sonchus asper* ssp. *asper*	Low
Corn Spurry	*Spergula arvensis*	Low
Scarlet Pimpernel	*Anagallis arvensis*	None
Wild Oats	*Avena fatua*	None
Ripgut Brome	*Bromus diandrus*	None
Soft Brome	*Bromus hordeaceus*	None
Red Brome	*Bromus madritensis* ssp. *rubens*	None
Australian Brass Buttons	*Cotula australis*	None
Broadleaf Filaree	*Erodium botrys*	None
Redstem Filaree	*Erodium cicutarium*	None
Rattail Fescue	*Festuca myuros*	None
Crete Weed	*Hedypnois cretica*	None
Smooth Cat's Ear	*Hypochaeris glabra*	None
Narrow-Leaf Cottonrose	*Logfia gallica*	None
Burclover	*Medicago polymorpha*	None
Indian Sweetclover	*Melilotus indicus*	None
Rabbitfoot Grass	*Polypogon monspeliensis*	None
Mediterranean Grass	*Schismus barbatus*	None
Common Catchfly	*Silene gallica*	None

Widespread and prevalent nonnative species that have become naturalized are not a priority for removal, as removal strategies may be ineffective and expensive. Nonnative species not targeted for removal, however, should continue to be monitored and controlled to prevent spreading from their current range.

Oak trees in the region have been affected by goldspotted oak borer, and although this species was not detected on the Property, its potential presence in the future should be monitored. This species has caused extensive mortality to oaks in woodlands, favoring mature trees. It prefers Coast live oak and California black oak (*Q. kelloggii*), but has rarely been documented on Engelmann oak.

5.4.2 Wildlife

With the exception of one detected brown-headed cowbird and the occasional confrontation with humans and dogs, no other nonnative wildlife species were detected on the Property.

Although brown-headed cowbird does not appear to be a threat to native wildlife at the Property due to lack of preferred habitat for host species, this species should continue to be documented and monitored during future surveys and management of the Property. If it is determined that brown-headed cowbirds are parasitizing native species within the Property, strategic control methods should be implemented. Such control methods include trapping of adult birds and removal of eggs from host birds' nests.

Human presence on the Property, along with nonnative species that might follow human disturbance, should be monitored and controlled. This may be achieved through fences and barriers, signage, patrolling, and education. Priority should be given to domestic animals that kill and/or stress native wildlife, such as dogs and cats. Pet-owner awareness and education is recommended, but if domestic animals are negatively affecting native wildlife, a control method such as trapping is recommended.

Additionally, feral pigs and wild turkeys should be monitored for their potential expansion into the Property. These species have not been detected on the Property, but their populations are spreading throughout San Diego County.

5.5 RESTORATION OPPORTUNITIES

The Property is primarily composed of high-quality native vegetation, although some areas of nonnative grasslands and disturbed habitat occur in the central and northeastern portions of the Property. Disturbed habitat is mainly associated with the trails that occur throughout the

Property. Restoration opportunities could include control of the nonnative/invasive species targeted for removal (Table 16). The small area of nonnative grassland could also benefit from habitat restoration, including control of nonnative species and planting of native grasses. Additionally, enhancement of suitable Hermes copper habitat could be achieved through planting of spiny redberry in appropriate chaparral habitat.

5.6 FIRE MANAGEMENT

The Property is dominated by the woolly-leaved ceanothus and California sagebrush associations, with areas of Engelmann oaks and coast live oaks on slopes and in low areas. Upland areas are susceptible to burns, particularly as the vegetation ages and drought conditions continue. As was mentioned above, nearly the entire site burned in 2003.

The primary concern for impacts is from increased presence of weed species. Currently, the shrub vegetation is becoming re-established in areas that were cleared or burned and where weedy species had spread. The situation is favorable for shrub recovery and reduction of weeds. There may be a need to carry out specific treatment of areas that were scraped or graded in the past, but the overall outlook for the vegetation is positive.

A Vegetation Management Plan prepared for the Property will include a short-term tactical fire-suppression plan and long-term strategic vegetation management plan. These proposals will outline activities to assist in maintaining and improving the vegetation in the future, with consideration of the disturbing elements of fire and invasive weeds. Fuel management recommendations will include prescriptions specific to high-value vegetation resources present on the Property, including oak woodland and coastal sage scrub components. These may involve controlled grazing, mowing, herbicide applications, prescribed burning, thinning, and the potential for creation of fuel breaks that conform to the landscape. Management recommendations that would complement fuel-reduction practices include delineating fuel modification areas, providing emergency fire access, providing fire agencies with information that is important for managing the landscape, preventing illegal access and trespass, increasing public education to reduce potential for ignition, and continuing to suppress wildfires.

5.7 WILDLIFE LINKAGES AND CORRIDORS

Regionally, the Property is part of a large, unfragmented area of undeveloped habitat that extends in nearly all directions except to the southwest. The City is located to the southwest of the Property and virtually eliminates terrestrial wildlife movement in that direction. Culverts or underpasses with directional fencing guiding species safe crossing zones along Lake Wohlford Road may aid wildlife in movement to and from the northern boundary of the Property.

Conservation of habitat within the Property would allow wildlife to continue to use the Property. Additionally, the recommendations in Sections 5.1 through 5.6 will also ensure that habitat on the Property is viable for local and regional movement.

5.8 ADDITIONAL MANAGEMENT RECOMMENDATIONS

5.8.1 Public Access

Public access is not currently being considered within the Property. Restricting public access would minimize human-associated risks such as increased litter on the Property, potential wildfires, habitat destruction, and collection of native and/or sensitive plants or wildlife. Although access to the public is not currently being considered for the Property, DPR staff can enter the Property for patrolling purposes through the locked gate off of Lake Wohlford Road.

Trails and Access Roads

The Property is currently accessible via the existing access road from Lake Wohlford Road. To prevent unauthorized vehicular access onto the Property, the locked gate should remain in place at the main entrance to the Property.

Hikers and mountain bikers were observed walking through the Property during 2014 and 2015 surveys, although an official trail system is not in place or currently proposed for the Property. Residents in the nearby residential community have also been observed on the Property. Unauthorized trails should be blocked off with natural elements, such as boulders or plantings, or fenced off with signage to prohibit foot traffic and to allow passive habitat restoration to take place.

Fencing and Gates

The Property is unfenced and is accessible by foot from all sides. Installation of fencing and gates in locations where foot traffic is most likely, such as the areas adjacent to the residential area and avocado grove may reduce unauthorized access onto the Property.

Signage and Education

The Property is not currently open to the public for recreational use; therefore, no signage (boundary signs, use regulations, or interpretive) is installed. “No trespassing” signs should be placed in areas throughout the Property where public access is unauthorized. Should the Property be opened to the public, interpretive signs should be placed along authorized trails.

Illegal Off-Road Activity

Off-road-vehicle activity was not observed on the Property during 2014 and 2015 surveys. This is probably due in large part to the locked gate at the entrance of the main access road. Signage and fencing at this location may help prevent future illegal off-road activity on the Property.

Litter/Trash Removal

When performing 2014 and 2015 surveys it was noted litter and trash was not prevalent on the Property. No illegal dumping areas were located during 2014 and 2015 surveys of the Property. Regular monitoring and management of the Property would detect increases of littering in the area, and then a strategy could be implemented to control the problem. Organized volunteer clean-up days could manage litter and trash issues on the Property.

5.8.2 Hydrological Management

The Property contains several topographic features that carry runoff during rainfall events and a single dry pond in the northeast corner of the Property that fills only during heavy rainfall events. The Property does not contain water features or riparian areas that meet the minimum mapping unit for the vegetation classification methods discussed in Section 3.1.1. Overall hydrology of the Property should be managed at a watershed level; however, prevention of pollution and nonnative species into the pond should be a consideration for management of the Property.

5.8.3 Emergency and Safety Issues

The main emergency and safety issue concerning the Property is threat of wildfires. Fire management was discussed in detail in Section 5.6. Should public access be proposed in the future for this Property, an emergency response plan should be implemented, and emergency contact information should be placed on signs throughout authorized access trails.

6.0 REFERENCES

Baldwin, B. G., Goldman, D., Keil, D., J., Patterson, R., Rosatti, T., J., and D. Wilken. 2012. The Jepson Manual: Vascular Plants of California. Second Edition. California Native Plant Society.

Bossard, C. C., J. M. Randall, and M. C. Hoshovsky. 2000. Invasive Plants of California's Wildlands. University of California Press. Berkeley, CA, Carla C. Bossard, John M. Randall, Marc C. Hoshovsky, Editors, 360 pages, 133 color photos, 76 line illustrations, 79 maps. University of California Press.

Bowman, R. H. 1973. *Soil Survey of the San Diego Area, California, Part I*. United States Department of Agriculture, Soil Conservation Service and Forest Service in co-operation with University of California Agriculture Experiment Station, United States Department of Interior, Bureau of Indian Affairs, Department of the Navy United States Marine Corps. Soil Survey San Diego Area, California. 104 pages and 76 maps.

California Department of Fish and Game (CDFG). 1988. California Statewide Wildlife Habitat Relationships System. Volume 1: *Amphibians and Reptiles*. David Zeiner, W. Laudenslayer, and K. Mayer, eds. The Resource Agency. Sacramento. 269 pp.

California Department of Fish and Game (CDFG). 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. State of California, California Natural Resources Agency, Department of Fish and Game. Available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline=1. Accessed August 18, 2014.

California Department of Fish and Wildlife (CDFW). 2014. RareFind 4 computer program. Biogeographic Data Branch. California Natural Diversity Database (CNDDB) Search for Plants within Solar Millennium Biological Resource Survey Area. Special Animals List (901 taxa). State of California Resources Agency. Sacramento, California.

California Department of Food and Agriculture. 2014. Plant Health & Pest Prevention Services. California Noxious Weeds. Available at http://www.cdfa.ca.gov/plant/ipc/weedinfo/winfo_table-sciname.html. Accessed July 29, 2014.

