Biological Inventory Report for the City of San Clemente Local Coastal Program Update City of San Clemente, California

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1 INTRODUCTION

The California Coastal Act, enacted in 1976, requires that each coastal community in California develop and adopt a Local Coastal Program (LCP) to serve as the long-term management plan for areas within the community's coastal zone. An LCP consists of: (1) a Land Use Plan (LUP) and (2) an Implementation Plan (IP). The City of San Clemente (City) has never achieved a fully certified LCP. The City prepared a LCP/LUP that was certified by the CCC in May 1988, and was updated in October 1995 to maintain consistency with the City's 1993 General Plan. In 1996, a draft IP was prepared and submitted to CCC for review; however, the IP review process was never completed. To support the LCP update, a biological inventory of the coastal canyons and bluffs was required in order to evaluate their potential to contain coastal resources that meet the definition of environmentally sensitive habitat areas (ESHAs) pursuant to the Coastal Act.

This biological inventory report describes the biological character of the coastal canyons and bluffs (herein referred to as the survey area) in terms of vegetation, flora, wildlife, and wildlife habitats based on reconnaissance-level surveys conducted by Dudek in November 2014. It also includes a discussion of those lands in the survey area that are recommended for exclusion from ESHA, based on lack of resources, as well as areas that potentially meet the definition of ESHA and recommendations for ESHA resource protection.

It is important to note that biological surveys in support of this biological inventory report focused on coastal canyons and bluffs within the larger Biological Inventory Area (BIA) because the status of ESHAs in these areas was questionable and/or largely unknown and thus warranted more intensive field review. Beaches, intertidal zones, and other special-status biological resources beyond the survey area, but within the larger BIA, were evaluated given their value as a coastal resource amenity. All areas within the BIA with the potential to meet the definition of ESHA, including areas outside of the survey area, are shown on the Potential ESHA maps (Figures 4-1a through 4-1d).

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2 PROJECT SETTING

For the purposes of this report, the biological survey area was defined as an approximately 115-acre area focused on the coastal canyons, bluffs, and beaches within the Coastal Zone of the City from a point just north of West Escalones Street to the south end of Calafia Canyon at San Clemente State Beach (Figures 1 and 2). The coastal canyons subject to biological review and field reconnaissance included Palizada, Trafalgar, Toledo, Lobos Marinos, Riviera, Montalvo, and Calafia Canyons. The biological inventory did not include the two Marblehead coastal canyons as it was presumed those features were previously evaluated for biological resources as part of the Marblehead Coastal Project. A large majority of San Clemente (more than 80%) consists of urbanized lands with residential, commercial and/or industrial development with the exception of San Clemente State Beach, several city parks, beaches, and the coastal bluffs and canyons identified above.

The coastal canyons have been largely disturbed by encroaching residential development over the years and as such support varying degrees of disturbed and undisturbed vegetation. These canyons support a high percent cover of non-native, invasive species that have naturalized from adjacent ornamental gardens and backyards and have, in some areas, completely displaced native habitats while in other areas non-native species are competing with native habitats for resources and are compromising the functions and values of the native habitats. Areas associated with San Clemente State Beach are more natural and diversified in terms of native species and wildlife diversity.

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SOURCE; Shaded Relief 2015

FIGURE 1

Regional Map

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Biological Inventory Report for San Clemente LCP

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SOURCE; National Geographic

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FIGURE 2
Vicinity Map

Biological Inventory Report for San Clemente LCP

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3 METHODS

Data regarding biological resources present within the survey area were obtained through a review of pertinent literature and general field reconnaissance; both are described in detail below.

3.1 Literature Review

The following data sources were reviewed to assist with the biological evaluation efforts:

- CDFW California Natural Diversity Database (CNDDB; CDFW 2014a),
- California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2014), and,
- U.S. Fish and Wildlife Service (USFWS) Species Occurrence Data (USFWS 2014).