California Invasive Plant Inventory Database, California Invasive Plant Council. http://www.cal-ipc.org/paf/. Accessed July 29 2014

California Native Plant Society (CNPS). 2001. CNPS Botanical Survey Guidelines. California Native Plant Society. Available at http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf. Accessed August 18, 2014.

California Native Plant Society (CNPS). 2014. Inventory of Rare and Endangered Plants of California, California Native Plant Society, Sacramento, California.

Chin, E. H., B. N. Aldridge, and R. J. Longfield. 1991. Floods of February 1980 in Southern California and Central Arizona. U.S. Geological Survey Professional Paper 1494:1–135.

County of San Diego. 2009. North County Plan. Public review draft of the North County Multiple Species Conservation Program Plan. Department of Planning and Land Use 148 p.

County of San Diego. 2010. Guidelines for Determining Significance and Report Format and Content Requirements for Biological Resources. Land Use Environment Group, Department of Planning and Land Use, Department of Public Works Fourth Revision September 15, 2010. Available at http://www.sdcounty.ca.gov/pds/docs/Biological_Guidelines.pdf. Accessed August 18, 2014.

County of San Diego. 2014a. Species Predictive Model. County of San Diego, Escondido Creek Conservancy. Available at http://escondidocreek.org/the-watershed/. Accessed March 2014.

County of San Diego. 2014b. North County Subarea Plan (NCSAP) Species Targeted for Conservation. Available at http://www.sdcounty.ca.gov/pds/mscp/docs/NCMSCP/Initial_SpeciesList_with_description.pdf. Accessed August 18, 2014.

Fisher, Robert, Drew Stokes, Carlton Rochester, Cheryl Brehme, Stacie Hathaway, and Ted Case. 2008. Herpetological Monitoring Using A Pitfall Trapping Design in Southern California: U.S. Geological Survey Techniques and Methods 2-A5, 44 p.

Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Unpublished report. California Department of Fish and Game, Natural Heritage Division, Sacramento, California.

Jennings, M. R., and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. Final report to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California.

Marlow, R. 2005. California Department of Fish and Game. California Interagency Wildlife Task Group. California Wildlife Habitat Relationships, version 8.1 personal computer program. Sacramento, California.

McGlashan, H. D., and F. C. Ebert. 1918. Southern California Floods of January, 1916. United States Geological Survey Water-Supply Paper 426:1–80.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California" prepared by Robert F. Holland, Ph.D. for State of California, The Resources Agency, Department of Fish and Game (October 1986).

Oneto, S., J. M. DiTomaso, G. B. Kyser, S. Garcia, and S. Hale. 2005. *Control of Tree Tobacco (Nicotiana glauca)*. University of California Davis, University of California Cooperative Extension. Available at http://www.cal-ipc.org/symposia/archive/pdf/17788.pdf. Accessed August 4, 2014.

Pierson, Elizabeth D. 2005. Western Bat Working Group Species Account for Greater Mastiff Bat (*Eumops perotis*). Available at http://www.wbwg.org/speciesinfo/species_accounts/species_accounts.html.

Rahn, Matt, and Kelcey Stricker. 2014. Bat Surveys and Habitat Assessment for Lake Wohlford Dam Replacement Project. February 14.

Rambaldini, Daniela A. 2005. Western Bat Working Group Species Account for Pallid Bat (*Antrozous pallidus*). Available at http://www.wbwg.org/speciesinfo/species_accounts/species_accounts.html.

Rebman, J. P., and M. G. Simpson. 2014. Checklist of Vascular Plants of San Diego County 5th edition. San Diego Natural History Museum and San Diego State University. Publication of the San Diego Natural History Museum, San Diego, California. 132 p.

Reiser, C. H. 1994. Rare plants of San Diego County. Aquifir Press, Imperial Beach, CA 234 p.

Sproul, F., Keeler-Wolf, T., Gordon-Reedy, P., Dunn, J., Klein A. and K. Harper. 2011. Vegetation classification manual for Western San Diego County. San Diego Association of Governments

Stebbins, R. C. 2003. *A Field Guide to Western Reptiles and Amphibians*. 3rd ed. Houghton Mifflin, Boston.

Suddjian, D. L. 2004. "Birds and Eucalyptus on the Central California Coast: A Love-Hate Relationship." *Ecology and Impacts of Blue Gum Eucalyptus in Coastal California*. Conference notes from Elkhorn Slough Coastal Training Program, June 3, 2004. Available at http://www.elkhornsloughctp.org/uploads/files/1108147180Suddjianunpublished%20conference%20notes.pdf.

Sylvan Kaufman, Denton. 2014. *Melinis repens*. Invasive species compendium. CABI. Available at http://www.cabi.org/isc/datasheet/116730. Accessed August 4, 2014.

U.S. Department of Agriculture (USDA) Natural Resources Conservation Service. 2014. California State-listed noxious weeds. Available at https://plants.usda.gov/java/noxious?rptType=State&statefips=06.

U.S. Fish and Wildlife Service (USFWS). 1996. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants (September 23, 1996). Available at http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/Listed_plant_survey_guidelines.pdf. Accessed August 18, 2014.

Unitt, P. 2004. *Birds of San Diego County*. San Diego County: San Diego Society of Natural History.

Western Regional Climate Center. 2014. National Climatic Data Center Weather Station Escondido 2. Latitude 33.07; Longitude -117.05. Available at http://www.wrcc.dri.edu/. Accessed August 21, 2014.

APPENDIX A

PLANTS SPECIES DETECTED

Appendix A
Plant Species Detected

Scientific name	Common name	Status (Federal/State/ County, North County Plan)
Vascular Species – Dicots		
ADOXACEAE - Muskroot Family		
Sambucus nigra subsp. *caerulea*	Blue elderberry	None/None/None
ANACARDIACEAE - Sumac or Cashew Family		
Malosma laurina	Laurel sumac	None/None/None
Rhus ovata	Sugar bush	None/None/None
Toxicodendron diversilobum	Western poison oak	None/None/None
APIACEAE - Carrot Family		
**Foeniculum vulgare*	Fennel	None/None/None
Sanicula crassicaulis	Pacific sanicle	None/None/None
Tauschia arguta	Southern tauschia	None/None/None
APOCYNACEAE - Dogbane Family		
Asclepias fascicularis	Narrow-leaf milkweed	None/None/None
ASTERACEAE - Sunflower Family		
Acourtia microcephala	Sacapellote	None/None/None
Ambrosia psilostachya	Western ragweed	None/None/None
Artemisia californica	California sagebrush	None/None/None
Baccharis pilularis subsp. *consanguinea*	Coyote brush	None/None/None
Baccharis salicifolia subsp. *salicifolia*	Mulefat	None/None/None
Brickellia californica	California brickellbush	None/None/None
Chaenactis artemisiifolia	White pincushion	None/None/None
**Carduus pycnocephalus* subsp. *pycnocephalus*	Italian thistle	None/None/None
**Centaurea melitensis*	Tocalote	None/None/None
Corethrogyne filaginifolia	Common sandaster	None/None/None
**Cotula australis*	Australian brass buttons	None/None/None
Deinandra fasciculata	Fascicled tarweed	None/None/None
Erigeron foliosus	Leafy daisy	None/None/None
Eriophyllum confertiflorum var. confertiflorum	Golden yarrow	None/None/None
**Gazania linearis*	Treasure flower	None/None/None
Gutierrezia californica	California matchweed	None/None/None
Hazardia squarrosa var. *grindelioides*	Saw toothed goldenbush	None/None/None
**Hedypnois cretica*	Crete weed	None/None/None
**Helminthotheca echioides*	Bristly ox-tongue	None/None/None
**Hypochaeris glabra*	Smooth cat's ear	None/None/None
Isocoma menziesii var. *vernonioides*	Coastal goldenbush	None/None/None
**Lactuca serriola*	Prickly lettuce	None/None/None
**Logfia gallica*	Narrow-leaf cottonrose	None/None/None

Scientific name	Common name	Status (Federal/State/ County, North County Plan)
Porophyllum gracile	Odora	None/None/None
Pseudognaphalium californicum	California everlasting	None/None/None
Pseudognaphalium stramineum	Cotton-batting plant	None/None/None
**Silybum marianum*	Milk thistle	None/None/None
**Sonchus asper* subsp. *asper*	Prickly sow thistle	None/None/None
Uropappus lindleyi	Silver puffs	None/None/None
Stylocline gnaphaloides	Everlasting nest-straw	None/None/None
BORAGINACEAE - Borage Family		
Cryptantha intermedia	Nievitas cryptantha	None/None/None
Eriodictyon crassifolium var. *crassifolium*	Felt-leaf yerba santa	None/None/None
Eucrypta chrysanthemifolia var. *chrysanthemifolia*	Common eucrypta	None/None/None
Pectocarya linearis subsp. *ferocula*	Slender combseed	None/None/None
Phacelia cicutaria	Caterpillar phacelia	None/None/None
Phacelia parryi	Parry's phacelia	None/None/None
Plagiobothrys collinus var. *californicus*	California popcornflower	None/None/None
BRASSICACEAE - Mustard Family		
**Brassica nigra*	Black mustard	None/None/None
**Hirschfeldia incana*	Short-pod mustard	None/None/None
**Sisymbrium irio*	London rocket	None/None/None
CACTACEAE - Cactus Family		
**Opuntia ficus-indica*	Mission prickly-pear	None/None/None
Opuntia littoralis	Coast prickly-pear	None/None/None
CAPRIFOLIACEAE - Honeysuckle Family		
Lonicera subspicata var. *denudata*	Johnston's honeysuckle	None/None/None
CARYOPHYLLACEAE - Pink Family		
**Spergula arvensis*	Stickwort	None/None/None
**Silene gallica*	Common catchflly	None/None/None
CHENOPODIACEAE - Goosefoot Family		
Chenopodium californicum	California goosefoot	None/None/None
CISTACEAE - Rock-rose Family		
Crocanthemum scoparium	Peak rush-rose	None/None/None
CONVOLVULACEAE - Morning Glory Family		
Calystegia macrostegia subsp. *tenuifolia*	San Diego morning-glory	None/None/None
Cuscuta californica var. *californica*	Chaparral dodder	None/None/None
CRASSULACEAE - Stonecrop Family		
Crassula connata	Pygmyweed	None/None/None
Dudleya pulverulenta	Chalk dudleya	None/None/None
CUCURBITACEAE - Gourd Family		
Marah macrocarpa	Wild-cucumber	None/None/None

Scientific name	Common name	Status (Federal/State/ County, North County Plan)
ERICACEAE - Heath Family		
Xylococcus bicolor	Mission manzanita	None/None/None
EUPHORBIACEAE - Spurge Family		
Croton setiger	Doveweed	None/None/None
**Euphorbia peplus*	Petty spurge	None/None/None
Euphorbia polycarpa	Small seeded sandmat	None/None/None
FABACEAE - Legume Family		
**Acacia dealbata*	Silver wattle	None/None/None
Acmispon americanus var. *americanus*	Spanish-clover	None/None/None
Acmispon glaber var. *glaber*	Coastal Deerweed	None/None/None
Acmispon strigosus	Strigose lotus	None/None/None
Lathyrus vestitus var. *alefeldii*	San Diego sweet pea	None/None/None
Lupinus bicolor	Miniature lupine	None/None/None
Lupinus hirsutissima	Nettle lupine	None/None/None
**Medicago polymorpha*	Bur clover	None/None/None
**Melilotus indicus*	Indian sweetclover	None/None/None
FAGACEAE - Oak Family		
Quercus ×acutidens	Torrey's scrub oak	None/None/None
Quercus agrifolia	Coast live oak	None/None/None
Quercus engelmannii	Engelmann oak	None/None/List D, Covered
GERANIACEAE - Cranesbill Family		
**Erodium botrys*	Long-beak filaree	None/None/None
**Erodium cicutarium*	Red-stem filaree	None/None/None
Geranium carolinianum	Carolina geranium	None/None/None
GROSSULARIACEAE - Gooseberry Family		
Ribes indecorum	White-flower currant	None/None/None
LAMIACEAE - Mint Family		
**Marrubium vulgare*	Horehound	None/None/None
Salvia apiana	White sage	None/None/None
Salvia columbariae	Chia	None/None/None
Salvia mellifera	Black sage	None/None/None
Scutellaria tuberosa	Danny's skullcap	None/None/None
MALVACEAE - Mallow Family		
Malacothamnus fasciculatus var. *fasciculatus*	Chaparral bush mallow	None/None/None
Sidalcea sparsifolia	Checker-bloom	None/None/None
MONTIACEAE – Montia Family		
Calandrinia breweri	Brewer's redmaids	None/None/None
Claytonia perfoliata	Miner's lettuce	None/None/None
MYRSINACEAE - Myrsine Family		
**Anagallis arvensis*	Scarlet pimpernel	None/None/None

Scientific name	Common name	Status (Federal/State/ County, North County Plan)
MYRTACEAE - Myrtle Family		
**Eucalyptus camaldulensis*	Red gum	None/None/None
NYCTAGINACEAE - Four O'clock Family		
Mirabilis laevis var. *crassifolia*	Coastal wishbone plant	None/None/None
ONAGRACEAE - Willowherb Family		
Camissoniopsis bistorta	California sun cup	None/None/None
Camossoniopsis ignota	Jurupa Hills sun cup	None/None/None
**Oenothera sinuosa*	Wavy-leafed gaura	None/None/None
OROBANCHACEAE - Broom-rape Family		
Cordylanthus rigidus subsp. *setigerus*	Dark-tip bird's beak	None/None/None
Castilleja exserta	Purple owl's clover	None/None/None
OXALIDACEAE - Wood Sorrel Family		
**Oxalis pes-caprae*	Bermuda-buttercup	None/None/None
PAEONIACEAE - Peony Family		
Paeonia californica	California peony	None/None/None
PAPAVERACEAE – Poppy Family		
Eschscholzia californica	California poppy	None/None/None
PHRYMACEAE - Lopseed Family		
Mimulus aurantiacus var. *puniceus*	Coastal monkey flower	None/None/None
PLANTAGINACEAE - Plantain Family		
Antirrhinum nuttallianum subsp. *nuttallianum*	Nuttall's snapdragon	None/None/None
Keckiella antirrhinoides	Yellow bush penstemon	None/None/None
Keckiella cordifolia	Climbing bush penstemon	None/None/None
Nutallianthus texanus	Blue toadflax	None/None/None
Penstemon spectabilis var. *spectabilis*	Showy penstemon	None/None/None
**Plantago lanceolata*	English plantain	None/None/None
POLEMONIACEAE - Phlox Family		
Navarretia hamata subsp. *hamata*	Hooked skunkweed	None/None/None
POLYGONACEAE - Buckwheat Family		
Eriogonum fasciculatum var. *foliolosum*	Inland California buckwheat	None/None/None
Pterostegia drymarioides	Granny's hairnet	None/None/None
**Rumex crispus*	Curly dock	None/None/None
RANUNCULACEAE - Buttercup Family		
Thalictrum fendleri var. *polycarpum*	Smooth-leaf meadow Rue	None/None/None
RHAMNACEAE - Buckthorn Family		
Ceanothus crassifolius var. *crassifolius*	Thick-leaf-lilac	None/None/None
Ceanothus leucodermis	Chaparral whitethorn	None/None/None
Ceanothus oliganthus var. *orcuttii*	Orcutt's hairy ceanothus	None/None/None
Ceanothus tomentosus	Ramona-lilac; woolly-leaved ceanothus	None/None/None

Scientific name	Common name	Status (Federal/State/ County, North County Plan)
Rhamnus ilicifolia	Holly-leaf redberry	None/None/None
Rhamnus pilosa	Hairy-leaf redberry	None/None/None
ROSACEAE - Rose Family		
Adenostoma fasciculatum var. *fasciculatum*	Chamise	None/None/None
Cercocarpus minutiflorus	San Diego mountain- mahogany	None/None/None
Drymocallis glandulosa var. *glandulosa*	Sticky cinquefoil	None/None/None
Heteromeles arbutifolia	Toyon	None/None/None
Prunus ilicifolia	Holly-leaf cherry	None/None/None
RUBIACEAE - Madder Family		
Galium angustifolium	Narrowly-leaf bedstraw	None/None/None
SALICACEAE - Willow Family		
Salix lasiolepis	Arroyo willow	None/None/None
SCROPHULARIACEAE – Figwort Family		
Scrophularia californica	California figwort	None/None/None
SOLANACEAE - Nightshade Family		
**Nicotiana glauca*	Tree tobacco	None/None/None
Solanum parishii	Parish's nightshade	None/None/None
TAMARICACEAE - Tamarisk Family		
**Tamarix ramosissima*	Saltcedar	None/None/None
URTICACEAE - Nettle Family		
Parietaria hespera	Western pellitory	None/None/None
Vascular Species - Ferns and Fern Allies		
SELAGINELLACEAE - Spike Moss Family		
Selaginella bigelovii	Bigelow's spike moss	None/None/None
DRYOPTERIDACEAE - Wood Fern Family		
Dryopteris arguta	California wood fern	None/None/None
PTERIDACEAE - Maidenhair Fern Family		
Cheilanthes newberryi	Newberry's lip fern	None/None/None
Pellaea mucronata var. *mucronata*	Bird's foot fern	None/None/None
Pentagramma triangularis subsp. *triangularis*	California goldback fern	None/None/None
Vascular Species - Monocots		
AGAVACEAE - Agave Family		
Chlorogalum parviflorum	Small-flower soap-plant	None/None/None
Hesperoyucca whipplei	Chaparral candle	None/None/None
**Yucca gloriosa*	Moundlily yucca	None/None/None
ARECACEAE - Palm Family		
**Washingtonia robusta*	Mexican fan palm	None/None/None
CYPERACEAE - Sedge Family		
Carex spissa	San Diego sedge	None/None/None
Eleocharis macrostachya	Pale Spike-rush	None/None/None

Scientific name	Common name	Status (Federal/State/ County, North County Plan)
IRIDACEAE - Iris Family		
Sisyrinchium bellum	Blue-eyed grass	None/None/None
JUNCACEAE - Rush Family		
Juncus dubius	Mariposa rush	None/None/None
Juncus bufonius	Toad rush	None/None/None
POACEAE - Grass Family		
**Avena fatua*	Wild oat	None/None/None
**Bromus diandrus*	Ripgut grass	None/None/None
**Bromus hordeaceus*	Soft chess	None/None/None
**Bromus madritensis*	Compact brome	None/None/None
**Cortaderia selloana*	Pampas grass	None/None/None
Distichlis spicata	Salt grass	None/None/None
**Festuca myuros*	Rat-tail fescue	None/None/None
Elymus condensatus	Giant wild-rye	None/None/None
Festuca octoflora	Tufted fescue	None/None/None
**Melinis repens* subsp. *repens*	Natal grass	None/None/None
Muhlenbergia rigens	Deer grass	None/None/None
**Pennisetum setaceum*	Fountain grass	None/None/None
**Polypogon monspeliensis*	Annual beard grass	None/None/None
**Schismus barbatus*	Mediterranean schismus	None/None/None
**Sorghum halepense*	Johnsongrass	None/None/None
Stipa coronata	Giant stipa	None/None/None
Stipa lepida	Foothill needle grass	None/None/None
THEMIDACEAE - Brodiaea Family		
Dichelostemma capitatum	Blue dicks	None/None/None