3.2 Field Reconnaissance

The field survey was performed by Dudek biologists Britney Strittmater and Erin Bergman on November 24, 2014 (Table 1). The biological survey included the mapping of vegetation communities and land covers present within the survey area, an evaluation of potential jurisdictional waters of the United States (U.S.)/State, including wetlands, an evaluation of the potential for special-status plant and wildlife species to occur in the survey area, and the identification of any other coastal resources that may constitute ESHA. As previously mentioned the survey focused on a smaller subset of the larger LCP plan area and concentrated on coastal bluffs, canyons, and adjacent beaches, totaling 115 acres in size.

Table 1
Survey Conditions

Date	Time	Personnel	Survey Conditions
11/24/2014	0825–1640	Britney Strittmater, Erin Bergman	53-72˚ Fahrenheit; 1–3 mph winds; 0-5% cloud cover

3.3 Resource Mapping

The survey was conducted on foot to visually cover the survey area and 200-scale (i.e., 200 feet = 1 inch) aerial photograph maps (Bing Maps 2013) were utilized to map the vegetation communities and record any special-status biological resources directly in the field. Observable biological resources—including perennial plants and conspicuous wildlife (i.e., birds and some reptiles) commonly accepted as regionally special status by the California Native Plant Society (CNPS), CDFW, and USFWS—were recorded on the field map, where applicable. Additionally, an assessment and determination of potential for special-status plant and wildlife species to occur

in the survey area was conducted. The information was recorded onto the field maps (e.g., vegetation communities and plant/animal species locations) was subsequently digitized into a Geographic Information System (GIS) format.

In 2003, the Vegetation Classification and Mapping Program of the California Department of Fish and Wildlife (CDFW), Wildlife and Habitat Data Analysis Branch, published the *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CNDDB) (CDFW 2003 [updated 2011]). In September 2010, the CDFW published the *Natural Communities List* (CDFW 2010), which uses the scientific name of the dominant species in that community as the community name, which is based on the *Manual of California Vegetation, Second Edition* (Sawyer et al. 2009). These classification systems focus on a quantified, hierarchical approach that includes both floristic (plant species) and physiognomic (community structure and form) factors as currently observed (as opposed to predicting climax or successional stages). Nomenclature for on-site vegetation communities reflects the most current system, A Manual of California Vegetation 2 and Natural Communities List. Vegetation communities were mapped based on these sources.

Following completion of the field work, Dudek GIS Specialist Nina Isaieva digitized the mapped findings using ArcGIS.

3.4 Flora and Fauna

Although a detailed inventory of plants was not conducted, those plant species that were considered dominant and/or co-dominant were recorded to evaluate vegetation community classification and to determine ESHA status. The species referenced herein represent a smaller subset of species that actually occur in the survey area.

Wildlife species detected during the field survey by sight, calls, tracks, scat, or other signs were recorded directly onto a field notebook. Binoculars (8.5x42 magnifications) were used to aid in the identification of wildlife. In addition to species actually detected during the surveys, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area.

Latin and common names of animals follow Crother (2008) for reptiles and amphibians, American Ornithologists' Union (AOU 2012) for birds, Wilson and Reeder (2005) for mammals, and North American Butterfly Association (NABA 2001), and San Diego Natural History Museum (SDNHM 2012) for butterflies.

Latin and common names for plant species with a California Rare Plant Rank (CRPR) (formerly CNPS List) follow the California Native Plant Society (CNPS) Online Inventory of

Rare, Threatened, and Endangered Plants of California (CNPS 2015). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2013) and common names follow the USDA NRCS Plants Database (USDA 2013b).

3.5 Wetlands Delineation

A formal delineation of lands subject to regulation by the U.S. Army Corps of Engineers (USACE) acting under Section 404 of the federal Clean Water Act; the Regional Water Quality Control Board (RWQCB) acting under Section 401 of the federal Clean Water Act and the Porter-Cologne Water Quality Control Act; the CDFW acting under Sections 1600–1607 of the California Fish and Game Code; and the California Coastal Commission (CCC) acting under the Coastal Zone Management Act was not conducted in the survey area.

Potential wetlands, riparian areas, and waters of the U.S./State were preliminarily identified in the survey area using the Cowardin method of wetlands classification, which defines wetland boundaries by the presence of at least one parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (USFWS 1979). Wetlands and riparian areas within the survey area were documented by visually assessing and mapping the drip line of hydrophytic vegetation and noting the presence or absence of hydrology indicators (e.g., drift lines, drainage patterns, scour etc.). Soil samples were not taken during the 2014 survey.

3.6 Special-Status Biological Resources

Special-status biological resources are those defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as special status; (3) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; (4) wildlife corridors and habitat linkages; or (5) biological resources that may or may not be considered special status, but are regulated under local, state, and/or federal laws.

Searches through the CNPS online inventory database (CNPS 2015) and CNDDB online inventory were conducted to assist in the determination of special-status plant and animal species potentially present in the survey area (CDFW 2011; CDFW 2014b; CDFW 2014).

3.7 Survey Limitations

While every effort was made to walk 100% of the survey area, access was restricted to public trails/areas, viewpoints, roads, and City-managed parcels. Many of the coastal canyons had

limited access due to private property constraints. In areas with little to no access, vegetation mapping was completed by taking advantage of viewpoints and street vistas, where feasible, coupled with aerial photograph interpretation.

Climatic conditions during the survey generally were favorable for the identification of wildlife. However, potential limitations of the survey include seasonal constraints, a diurnal bias, and the absence of focused trapping for small mammals and reptiles. As the survey was conducted in late fall, special-status plant species that bloom in the spring would not have been detectable. The survey was conducted during the daytime to maximize visibility for the detection of plants and most animals. Birds represent the largest component of the vertebrate fauna, and because they are active in the daytime, diurnal surveys maximize the number of observations of this portion of the fauna. In contrast, daytime surveys usually result in few observations of mammals, many of which may only be active at night. In addition, many species of reptiles and amphibians are secretive in their habits and are difficult to observe using standard meandering transects. Pitfall trapping is the most effective technique for detecting many of these species; however, such trapping was beyond the scope of this project.

4 RESULTS

4.1 Vegetation Communities

Results of the 2014 biological resource inventory indicate that 12 terrestrial (non-marine) natural communities, including disturbed forms, and land cover types occur in the survey area (Table 2). The vegetation communities and land covers are described in detail below and in Table 2 and their spatial distributions are presented on the Biological Resource Maps (Figures 3-1 and 3-2).

Regarding the classification of several communities as disturbed, generally, "disturbed [vegetation]" is an area that has undergone an anthropogenic modification, which has altered a natural vegetation stand. Characteristics of vegetation disturbance are typically a decrease in the percent cover of native plants, a reduction of plant diversity within a particular vegetation strata or layer (i.e., herbaceous, shrub, tree), and an increase in bare ground and non-native invasive plants. Vegetation stands or communities that retain their structure and height (i.e., shrublands) and native plant composition, but have an open canopy, bare ground, and/or invasive plant species within a defined mapping unit, were considered disturbed. Relative percent cover was used as the quantifier in determining classification for most of these stands.

Whereas areas significantly disturbed by anthropogenic means that currently contain either a dominance of "ruderal" (i.e., invasive) non-naïve plant species or a high percent of bare ground and retain remnants of disturbance or continued to be frequently disturbed (i.e., bare ground, maintenance, mowing, etc.), were categorized simply as "disturbed."

Table 2
Vegetation Community and Land Cover Summary

Native Vegetation Communities	Non-Native Land Cover Types
California Sagebrush Scrub	Developed
California Sagebrush-California Buckwheat Scrub	Disturbed
Lemonade Berry Scrub	Ornamental
Quailbush Scrub	Eucalyptus Groves
Giant Wild Rye Grassland	
Arroyo Willow Thickets	
Ephemeral Stream Channel	
Vernal Pool	
Sandy Beach	