*Signifies non-native species

APPENDIX B

SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR

Appendix B
Special-Status Plant Species With Potential to Occur

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
Plants						
San Diego thorn-mint	*Acanthomintha ilicifolia*	USFWS: Threatened CDFW: Endangered CRPR: List 1B.1 County: List A North County Plan: 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, which noticeably compresses when treaded upon even during the dry season.	Unmapped clay soils may occur in patches on site.	Low potential to occur if clay soil patches discovered.
California adolphia	*Adolphia californica*	CRPR: List 2.1	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. California adolphia is associated with California buckwheat and California sagebrush.	Unmapped clay soils may occur in patches on the site.	Low potential to occur if clay soil patches are discovered
San Diego ambrosia	*Ambrosia pumila*	USFWS: Endangered CRPR: List 1B.1	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.	Low drainage areas could provide habitat.	Low potential to occur, known from vicinity
Del Mar manzanita	*Arctostaphylos glandulosa* ssp. *crassifolia*	USFWS: Endangered CRPR: List 1B.1	Chaparral (maritime, sandy). Elevation 0–365 meters. Perennial evergreen shrub. Blooms December–June.	Found in substrate with eroding sandstone, and chaparral vegetation is relatively low-growing. Soils include terrace escarpments and loamy alluvial land	Known from region but lower potential to occur because normally found on sandstone substrate.	Lower potential to occur but known from the region

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
				of Huerhuero complex.		
Rainbow manzanita	*Arctostaphylos rainbowensis*	CRPR: List 1B.1 County: List A	Chaparral on gabbro and other granitic rocks Blooms January-February	Found on rocky areas and north slopes.	Collection known from vicinity	Moderate potential to occur since collection known from general vicinity
San Diego sagewort	*Artemisia palmeri*	CRPR: List 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.	Low areas on site may support habitat for the species	Lower potential to occur but occurs in similar habitats to the southwest.
San Diego milk-vetch	*Astragalus oocarpus*	CRPR: List 1B.2	Montane chaparral Blooms May-August	Openings between chaparral shrubs and oak trees	Habitat exists on site.	Lower potential to occur because most habitat is higher in elevation though a lower elevation collection has been made to the south.
Coulter's saltbush	*Atriplex coulteri*	CRPR: List 1B.2	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 is preferred but it has been collected at higher elevations.	Plant has been collected in habitat generally comparable to site.	Lower potential to occur because site is higher in elevation than normal for the species though it has been collected in a couple of locations with higher elevation.
Parish's brittlescale	*Atriplex parishii*	CRPR: List 1B.1	Alkaline or wetland and lowland soils Blooms June-October	Alkaline areas or open wetland habitats	Low drainage areas on site have potential.	Lower potential to occur because site is higher in elevation for the species though it has been collected ten miles to the south.
Encinitas baccharis	*Baccharis vanessae*	USFWS: Threatened CDFW: Endangered CRPR: List 1B.1	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.	Habitat for the species exists on the site in rocky peak areas	Moderate potential to occur since it has been found on rocky peak areas in central San Diego County.
Nevin's barberry	*Berberis nevinii*	USFWS: Endangered CDFW: Endangered CRPR: List 1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub (sandy or gravelly). Elevation 274–825 meters. Evergreen shrub.	Chaparral with strong desert affinities.	Rocky ridge habitat has potential for this species.	Low potential to occur on rocky ridge areas.

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
			Blooms March–June			
San Diego goldenstar	*Bloomeria clevelandii*	CRPR: List 1B.1	Clay, chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 50–465 meters. Perennial bulbiferous herb. Blooms April–May.	Clay soil and loamy soil patches in openings of chaparral and sage scrub habitats	Loamy conditions occur on site and a few clay patches may occur	Low potential. Known locations are to the southwest.
Thread-leaved brodiaea	*Brodiaea filifolia*	USFWS: Threatened CDFW: Endangered CRPR: List 1B.1 County: List A	Clay soils in grassy habitats and openings in chaparral Blooms April-July	Clay soils on mesas and gentle slopes	Clay patches could occur on site but not known.	Low potential to occur. Known locations to the west. Site is higher in elevation than normal locations.
Orcutt's brodiaea	*Brodiaea orcuttii*	CRPR: 1B.1	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, vernally moist grasslands, periphery of vernal pools and ephemeral streams. Soils consist of stockpen gravelly loam and Redding gravelly loam.	Could occur in vernally moist drainages.	Moderate potential to occur due to collection location nearby
Round-leaved filaree	*California macrophylla*	CRPR: List 1B.1	Clay soils Blooms March-July	Clay lenses with grassy cover	Unmapped clay lenses may occur on site	Low potential due to lack of known clay soils
Payson's jewelflower	*Caulanthus simulans*	CRPR: List 4.2	Typically coarse sandy soils Blooms March-June	Openings in chaparral and desert scrub habitats	Openings in chaparral exist on site.	Not expected because outside of the normal range though there are old collections from areas to the north of the site.
wart-stemmed ceanothus	*Ceanothus verrucosus*	CRPR: List 2.2	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	Maritime forms of chaparral have not been observed on the site	Not expected because outside of the normal range of the species which is mostly in coastal regions.
southern tarplant	*Centromadia parryi* ssp. *australis*	CRPR: List 1B.1	Margins of marshes and swamps, valley and foothill grassland, vernal pools. Elevation 0–425 meters. Annual herb.	Low alkali habitats and vernally moist low grasslands	Limited area of potentially qualifying habitat exists on site	Not expected due to isolated nature of limited potentially suitable habitat on site.

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
			Blooms May–November.			
smooth tarplant	*Centromadia pungens* ssp. *laevis*	CRPR: List 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.	Lowland alkali habitat and vernally moist low grasslands	Limited area of potentially qualifying habitat exists on site.	Not expected due to isolated nature of limited potentially suitable habitat on site.
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*	CRPR: List 1B.1	Sandy coastal bluff scrub, and coastal dunes. Elevation 0–100 meters. Annual herb. Blooms January–August.	Sandy soils along the immediate coast or in river valley	Suitable habitat not known from area	Not expected due to lack of suitable habitat and geographic location.
Orcutt's spineflower	*Chorizanthe orcuttiana*	USFWS: Endangered CDFW: Endangered CRPR: List 1B.1	Sandy openings, closed coniferous forest, maritime chaparral, coastal scrub. Elevation 3–125 meters. Annual herb. Blooms March–May.	Coastal chaparral openings in chamise with loose sand substrate. Soils include corralitos loamy sand and loamy alluvial land in the Huerhuero complex.	No suitable habitat on site	Not expected due to lack of suitable habitat and geographic location far east of normal distribution
delicate clarkia	*Clarkia delicata*	CRPR: List 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. It is found in vernally mesic situations. Soils include banacas stony loam.	Oak woodland and chaparral habitat occurs on site.	Moderate potential to occur on site due to suitable habitat.
summer holly	*Comarostaphylis diversifolia* ssp. *diversifolia*	CRPR: List 1B.2	Chaparral and cismontane woodland. Elevation 30–790 meters. Perennial evergreen shrub. Blooms April–June.	Southern mixed chaparral, usually in mesic areas, north-facing slopes. This species is found west of I-15.	Suitable habitat exists on the lower slopes of Bottle Peak and the north side of this preserve	Moderate potential to occur due to suitable habitat on site and the occurrence of the species in other locations that are somewhat inland like the project.

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
Del Mar Mesa sand aster	*Corethrogyne filaginifolia* var. *linifolia*	CRPR: List 1B.1	Sandy habitat, coastal bluff scrub, maritime chaparral, coastal scrub. Elevation 15–150 meters. Perennial herb. Blooms May–September.	Openings in shrub vegetation on sandy soils	Sandy soils associated with sedimentary deposits is lacking on site. Site is distant from existing locations for this taxa	Not expected due to distance from coast and lack of sedimentary sandstones on site.
Cuyamaca larkspur	*Delphinium hesperium ssp. cuyamacae*	CRPR: List 1B.2	Montane meadows	Grassy soils on edges of meadows	No habitat present on site	Not expected due to lower elevation and lack of montane meadow habitat.
variegated dudleya	*Dudleya variegata*	CRPR: List 1B.2	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 found near vernal pools. Soils include stockpen gravelly loams and Redding gravelly loams.	Generally known from lower elevation areas and thin soils on metavolcanic rock or granitic slabs. No good habitat on site.	Not expected due to distance inland and lack of suitable soils.
sticky dudleya	*Dudleya viscida*	CRPR: List 1B.2	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub. Elevation 10–550 meters. Perennial herb. Blooms May–June.	Steep slopes or cliff edges	Habitat on site is somewhat similar to habitat in the Santa Margarita Mountains to the northwest	Not expected due to distance from known locations and inland location
Palmer's goldenbush	*Ericameria palmeri* var. *palmeri*	CRPR: List 1B.1	Mesic habitat, chaparral, and coastal scrub. Elevation 30–600 meters. Perennial evergreen shrub. Blooms July–November.	Coastal drainages, mesic chaparral, and occasionally occurs as a hillside element. Soils include Las Posas fine sandy loam.	Habitat more associated with larger drainages than occur on site.	Low potential due to lack of major drainage habitat.
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	USFWS: Endangered CDFW: Endangered CRPR: List 1B.1	Mesic habitat, coastal scrub, valley and foothill grassland, and vernal pools. Elevation 20–620 meters.	Areas with vernal pools, mima mounds, and vernally moist	No vernal pool habitat on site.	Not expected due to lack of vernal pool habitat on site.