4.1.1 Coastal Scrub Communities

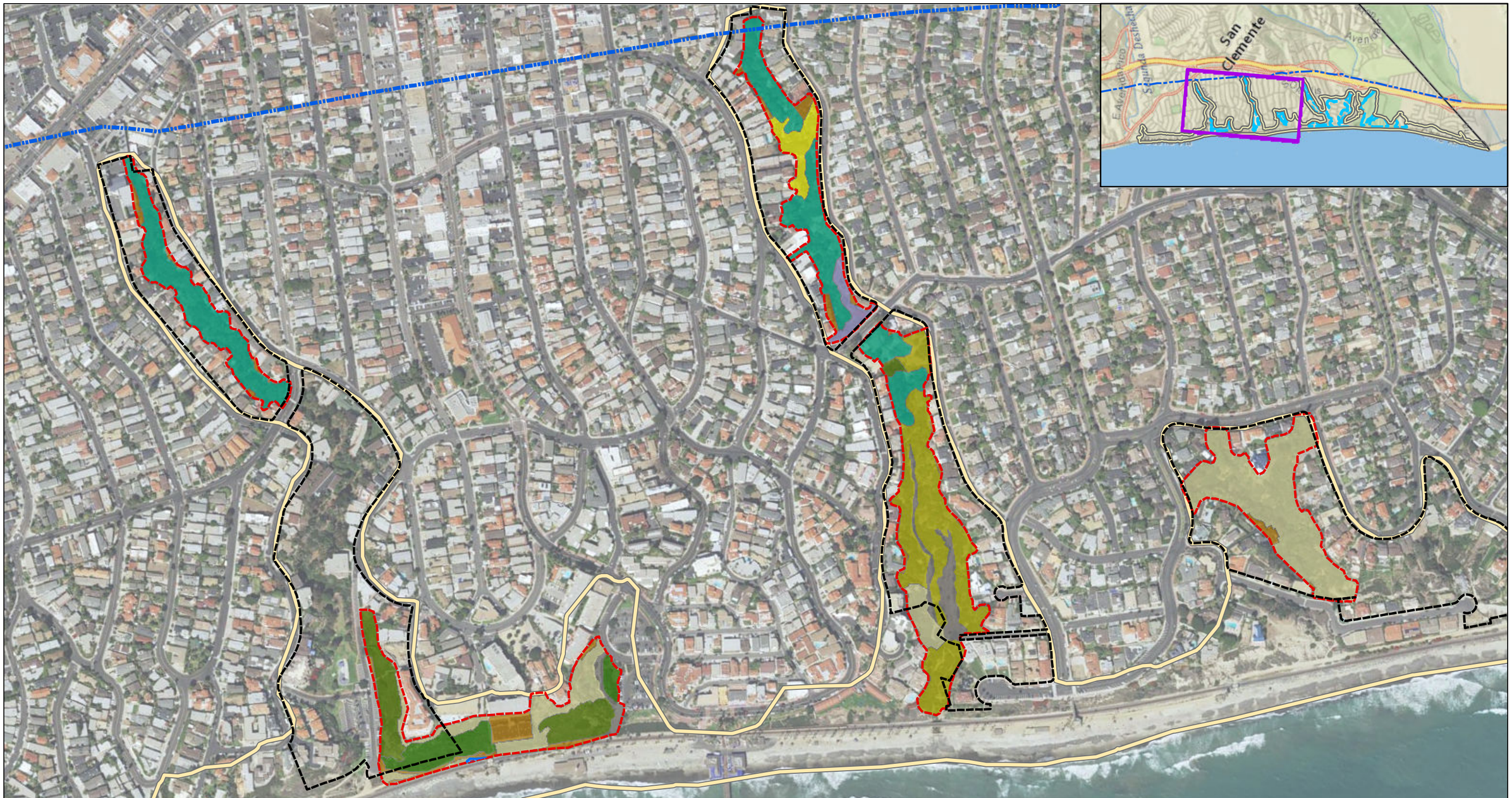
Coastal scrub communities are general habitat types in the more general scrub community physiognomic group. Coastal scrub within the survey area includes four individual vegetation communities: California sagebrush scrub, California sagebrush-California buckwheat scrub, lemonade berry scrub, and quailbush scrub. Each vegetation community in this physiognomic group is described below.

4.1.1.1 California Sagebrush Scrub

California sagebrush scrub contains California sagebrush (*Artemisia californica*) as the sole or dominant shrub species. It has a continuous or intermittent shrub canopy of less than 2 meters (7 feet) in height with a variable ground layer. There are three membership rules for the California sagebrush scrub community: 1) California sagebrush scrub is present where California sagebrush occurs in greater than 60% relative cover in the shrub canopy; 2) California sagebrush scrub is present where California sagebrush is three times the cover of coyote brush and other shrub species; 3) California sagebrush scrub occurs where California sagebrush provides greater than 60% cover in the shrub canopy, although laurel sumac (*Malosa laurina*) or bush monkey flower sometimes occurs in greater than 30% relative cover (Sawyer et al. 2009).

The California sagebrush scrub community often occurs on steep, north-facing slopes and rarely in flooded low-gradient deposits along streams in shallow alluvial or colluvial-derived soils. Soils are alluvial or colluvial derived and shallow (Sawyer et al. 2009). California sagebrush scrub generally grows in areas with a long summer dry season with approximately 35 centimeters (14 inches) of annual precipitation that generally falls between November and April (NatureServe 2009).

California sagebrush scrub occurs along the central and south coast of California, as well as on the Channel Islands. Inland, this community occurs along the base of the Transverse and Peninsular ranges. In San Benito County, California, sagebrush scrub occurs in the central coastal interior mountains (NatureServe 2009). This community occurs between sea level and 1,200 meters (3,937 feet).



SOURCE: NAIP 2014

FIGURE 3-1

Biological Resources - Map 1

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Biological Inventory Report for San Clemente LCP

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SOURCE: NAIP 2014

FIGURE 3-2

Biological Resources - Map 2

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Species typically associated with the California sagebrush scrub include chamise (*Adenostoma fasciculatum*), orange bush monkey flower (*Mimulus aurantiacus*), California brittlebush (*Encelia californica*), goldenhills (*Encelia farinosa*), Eastern Mojave buckwheat (*Eriogonum fasciculatum*), chaparral yucca (*Hesperoyucca whipplei*), Menzies's goldenbush (*Isocoma menziesii* var. *menziesii*), heartleaf keckiella (*Keckiella cordifolia*), coyote brush (*Baccharis pilularis*), common deer weed (*Acmispon glaber*), coastal prickly pear (*Opuntia littoralis*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and poison oak (*Toxicodendron diversilobum*) (Sawyer et al. 2009).

Within the survey area, the California sagebrush scrub community forms an intermittent to open shrub layer. Within the survey area, this community is dominated by coastal sagebrush. Associated species in this community include lemonade sumac (*Rhus integrifolia*), Menzies' goldenbush, and coyote brush.

The California sagebrush scrub community is ranked by the CDFW (2010) as a G5S5 community. This ranking indicates that globally and within California this community is widespread, abundant, and secure (CDFW 2010). However, California sagebrush scrub is the focus of regional conservation planning efforts throughout southern California, it provides essential habitat for rare plant and wildlife species, and as such is considered sensitive by local jurisdictions, including the City.

4.1.1.2 California Sagebrush-California Buckwheat Scrub

California sagebrush scrub-California buckwheat scrub includes coastal sagebrush and Eastern Mojave buckwheat as co-dominant shrubs in the canopy. California sagebrush–California buckwheat scrub has a two-tiered continuous or intermittent shrub canopy with most shrubs less than 2 meters (7 feet) in height while others reach up to 5 meters (16 feet) in height. This community has a seasonally present herbaceous layer (Sawyer et al. 2009).

Species associated with the California sagebrush–California buckwheat scrub community include chamise, orange bush monkey flower, common deer weed, sugar sumac (*Rhus ovata*), and white sage (Sawyer et al. 2009).

Sawyer et al. (2009) reports that this community occurs between 250 meters (820 feet) and 950 meters (3,117 feet) above mean sea level (AMSL) and most often occurs on steep, south-facing slopes with colluvial-derived soils (Sawyer et al. 2009).

Within the survey area, the California sagebrush-California buckwheat scrub community occurs in one patch located in San Clemente State Beach. It is co-dominated by coastal sagebrush and

Eastern Mojave buckwheat. Associated species in this community include lemonade sumac, Menzies' goldenbush, coyotebrush, and fourwing saltbush (*Atriplex canescens*).