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
			Annual and perennial herb. Blooms April–June.	conditions. Soils include Redding gravelly loams.		
San Diego barrel cactus	*Ferocactus viridescens*	CRPR: List 2.1 North County Plan: 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.	Low elevation coastal scrub lacking on site.	Not expected due to lack of habitat.
Palmer's grapplinghook	*Harpagonella palmeri*	CRPR: List 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.	Occurs on clay soils that have not been observed on site.	Low potential due to lack of potential habitat.
Orcutt's hazardia	*Hazardia orcuttii*	USFWS: Candidate CDFW: Threatened CRPR: List 1B.1	Coastal clay and loamy soils on sedimentary formations	Scrub habitat along the coast in clay soils	Site does not have coastal clay and loamy soils	Not expected due to distance from coast and suitable habitat.
beach goldenaster	*Heterotheca sessiliflora* ssp. *sessiliflora*	CRPR: List 1B.1	Chaparral (coastal), coastal dunes, and coastal scrub. Elevation 0–1,225 meters. Perennial herb. Blooms March–December.	Coastal scrub in sandy locales. Found on beach bluffs and maritime locales.	Site does not have coastal sandy soils.	Not expected due to distance from coast and lack of suitable sandy soil habitat.
Mesa horkelia	*Horkelia cuneata var. puberula*	CRPR: List 1B.1	Semi moist conditions in seep areas	Chaparral and scrub habitats	Seep areas with suitable habitat not present on site	Not expected due to lack of suitable habitat.
Ramona horkelia	*Horkelia truncata*	CRPR: List 1B.3	Clay and gabbroic habitat. Elevation 400–1,300 meters. Perennial herb. Blooms May–June.	Chamise chaparral. Soil types include Cieneba very rocky coarse sandy loams and gabbro, frequently on ridge tops.	Some habitat on site may have potential for this species.	Low potential to occur due to lack of identified gabbro soils

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
decumbent goldenbush	*Isocoma menziesii* var. *decumbens*	CRPR: List 1B.2	Chaparral and coastal scrub (sandy, often open in disturbed areas). Elevation 10–135 meters. Perennial shrub. Blooms April–November.	Coastal sage scrub and is found in clay soils in coastal regions	Site lacks the coastal clay soils	Not expected to occur due to distance from the coastal habitat where species generally occurs.
San Diego marsh-elder	*Iva hayesiana*	CRPR: List 2.2	Marshes, swamps, and playas. Elevation 10–500 meters. Perennial herb. Blooms April–October.	Creeks and intermittent streambeds, open riparian canopy allowing substantial sunlight.	Low drainages on site are potentially suitable habitat	Low potential to occur due to habitat on site but farther inland than known locations in this part of the County.
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	CRPR: List 1B.2	Chaparral and coastal scrub. Elevation 1–885 meters. Annual herb. Blooms February–July.	Openings in chaparral and sage scrub, usually found in foothill elevations. Sites are dry, exposed locales.	Site contains suitable habitat	Species has moderate potential to occur on site.
sea dahlia	*Leptosyne maritima*	CRPR: List 2.2	Coastal bluff scrub and coastal scrub. Elevation 5–150 meters. Perennial herb. Blooms March–May.	Slopes and banks near the coast	No habitat on site.	Not expected to occur due to distance of site from the coast.
lemon lily	*Lilium parryi*	CRPR: List 1B.2	Montane meadows Blooms June-September	Moist areas near streams	No habitat for this species exists on site.	Not expected to occur because site is far from known locations and lacks suitable habitat
Orcutt's linanthus	*Linanthus orcutti*	CRPR: List 1B.2	Open loamy soils in montane environment	Openings in shrubs and trees	No habitat exists on site for this species	Not expected to occur. Site is at much lower in elevation than habitat typical for this species.
felt-leaved monardella	*Monardella hypoleuca* ssp. *lanata*	CRPR: List 1B.2	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.	Habitat exists on site that could serve the species.	Moderate potential due to ridge top and suitable understory habitat present on site.
Hall's monardella	*Monardella macrantha ssp. hallii*	CRPR: List 1B.3	Montane forest habitat May-August	Openings in montane forest areas	No suitable habitat exists on site.	Not expected due to lack of suitable habitat and distance from forest areas.

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
San Felipe monardella	*Monardella nana ssp. leptosiphon*	CRPR: List 1B.2	Chaparral and rocky habitats at higher elevations Blooms May-August	Rocky habitats on ridges and upper slopes	No suitable habitat due to low elevation of site	Not expected due to geographic distance for known locations.
little mousetail	*Myosurus minimus* ssp. *apus*	CRPR: List 3.1	Valley and foothill grassland and alkaline vernal pools. Elevation 20–640 meters. Annual herb. Blooms March–June.	Vernal pools. Soils include Huerhuero loam.	No suitable vernal pool or vernal wetland habitat exists on site	Not expected due to lack of habitat on site.
spreading navarretia	*Navarretia fossalis*	USFWS: Threatened CRPR: List 1B.1 North County Plan: 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	No vernal pool or suitable vernal wetlands on site	Not expected due to lack of suitable habitat on site.
Chaparral nolina	*Nolina cismontana*	CRPR: List 1B.2	Gabbro chaparral Blooms May-July	Ridges and slopes in chaparral areas on Las Posas soils.	No known gabbro soil exists on the site but it does occur nearby	Not expected due to lack of suitable habitat.
Nuttall's scrub oak	*Quercus dumosa*	CRPR: List 1B.1	Sandy and clay loam habitat. Elevation 15–400 meters. Perennial evergreen shrub. Blooms February–August.	Coastal chaparral with a relatively open canopy cover and relatively flat terrain.	No suitable habitat exists on site due to distance from the coast	Not expected due to distance from the coast
Engelmann oak	*Quercus engelmannii*	CRPR: List 4.2 County: List D North County Plan: Covered	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation 50–1,300 meters. Perennial deciduous tree. Blooms March–June.	Oak woodland, southern mixed chaparral, and grasslands.	Suitable habitat present on site	**Present.** Engelmann oak was found on-site during the spring survey.
southern mountains skullcap	*Scutellaria bolanderi ssp. austromontana*	CRPR: List 1B.2	Moist areas in montane areas Blooms June-July	Rocky stream edges in mountainous areas	No suitable habitat present on site	Not expected because typically occurs in montane areas at higher elevations to the east.

Common Name	Scientific Name	Status[1]	General Habitat Description[2]	Microhabitat Description[3]	Habitat Present/ Absent	Rationale
purple stemodia	*Stemodia durantifolia*	CRPR: List 2.1	Ephemerally dry moist locations in dry landscape. Elevation 180–300 meters. Perennial herb. Blooms February–December.	Rocky drainage areas	No suitable habitat observed	Low potential due to no observed suitable habitat and distance from other known locations
San Bernardino aster	*Symphyotrichum defoliatum*	CRPR: List 1B.2	Forested and woodland areas with some occurrences in chaparral Blooms July-November	Higher elevation openings in forest, woodlands and chaparral	No habitat present due to lower elevation of site	Not expected because typically occurs in montane areas at higher elevations to the east.
Parry's tetracoccus	*Tetracoccus dioicus*	CRPR: List 1B.2	Chaparral on soils derived from gabbro Blooms April-May	Las Posas soils derived from gabbro or in locations adjacent to those soils.	No mapped locations of gabbro soils known from site	Low potential to occur. Some chance there could be unmapped gabbro on site

1. Federal — U.S. Fish and Wildlife Service (USFWS)
2. State — California Department of Fish and Wildlife (CDFW)

Other — California Rare Plant Rank (CRPR):
1B: Plants rare, threatened, or endangered in California and elsewhere
2: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants more information is needed – a review list
4: Plants of limited distribution – a watch list

CRPR R-E-D Code -
R (Rarity): 1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time; 2 = Occurrence confined to several populations or to one extended population;
3 = Occurrence limited to one or a few highly restricted populations, or present in such numbers that it is seldom reported
E (Endangerment): 1 = Not endangered; 2 = Endangered in a portion of its range; 3 = Endangered throughout its range
D (Distribution): 1 = More or less widespread outside California; 2 = Rare outside California; 3 = Endemic to California

County Designations-
County List A — Plants rare, threatened, or endangered in California and elsewhere
County List B — Plants rare, threatened, or endangered in California but common elsewhere
County List C — Plants which may be rare, but need more information to determine their true rarity status
County List D — Plants of limited distribution and are uncommon, but not presently rare or endangered

North County Plan: Included on the draft North County Multiple Species Conservation Program (North County Plan) covered plant species list (2009)

APPENDIX C

WILDLIFE SPECIES DETECTED

Appendix C
Wildlife Species Detected

Common Name	Scientific Name	Status (Federal/State/ County, North County Plan[1]
Invertebrates		
Family Lycosidae		
Wolf spider sp.	--	None/None/None
Family Scarabaeidae		
Figeater beetle	*Cotinis mutabilis*	None/None/None
Family Tenebrionidae		
Darkling beetle	*Eleodes sp.*	None/None/None
Family Forficulidae		
European earwig	*Forficula auricularia*	None/None/None
Family Apidae		
Western honeybee	*Apis mellifera*	None/None/None
Family Formicidae		
Ant spp.	--	None/None/None
Family Mutillidae		
Velvet ant sp.	*Dasymutilla sp.*	None/None/None
Family Pompilidae		
Tarantula hawk spp.	*Pepsis spp.*	None/None/None
Family Ixodidae		
Pacific coast tick	*Dermacentor occidentalis*	None/None/None
Family Hesperiidae		
Funereal duskywing	*Erynnis funerealis*	None/None/None
Mournful duskywing	*Erynnis tristis*	None/None/None
Rural skipper	*Ochlodes agricola*	None/None/None
Family Lycaenidae		
Bernardino blue	*Euphilotes Bernardino*	None/None/None
Marine blue	*Leptotes marina*	None/None/None
Hedgerow hairstreak	*Satyrium saepium*	None/None/None
Mountain mahogany hairstreak	*Satyrium tetra*	None/None/None
Family Nymphalidae		
Painted lady	*Vanessa sp*	None/None/None
FamilyPieridae		
Checkered white	*Pontia protodice*	None/None/None
Family Riodinidae		
Behr's metalmark	*Apodemia mormo virgulti*	None/None/None
Order Odonata, Family Unknown		
Dragonfly spp.	--	None/None/None
Family Gryllidae		
True cricket sp.	--	None/None/None