The California sagebrush–California buckwheat scrub community is ranked by the CDFW (2010) as a G4S4 community. This ranking indicates that it is apparently secure both globally and within California. However, as a sub-association of California sagebrush scrub, California sagebrush scrub-California buckwheat scrub is the focus of regional conservation planning efforts throughout southern California, it provides essential habitat for rare plant and wildlife species, and as such is considered sensitive by local jurisdictions, including the City.

4.1.1.3 Lemonade Berry Scrub

Lemonade berry scrub is a community recognized by the *Natural Communities List* (CDFW 2010). In the lemonade berry scrub community communities, lemonade berry [=lemonade sumac] is either dominant or co-dominant. Lemonade berry scrub has a two-tiered, open to continuous shrub canopy less than 5 meters (16 feet) in height with an open ground layer and sparse cover of emergent trees (Sawyer et al. 2009).

Species associated with the lemonade berry scrub community include chamise, California brittle bush, chaparral yucca, coastal pricklypear, blue elderberry (*Sambucus nigra* ssp. *caerulea*), coastal sagebrush, orange bush monkeyflower, laurel sumac (*Malosma laurina*), Eastern Mojave buckwheat, and toyon (*Heteromeles arbutifolia*); emergent trees including Southern California black walnut (*Juglans californica*), California live oak (*Quercus agrifolia*), Torrey pine (*Pinus torreyana*), and Peruvian peppertree (*Schinus molle*) may be present at a low percent cover (Sawyer et al. 2009).

Lemonade berry scrub occurs along the southern California coast between 5 and 750 meters (16 and 2,460 feet) amsl (Sawyer et al. 2009). The lemonade berry scrub community occurs on gentle to steep slopes or coastal bluffs that are often north-facing, although aspect can be variable (Sawyer et al. 2009). Soils are typically loams or clays (Sawyer et al. 2009).

In the survey area, the lemonade berry scrub is found along canyon slopes throughout the City, as well as along the coastal bluffs within San Clemente State Beach. In the on-site community along the canyon slopes, lemonade sumac is the dominant species with emergent ornamental species such as bank catclaw (*Acacia redolens*) and Peruvian peppertree. In the on-site community along the coastal bluffs within San Clemente State Beach, associated species include seacliff buckwheat (*Eriogonum parvifolium*), fingertips (*Dudleya edulis*), and coastal sagebrush.

The lemonade berry scrub community is ranked by the CDFG (2010) as a G3S3 community, indicating that this community is rare and vulnerable in the state and globally and is considered high priority for CNDDB inventory (CDFW 2010).

4.1.1.4 Quailbush Scrub

Quailbush scrub is a community recognized by the Natural Communities List (CDFW 2010). Quailbush scrub communities include quailbush (Atriplex lentiformis) as the dominant shrub in the shrub canopy. Quailbush scrub is an open to intermittent community less than 5 meters (16 feet) in height with a variable herbaceous layer (Sawyer et al. 2009).

Some species associated with quailbush scrub include coastal sagebrush (*Artemisia californica*), fourwing saltbush (*Atriplex canescens*), coyotebush (*Baccharis pilularis*), mule-fat (*Baccharis salicifolia*), California brittlebush (*Encelia californica*) laurel sumac (*Malosma laurina*), ngaio tree (Myoporum laetum), arrowweed (*Pluchea sericea*), honey mesquite (*Prosopis glandulosa*), lemonade sumac (*Rhus integrifolia*), woolly seablite (*Suaeda taxifolia*), and tamarisk (*Tamarix* spp.) (Sawyer et al. 2009).

Quailbush scrub occurs throughout much of the southern California's coast as well as within the Central Valley and desert regions. It occurs up to 170 meters (557 feet) AMSL. The quailbush scrub community occurs in a variety of habitats including wetlands, washes, and alkali sinks and flats as well as coastal shrublands and desert washes. This community is also associated with gentle to slope seeps within alkaline or saline clay soils (Sawyer et al. 2009).

In the survey area, quailbush scrub forms an intermittent shrub layer and is found just inland of the shoreline within the survey area. In the on-site community, quailbush is the dominant species. Associated species in this community on site include fourwing saltbush (*Atriplex canescens*), coastal pricklypear (*Opuntia littoralis*), coastal sagebrush, and a low percent cover of sea fig (*Carpobrotus chilensis*).