Common Name	Scientific Name	Status (Federal/State/ County, North County Plan[1]
Family Stenopelmatidae		
Jerusalem cricket	--	None/None/None
Family Scolopendridae		
Centipede spp.	--	None/None/None
Family Eremobatidae		
Windscorpion spp.	--	None/None/None
Reptiles & Amphibians		
Family Phrynosomatidae		
Coast horned lizard	*Phrynosoma blainvillii*	None/CSC/County Group 2, Covered
Family Scincidae		
Coronado island skink	*Plestiodon skiltonianus interparietalis*	None/CSC/County Group 2
Family Teiidae		
Belding's orange-throated whiptail	*Aspidoscelis hyperythra beldingi*	None/CSC/County Group 2, Covered
Coastal western whiptail	*Aspidoscelis tigris stejnegeri*	None/None/County Group 2
Family Anguidae		
Southern alligator lizard	*Elgaria multicarinata*	None/None/None
Family Phrynosomatidae		
Western fence lizard	*Sceloporus occidentalis*	None/None/None
Granite spiny lizard	*Sceloporus orcutti*	None/None/None
Side-blotched lizard	*Uta stansburiana*	None/None/None
Family Xantusiidae		
Granite night lizard	*Xantusia henshawi*	None/None/None
Family Colubridae		
California striped racer	*Coluber lateralis lateralis*	None/None/None
California kingsnake	*Lampropeltis californiae*	None/None/None
Gopher snake	*Pituophis catenifer*	None/None/None
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	None/CSC/County Group 2
Family Viperidae		
Southwestern speckled rattlesnake	*Crotalus mitchellii pyrrhus*	None/None/None
Southern Pacific rattlesnake	*Crotalus oreganus helleri*	None/None/None
Avian		
Family Accipitridae		
Red-tailed hawk	*Buteo jamaicensis*	None/None/None
Family Cathartidae		
Turkey vulture	*Cathartes aura*	None/None/County Group 1
Family Apodidae		
White-throated swift	*Aeronautes saxatalis*	None/None/None

Common Name	Scientific Name	Status (Federal/State/ County, North County Plan[1]
Family Trochilidae		
Anna's hummingbird	*Calypte anna*	None/None/None
Costa's hummingbird	*Calypte costae*	None/None/None
Family Caprimulgidae		
Common poorwill	*Phalaenoptilus nuttallii*	None/None/None
Family Columbidae		
Mourning dove	*Zenaida macroura*	None/None/None
Family Cuculidae		
Greater roadrunner	*Geococcyx californianus*	None/None/None
Family Aegithalidae		
Bushtit	*Psaltriparus minimus*	None/None/None
Family Cardinalidae		
Black-headed grosbeak	*Pheucticus melanocephalus*	None/None/None
Family Corvidae		
Western scrub-jay	*Aphelocoma californica*	None/None/None
American crow	*Corvus brachyrhynchos*	None/None/None
Common raven	*Corvus corax*	None/None/None
Family Emberizidae		
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	None/CDFW WL/County Group 1, Covered
Lark sparrow	*Chondestes grammacus*	None/None/None
California towhee	*Melozone crissalis*	None/None/None
Spotted towhee	*Pipilo maculatus*	None/None/None
Black-chinned sparrow	*Spizella atrogularis*	None/None/None
Family Fringillidae		
House finch	*Haemorhous mexicanus*	None/None/None
Lawrence's goldfinch	*Spinus lawrencei*	None/None/None
Lesser goldfinch	*Spinus psaltria*	None/None/None
Family Hirundinidae		
Barn swallow	*Hirundo rustica*	None/None/None
Cliff swallow	*Petrochelidon pyrrhonota*	None/None/None
Violet-green swallow	*Tachycineta thalassina*	None/None/None
Family Icteridae		
Red-winged blackbird	*Agelaius phoeniceus*	None/None/None
Bullock's oriole	*Icterus bullockii*	None/None/None
Brown-headed cowbird	*Molothrus ater*	None/None/None
Family Mimidae		
California thrasher	*Toxostoma redivivum*	None/None/None
Family Paridae		
Oak titmouse	*Baeolophus inornatus*	None/None/None

Common Name	Scientific Name	Status (Federal/State/ County, North County Plan[1]
Family Parulidae		
Wilson's warbler	*Cardellina pusilla*	None/None/None
Macgillivray's warbler	*Geothlypis tolmiei*	None/None/None
Orange-crowned warbler	*Oreothlypis celata*	None/None/None
Yellow-rumped warbler	*Setophaga coronata*	None/None/None
Townsend's warbler	*Setophaga townsendi*	None/None/None
Family Polioptilidae		
Blue-gray gnatcatcher	*Polioptila caerulea*	None/None/None
Family Ptilogonatidae		
Phainopepla	*Phainopepla nitens*	None/None/None
Family Sylviidae		
Wrentit	*Chamaea fasciata*	None/None/None
Family Troglodytidae		
Canyon wren	*Catherpes mexicanus*	None/None/None
Rock wren	*Satyrium auretorum*	None/None/None
Bewick's wren	*Thryomanes bewickii*	None/None/None
House wren	*Troglodytes aedon*	None/None/None
Family Turdidae		
Hermit thrush	*Catharus guttatus*	
Family Tyrannidae		
Olive-sided flycatcher	*Contopus cooperi*	None/CSC/County Group 2
Western wood-pewee	*Contopus sordidulus*	None/None/None
Pacific-slope flycatcher	*Empidonax difficilis*	None/None/None
Ash-throated flycatcher	*Myiarchus cinerascens*	None/None/None
Cassin's kingbird	*Tyrannus vociferans*	None/None/None
Family Vireonidae		
Warbling vireo	*Vireo gilvus*	None/None/None
Hutton's vireo	*Vireo huttoni*	None/None/None
Family Ardeidae		
Black-crowned night-heron	*Nycticorax nycticorax*	None/None/None
Family Picidae		
Northern flicker	*Colaptes auratus*	None/None/None
Acorn woodpecker	*Melanerpes formicivorus*	None/None/None
Nuttall's woodpecker	*Picoides nuttallii*	None/None/None
Family Tytonidae		
Barn owl	*Tyto alba*	None/None/County Group 2
Family Phalacrocoracidae		
Double-crested cormorant	*Phalacrocorax auritus*	None/CDFW WL/None

Common Name	Scientific Name	Status (Federal/State/ County, North County Plan[1]
Mammals		
Family Cervidae		
Mule deer	*Odocoileus hemionus*	None/None/County Group 2
Family Canidae		
Coyote	*Canis latrans*	None/None/None
Gray fox	*Urocyon cinereoargenteus*	None/None/None
Family Felidae		
Bobcat	*Lynx rufus*	None/None/None
Family Mephitidae		
Striped skunk	*Mephitis mephitis*	None/None/None
Family Molossidae		
Western mastiff bat	*Eumops perotis californicus*	None/CSC/County Group 2
Brazilian free-tailed bat	*Tadarida brasiliensis*	None/None/None
Family Vespertilionidae		
Pallid bat	*Antrozous pallidus*	None/CSC/County Group 2
Big brown bat	*Eptesicus fuscus*	None/None/None
Western small-footed myotis	*Myotis ciliolabrum*	None/None/None
Yuma myotis	*Myotis yumanensis*	None/None/None
Western pipistrelle	*Pipistrellus hesperus*	None/None/None
Family Leporidae		
Desert cottontail	*Sylvilagus audubonii*	None/None/None
Family Heteromyidae		
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	None/CSC/None
Dulzura kangaroo rat	*Dipodomys simulans*	None/None/None
Family Muridae		
Large-eared woodrat	*Neotoma macrotis*	None/None/None
California mouse	*Peromyscus californicus*	None/None/None
Cactus mouse	*Peromyscus eremicus*	None/None/None
Deer mouse	*Peromyscus maniculatus*	None/None/None
Western harvest mouse	*Reithrodontomys megalotis*	None/None/None
Family Sciuridae		
California ground squirrel	*Spermophilus beecheyi*	None/None/None

[1] Status Abbreviations: CSC - California Species of Special Concern; CDFW WL: California Department of Fish and Wildlife Watch List

APPENDIX D

SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR

Appendix D
Special-Status Wildlife Species with Potential to Occur on Property

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence
INVERTEBRATES				
Branchinecta sandiegonensis	San Diego fairy shrimp	Federal: Endangered County: Group 1 North County Plan: Covered	Vernal pools and seasonal depressions, restricted to mesas and other areas with suitable soils.	**Not expected to occur**. The Property contains no suitable habitat (vernal pools) for this species.
Lycaena hermes	Hermes copper butterfly	Federal: Candidate County: Group 1	Hermes copper butterfly larvae utilize redberry (*Rhamnus crocea*) as a foodplant and the distribution of the Hermes copper is closely tied to the distribution of redberry, typically occurring in chaparral or coastal sage scrub. Adults visit flowers, especially those of flat-top buckwheat (*Eriogonum fasciculatum*).	**High potential to occur**. The property contains suitable chaparral habitat with abundant nectar sources. Larval host plants may be present.
Pyrgus ruralis lagunae	Laguna Mountains skipper	Federal: Endangered County: Group 1	Inhabits wet montane meadows, reaching altitudes of approximately 4,000 to 6,000 feet (1,800 m) in yellow pine forests of the Laguna and Palomar Mountains. The larval host plant is Cleveland's Horkelia (*Horkelia clevelandii*)	**Not expected to occur**. The Property is located outside of the known range of this species.
AMPHIBIANS				
Anaxyrus californicus	Arroyo toad	Federal: Endangered State: CSC County: Group 1 North County Plan: Covered	Gravelly or sandy washes, stream and river banks, and arroyos. Also upland habitat near washes and streams such as sage scrub, mixed chaparral, Joshua tree woodland, and sagebrush habitats.	**Not expected to occur**. The Property contains no suitable habitat for this species.
Spea hammondii	Western spadefoot	State: CSC County: Group 2 North County Plan: Covered	Sandy or gravelly soil in grasslands, open chaparral and pine-oak woodlands, coastal sage scrub; vernal pools or freshwater marshes are essential for breeding.	**High potential to occur**. The Property contains suitable habitat for this species.
Rana muscosa	Sierra Madre yellow-legged frog	Federal: Endangered County: Group 1	Inhabits rocky streams in narrow canyons and in the chaparral belt.	**Not expected to occur**. This species is extirpated from San Diego County
REPTILES				
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	State: CSC County: Group 2 North County Plan: Covered	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food-termites.	**Present**. This species was documented during AECOM surveys in spring 2014.

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence
Aspidoscelis tigris stejnegeri	Coastal whiptail	County: Group 2	Open areas in grasslands, scrublands, and woodlands.	**Present**. This species was documented during AECOM surveys in spring 2014.
Lichanura orcutti	Northern Three-lined Boa (former subspecies of coastal rosy boa)	County: Group 2	Scrub habitats with rock outcrops. Once common on the coast, now typically found in inland locations.	**High potential to occur**. The Property contains suitable habitat for this species.
Coleonyx variegatus abbottii	San Diego banded gecko	County: Group 2	Occurs in arid areas including creosote flats, sagebrush desert, pinion-juniper woods, and chaparral. Prefers rocky areas but may occur in rock-free areas such as sand dunes.	**High potential to occur.** The Property contains suitable habitat for this species.
Crotalus ruber	Red diamond rattlesnake	State: CSC County: Group 2 North County Plan: Covered	Coastal sage scrub and grasslands. Occurs in rocky areas and dense vegetation with rodent burrows, cracks in rocks, or surface cover objects.	**High potential to occur**. The Property contains suitable habitat for this species.
Diadophis punctatus similis	San Diego ringed neck snake	County: Group 2	Prefers moist habitats, including wet meadows, rocky hillsides, gardens, grassland, chaparral,, mixed coniferous woods, and woodlands.	**High potential to occur**. The Property contains suitable habitat for this species.
Anniella stebbinsi	Southern California legless lizard (formerly silvery legless lizard)	State: CSC County: Group 2	Occurs in moist warm loose soil with plant cover.	**High potential to occur**. The Property contains suitable habitat for this species.
Clemmys marmorata pallida	Southwestern pond turtle	State: CSC County: Group 1 North County Plan: Covered	Ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	**Not expected to occur.** The Property lacks suitable wetland habitat for this species.
Ensatina klauberi	Large-blotched salamander	State: CSC County: Group 1	Inhabits moist shaded evergreen and deciduous forests and oak woodlands on Palomar Mountain and in the Peninsular Ranges.	**Not expected to occur.** The Property lies outside the known range of this species.
Phrynosoma blainvillei	Coast horned lizard	State: CSC County: Group 2 North County Plan: Covered	Coastal sage scrub and chaparral in arid and semi-arid climate conditions. Prefers friable, rocky, or shallow sandy soils.	**Present**. This species was documented during AECOM surveys in spring 2014.
Eumeces skiltonianus interparietalis	Coronado Island skink	State: CSC County: Group 2	Scrub habitats with leaf litter and sandy substrates.	**Present**. This species was documented during AECOM surveys in spring 2014.
Salvadora hexalepis virgultea	Coast patch-nosed snake	State: CSC County: Group 2	Grasslands, scrublands, and woodlands with sandy soils and leaf litter.	**Present**. This species was documented during AECOM surveys in spring 2014.
Thamnophis hammondii	Two-striped garter snake	State: CSC County: Group 2 North County Plan: Covered	Aquatic habitats, preferably rocky streams with protected pools, cattle ponds, marshes, vernal pools, and other shallow bodies of water lacking large aquatic predators.	**Low potential to occur**. The Property lies close enough to suitable wet drainages that there is potential for dispersal.

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence
BIRDS				
Accipiter cooperii	Cooper's hawk	State: CDFW WL (Nesting) County: Group 1	Usually found nesting in oak woodlands, but occasionally in willow or eucalyptus woodlands.	**High potential to occur**. The Property contains suitable habitat for this species.
Accipiter striatus	Sharp-shinned hawk	State: CDFW WL (Nesting) County: Group 1	A winter visitor, distributed over the coastal slope of San Diego County. The habitat of this species encompasses a variety of vegetation communities and land covers. It requires a certain amount of dense cover, but this can be localized and scattered through relatively open country.	**High potential to occur**. The Property contains suitable foraging habitat for this species, but the Property lies outside its known breeding range.
Agelaius tricolor	Tricolored blackbird	State: CDFW WL County: Group 1 North County Plan: Covered	Freshwater marshes with cattails and other emergent vegetation.	**Low potential to occur.** There is no suitable breeding habitat on site, but this species could be attracted to forage at seasonal pools.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	State: CDFW WL County: Group 1 North County Plan: Covered	Coastal sage scrub and sparse mixed chaparral, often in steep or rocky terrain.	**Present.** This species was documented during AECOM surveys in spring 2014.
Amphispiza belli	Bell's sparrow	State: CDFW WL County: Group 1 North County Plan: Covered	Coastal sage scrub and sparse chaparral, typically in large unfragmented blocks in inland locales.	**High potential to occur.** The Property contains suitable habitat for this species.
Aquila chrysaetos	Golden eagle	State: Fully Protected; CDFW WL (Nesting and Wintering) County: Group 1 North County Plan: Covered	Nests on cliff ledges and trees on steep slopes. Hunts for prey in nearby grasslands, sage scrub, or broken chaparral. Requires very large territories.	**High potential to occur**. The Property contains suitable foraging habitat for this species.
Athene cunicularia hypugaea	Western burrowing owl	State: CSC County: Group 1 North County Plan: Covered	Grasslands, open scrublands, and margins of agriculture fields with burrows. Subterranean nester, dependent upon burrowing mammals, especially California ground squirrel.	**Moderate potential to occur.** The Property contains areas of open scrubland with ground squirrel activity providing potential suitable burrows.
Buteo lineatus	Red-shouldered hawk	County: Group 1	Occurs mainly in swamp and forest habitats. They use the same nesting site from year to year.	**High potential to occur**. The Property contains suitable habitat for this species.
Campylorhynchus brunneicapillus sandiegensis	Coastal (San Diego) cactus wren	State: CSC County: Group 1 North County Plan: Covered	Coastal sage scrub usually with abundant cactus patches.	**Low potential to occur.** The Property lacks large patches of cactus that this species requires for nesting.

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence
Cathartes aura	Turkey vulture	County: Group 1	Forages aerially above virtually any vegetation type or terrain, except dense human development. Secluded cliff ledge or rock fissure in remote, rugged terrain required for nesting. Native or non-native tree groves in lowlands often used as winter roosts.	**Present.** This species was documented during AECOM surveys in spring 2014.
Charadrius alexandrinus nivosus	Western snowy plover	Federal: Threatened State: CSC County: Group 1	Coastal sandy beaches, dunes, and estuary habitats.	**Not expected to occur**. The Property contains no suitable habitat for this species.
Contopus cooperi	Olive-sided flycatcher	State: CSC County: Group 2	Inhabits openings in and edges to dense coniferous forests	**Present**. A migrating individual of this species was documented during AECOM surveys in spring 2014.
Dendroica petechia brewsteri	Yellow warbler	State: CSC County: Group 2	Mature riparian woodlands consisting of cottonwood, willow, alder, and ash trees. Restricted to this increasingly patchy habitat.	**Moderate potential to occur.** Very little riparian habitat occurs on the Property so this species is only likely to occur as a migrant.
Elanus leucurus	White-tailed kite	State: Fully Protected; CSC (Nesting) County: Group 1	Widespread over the coastal slope of San Diego County preferring riparian woodlands, oak groves, or sycamore groves adjacent to grasslands.	**High potential to occur**. The Property contains suitable habitat for this species.
Empidonax traillii extimus	Southwestern willow flycatcher	Federal: Endangered State: Endangered County: Group 1 North County Plan: Covered	Restricted to a few colonies in riparian woodlands scattered throughout southern California. Riparian forests are integral to this species' persistence.	**Low potential to occur**. Very little riparian habitat occurs on the Property so this species is only likely to occur as an occasional migrant.
Icteria virens	Yellow-breasted chat	State: CSC County: Group 1 North County Plan: Covered	Riparian woodland, with dense undergrowth.	**Low potential to occur**. Very little riparian habitat occurs on the Property so this species is only likely to occur as an occasional migrant.
Ixobrychus exilis	Least bittern	State: CSC County: Group 2	Marsh habitats or large emergent wetlands with cattails (*Typha* sp.) and tules.	**Not expected to occur**. The Property contains no suitable habitat for this species.
Laterallus jamaicensis coturniculus	California black rail	State: CSC, Fully Protected County: Group 2	Freshwater and saltwater marshes with bulrush or pickleweed.	**Not expected to occur**. The Property contains no suitable habitat for this species.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	State: Endangered County: Group 1	Salt marsh and mudflats with pickleweed.	**Not expected to occur**. The Property contains no suitable habitat for this species.
Phalacrocorax auritus	Double-crested cormorant	State: CDFW WL County: Group 2	Marine, freshwater and estuary environments. Needs water for foraging and perching areas to dry out.	**Present**. This species was documented during AECOM surveys in spring 2014.