Quailbush scrub is ranked by the CDFW (2010) as a G4S4 community. This ranking indicates that the community is apparently secure both globally and within California (CDFW 2010). However, as a sub-association of California sagebrush scrub, Quailbush scrub is the focus of regional conservation planning efforts throughout southern California, it provides essential habitat for rare plant and wildlife species, and as such is considered sensitive by local jurisdictions, including the City.

4.1.2 Grass and Herb Dominated Communities

One native grassland-dominated community was observed in the survey area: giant wild rye grassland. The following section describes this natural vegetation community and its distribution in the survey area.

4.1.2.1 Giant Wild Rye Grassland

Giant wild rye grassland is a community recognized by the *Natural Communities List* (CDFW 2010). Giant wild rye grassland includes giant wild rye (*Leymus condensatus [=Elymus condensatus]*) as the dominant or co-dominant herb in the herbaceous layer. Giant wild rye community is an open to intermittent community less than 3 meters (10 feet) in height (Sawyer et al. 2009).

Some species associated with giant wild rye grassland include wild oat (*Avena fatua*), black mustard (*Brassica nigra*), ripgut brome (*Bromus diandrus*), Maltese star-thistle (*Centaurea melitensis*), shortpod mustard (*Hirschfeldia incana*) and cliff desert dandelion (*Malacothrix saxatilis*); with a low cover of emergent trees including Southern California black walnut (*Juglans californica*), California live oak (*Quercus agrifolia*) or shrubs such as coastal sagebrush (*Artemisia californica*), mule-fat (Baccharis salicifolia), and San Luis purple sage (*Salvia leucophylla*) (Sawyer et al. 2009).

Giant wild rye grassland occurs sporadically throughout central and southern coastal California. It occurs up to 1,500 meters (4,921 feet) AMSL. The giant wild rye grassland community occurs along steep slopes often on north facing slopes at low elevations. This community is also associated with loam soils (Sawyer et al. 2009).

On site, the giant wild rye grassland community occurs in one patch north of South Ola Vista Road. In the on-site community, giant wild rye is the dominant herbaceous species. Associated species in this community on site include a low cover of ornamental species from nearby urban landscaping including bougainvillea (*Bougainvillea peruviana*) and bank catclaw (*Acacia redolens*).

The giant wild rye grassland community is ranked by the CDFW (2010) as a G3S3 community. This ranking indicates that the community is rare and vulnerable to extirpation or extinction both globally and is considered high priority for CNDDB inventory (CDFW 2010).

4.1.3 Broad-Leafed Upland Tree Dominated Communities

There is one vegetation community in the broad-leafed upland tree dominated communities physiognomic group in the survey area – eucalyptus groves. The following section describes the eucalyptus groves documented in the survey area.

4.1.3.1 Eucalyptus Groves

Eucalyptus groves or *Eucalyptus (camaldulensis, globulus)* is a community recognized by the *Natural Communities List* (CDFW 2010). Eucalyptus groves are a distinct "naturalized" vegetation type that is considered a non-native woodland habitat. It typically consists of monotypic stands of introduced Australian eucalyptus trees (*Eucalyptus* spp.). The understory is either depauperate or absent owing to shade and the possible allelopathic (toxic) properties of the eucalyptus leaf litter. Eucalyptus groves are fairly widespread in southern California. Although eucalyptus groves are of limited value to most native plants and animals, this community frequently provides nesting and perching sites for several raptor species as well as provides roost sites for overwintering monarch (*Danaus plexippus*) butterflies.

Within the survey area, eucalyptus groves comprised of red gum eucalyptus and redbox (*Eucalyptus polyanthemos*) were mapped on the grounds of San Clemente State Beach at the far end of the survey area as well as along the slopes and canyon bottoms of Palizada, Trafalgar, Lobos Marinos, and Montalvo Canyons. As of November 2014, a eucalyptus grove just outside of the survey area along Avenida del Presidente supported an overwintering population of monarch butterflies with a record estimated 240 roosting butterflies (The Monarch Program 2014).