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence
Plegadis chihi	White-faced ibis	State: CDFW WL County: Group 1 North County Plan: Covered	Freshwater marsh, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense freshwater marsh.	**Not expected to occur**. The Property contains no suitable habitat for this species.
Polioptila californica californica	Coastal California gnatcatcher	Federal: Threatened State: CSC County: Group 1 North County Plan: Covered	Coastal sage scrub below 2,500 feet in elevation. Low, coastal sage scrub, in arid washes, on mesas and slopes.	**Low potential to occur**. Scrub habitats on the Property are marginally suitable for this species.
Rallus longirostris levipes	Light-footed clapper rail	Federal: Endangered State: Endangered, Fully Protected County: Group 1 North County Plan: Covered	Coastal salt marshes and freshwater marshes with connection to estuarine habitats	**Not expected to occur**. The Property contains no suitable habitat for this species.
Sialia mexicana	Western bluebird	County: Group 2	Frequents open woodlands for foraging, but requires suitable roosting and nesting cavities usually in snags. Availability of snags may limit population density.	**High potential to occur.** The Property contains suitable habitat for this species.
Sterna antillarum browni	California least tern	Federal: Endangered State: Endangered, Fully Protected County: Group 1	Coastal beaches and saltflats.	**Not expected to occur**. The Property contains no suitable habitat for this species.
Tyto alba	Barn owl	County: Group 2	Inhabit grasslands, deserts, marshes, agricultural fields, narrow forest strips, brushy fields, and suburbs and cities. They nest in tree cavities, caves, and in buildings	**Present**. This species was documented during AECOM surveys in spring 2014.
Vireo bellii pusillus	Least Bell's vireo	Federal: Endangered State: Endangered County: Group 1 North County Plan: Covered	Willow and mulefat-dominated riparian forests and woodlands.	**Low potential to occur**. Very little riparian habitat occurs on the Property so this species is only likely to occur as an occasional migrant.
MAMMALS				
Antrozous pallidus	Pallid bat	State: CSC County: Group 2 North County Plan: Covered	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect species from high temperatures.	**Present**. This species was documented during AECOM surveys in spring 2014.

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence
Chaetodipus californicus femoralis	Dulzura pocket mouse	State: CSC County: Group 2	Slopes covered with chaparral and live oaks.	**Present**. This species was documented during AECOM surveys in spring 2014.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	State: CSC County: Group 2 North County Plan: Covered	Sagebrush scrub, annual grassland, chaparral, and desert scrubs. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	**Moderate potential to occur.** Suitable habitat is present on the Property
Dipodomys stephensi	Stephens' kangaroo rat	Federal: Endangered State: Threatened County: Group 1 North County Plan: Covered	Inhabits annual and perennial grassland habitats, but may occur in coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas.	**Moderate potential to occur.** Suitable habitat is present on the Property
Eumops perotis californicus	Western mastiff bat	State: CSC County: Group 2	Chaparral; live oaks; and arid, rocky regions. Requires downward-opening crevices.	**Present**. This species was documented during AECOM surveys in spring 2014.
Lasionycteris noctivagans	Silver-haired bat	State: Special Animal	Old growth coniferous or mixed coniferous and deciduous forests.	**Not expected to occur.** The Property contains no suitable habitat for this species.
Lasiurus blossevillii	Western red bat	State: CSC County: Group 2	Feeds over grasslands, shrublands, open woodlands, forests, and croplands. Roosts primarily in trees and at times, shrubs, often in edge habitats along streams, fields, or urban areas.	**Moderate potential to occur:** The Property contains suitable foraging habitat.
Lasiurus cinereus	Hoary bat	State: Special Animal	Prefers trees at the edge of clearings, but has been found in trees in heavy forests, open wooded glades, and shade trees along urban streets and in city parks.	**Moderate potential to occur:** The Property contains suitable foraging habitat.
Lasiurus xanthinus	Western yellow bat	State: CSC, Special Animal	Associated with thorny vegetation on the Mexican Plateau and found in desert regions of the southwestern United States, particularly in association with palms.	**Not expected to occur.** The Property lies outside the know range of this species.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	State: CSC County: Group 2 North County Plan: Covered	Grasslands, open scrub habitats, disturbed areas, and agricultural fields.	**High potential to occur.** The Property contains suitable habitat for this species.
Macrotus californicus	California leaf-nosed bat	State: CSC, Special Animal County: Group 2	Preferred habitats are caves, mines, and rock shelters, mostly in Sonoran desert scrub.	**Moderate potential to occur.** The Property contains moderately suitable habitat for this species.
Myotis ciliolabrum	Western small-footed myotis	State: Special Animal	Inhabits deserts, semideserts, and desert mountains, and roosts in crevices and cracks in canyon walls, caves, mine tunnels, behind loose tree bark, or in abandoned houses.	**Present**. This species was documented during AECOM surveys in 2014.
Myotis evotis	Long-eared myotis	County: Group 2	Uses mostly forested areas, especially with broken rock outcrops, also shrubland, meadows near tall timber, wooded streams, and reservoirs. Often roosts in buildings, hollow trees, mines, caves, fissures, etc.	**Moderate potential to occur.** The Property contains moderately suitable habitat for this species.

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence
Myotis thysanodes	Fringed myotis	State: CSC County: Group 2	Occurs in a variety of habitats from desert scrub to fir-pine associations. Oak and pinyon woodlands most commonly used. Roost within caves, mines, and buildings	**Moderate potential to occur.** The Property contains moderately suitable habitat for this species.
Myotis yumanensis	Yuma myotis	State: Special Animal County: Group 2	Primarily an inhabitant of desert regions where it is most commonly encountered in lowland habitats near open water, where it prefers to forage.	**Present**. This species was documented during AECOM surveys in 2014.
Neotoma lepida intermedia	San Diego desert woodrat	State: CSC County: Group 2	Sagebrush scrub, annual grassland, chaparral, and desert scrubs, often with cactus patches, rock outcrops, or rock piles.	**High potential to occur.** The Property contains suitable habitat for this species.
Nyctinomops femorosaccus	Pocketed free-tailed bat	State: CSC County: Group 2	Rugged cliffs, rocky outcrops, and slopes in desert shrub and pine oak forests.	**High potential to occur**. The Property contains suitable habitat for this species.
Nyctinomops macrotis	Big free-tailed bat	State: CSC County: Group 2	Low-lying arid areas in southern California.	**High potential to occur**. The Property contains suitable habitat for this species.
Odocoileus hemionus	Mule deer	County: Group 2	Mountain forests, wooded hills, desert areas and in chaparral.	**Present**. This species was documented during AECOM surveys in spring 2014.
Perognathus longimembris pacificus	Pacific pocket mouse	Federal: Endangered State: CSC County: Group 1	Coastal areas with sandy substrates and sparse vegetation.	**Not expected to occur**. The Property contains no suitable habitat for this species.
Puma concolor	Mountain lion	County: Group 2 North County Plan: Covered	Rugged mountains, forests, deserts, and swamps.	**High potential to occur**. The Property contains suitable habitat for this species.
Taxidea taxus	American badger	State: CSC County: Group 2 North County Plan: Covered	Shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food and friable soils. Preys on burrowing rodents.	**High potential to occur**. The Property contains suitable habitat for this species.

[1]Status Abbreviations: CSC – state species of special concern; CDFW WL – California Department of Fish and Wildlife Watch List Special Animal sensitivity by the Western Bat Working Group for bats only

APPENDIX E

AVIAN POINT LOCATION PHOTOGRAPHS

Point 1

Looking North

Point 1

Looking East

Point 1

Looking South

Point 1

Looking West

Point 2

Looking North

Point 2

Looking East

Point 2

Looking South

Point 2

Looking West

Point 3

Looking North

Point 3

Looking East

Point 3

Looking South

Point 3

Looking West

Point 4

Looking North

Point 4

Looking East

Point 4

Looking South

Point 4

Looking West

Point 5

Looking North

Point 5

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Looking South

Point 5

Looking West

Point 6

Looking North

Point 6

Looking East

Point 6

Looking South

Point 6

Looking West

Point 7

Looking North

Point 7

Looking East

Point 7

Looking South

Point 7

Looking West

Point 8

Looking North

Point 8

Looking East

Point 8

Looking South

Point 8

Looking West

APPENDIX F

PHOTOGRAPHS

Appendix F
Photographs

F. 1 Representative Photographs of Small Mammal Trapping Grids

Photograph of trapping grid in coastal sage scrub vegetation.

Photograph of trapping grid in grassland vegetation.

Photograph of trapping grid in chaparral vegetation.

Photograph of trapping grid among rocky outcrop.

F. 2 Representative Photographs of Small Mammals Captured

Photograph of *Peromyscus eremicus* (cactus mouse).

Photograph of *Chaetodipus californicus* (California pocket mouse).

Photograph of *Peromyscus californicus* (California mouse).

F. 3 Photographs of Wildlife Camera Locations

Photograph of camera station 1, along main entrance road.

Photograph of camera station 2, along old road heading south from Lake Wohlford Drive.

Photograph of camera station 3 within a meadow near the southeast corner of Bottle Peak.

F. 4 Representative Photographs of Wildlife Tracking Stations

Photograph of wildlife tracking station with one set of fresh coyote tracks.

Photograph of wildlife tracking station with several fresh coyote tracks.

F. 5 Representative Photographs of Wildlife Captured at Camera Stations

Photograph of two coyotes sniffing scent lure at camera station 3.

Photograph of bobcat sniffing scent lure at camera station 1.

Photograph of mule deer buck walking past camera station 2.

Photograph of striped skunk attracted to scent lure at camera station 3.

Photograph of gray fox attracted to scent lure at camera station 1.

F. 6 Representative Photographs of Pitfall Arrays

Photograph of center bucket of pitfall array 1 looking to the south.

Photograph of box funnel trap at pitfall array 1.

Photograph of pitfall array 2 looking to the south.

Photo of location of pitfall array 2 looking to the south after removal.

F.7 Representative Photographs of Reptiles Captured

Photograph of Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*).

Photograph of coast horned lizard (*Phrynosoma blainvillii*).

Photograph of coast patch-nosed snake (*Salvadora hexalepis virgultea*).

Photograph of Coronado Island skink (*Plestiodon skiltonianus interparietalis*).

Photograph of granite night lizard (*Xantusia henshawi*).

F. 8 Representative Photographs of Butterflies Observed

Photograph of mournful duskywing (*Erynnis tristis*).

Photograph of hedgerow hairstreak (*Satyrium saepium*).

Photograph of mountain mahogany hairstreak (*Satyrium tetra*).

Photograph of Behr's metalmark (*Apodemia virgulti*).

Photograph of Bernardino blue (*Euphilotes bernardino*).

Photograph of windscorpion (Family Eremobatidae).