Eucalyptus groves are not considered high priority for inventory by the CDFW (2010). Because they are dominated by a noxious non-native species that supports little to no natural ecological processes, eucalyptus groves are not often considered sensitive by local, state, and federal organizations. Throughout most of the survey area, eucalyptus groves are not considered sensitive with the exception of those areas in and around Calafia Canyon where aggregating monarch butterflies may roost.

4.1.4 Developed and Disturbed Lands

4.1.4.1 Developed Land

Developed land within the survey area refers to areas that have been constructed upon or disturbed so severely that native vegetation is no longer supported (Holland 1986). Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Holland 1986). Developed areas are generally graded and compacted, sometimes covered with gravel road base or built, and have little to no vegetation present.

Developed land refers to those areas within the survey area supporting manmade structures or features including paved/compacted roadways, sidewalks, parking lots/structures, ornamental landscaping, public use trails, and infrastructure associated with campground and public beach

facilities. These areas support limited natural ecological processes, native vegetation, and/or habitat for wildlife species and thus are not considered sensitive by local, state, and/or federal agencies.

4.1.4.2 Disturbed Habitat

Disturbed habitat is not a land cover that is recognized by the *Natural Communities List* (CDFW 2010) because it is not a naturally occurring vegetation community. It is a land cover characterization that experiences or has experienced high levels of human disturbance. Areas mapped as disturbed land may include dirt roads and bare, graded areas. Vegetation in these areas, if present at all, is usually sparse and dominated by weedy herbaceous species. Disturbed habitat occurs across a wide range of elevations, topographic orientations, and soil types. Disturbed habitat is not considered high priority for inventory, and it would not be considered a sensitive natural community in the City's LCP since it is not a naturally occurring community.

4.1.4.3 Ornamental

Ornamental is not a land cover that is recognized by the *Natural Communities List* (CDFW 2010) because this community is not a naturally occurring community in California. It is a land cover characterization supported by areas where ornamental landscaping has been installed.

None of the ornamental areas mapped in the survey area are considered high priority for inventory, and they do not occur naturally or contain native vegetation. Therefore, areas mapped as ornamental are not considered sensitive natural communities per the City's LCP.

4.2 Waters of the United States/State, including Wetlands

Wetlands are transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is often covered by shallow water during some parts of the year. Wetlands can be categorized according to specific habitats and vegetation types. In Southern California, wetlands generally fall into four categories: estuarine wetlands; freshwater marshes; riparian wetlands, which occur along creeks and streams or bodies of water; and vernal pools.

Southern California coastal wetlands and watersheds have been dramatically altered or destroyed by human activities over the past 150 years. Wetlands have been filled and rivers, streams, and creeks have been rerouted, dammed, channelized, and paved. Estimates of historic wetland acreages compiled from the literature and U.S. Coast and Geodetic Survey maps created between 1851 and 1893 indicate a loss of 70% reduction in coastal wetlands in southern California. Wetlands provided a suite of functions and values including, but not limited to, groundwater recharge, nutrient retention and transformation, sediment and toxicant trapping, public recreation, wildlife and fisheries habitat, and flood storage and flood flow modification.

The Coastal Act requires the protection of wetlands. Development or alteration of coastal wetlands is primarily regulated by Section 30233 of the Coastal Act, which provides that the diking, filling, or dredging of open coastal waters, wetlands, or estuaries may only be permitted where there is no less environmentally damaging alternative and must be restricted to a narrow range of allowable uses. The Coastal Act also requires the protection of biological productivity and quality of coastal waters, streams, wetlands, estuaries, and lakes.

Two federal statutes provide the primary regulatory authority over wetlands. Section 404 of the federal Clean Water Act regulates the disposal of dredge and/or fill materials into waters of the United States, including wetlands and all streams to their headwaters, lakes over 10 acres, and contiguous wetlands, including those above the ordinary high water mark in non-tidal waters and mean high tide in tidal waters. Section 10 of the River and Harbors Act of 1899 regulates the diking, filling, and placement of structures in navigable waterways. The USACE is primarily responsible for the implementation and enforcement of rules and regulations pertaining to both sections of these statutes.

Within the survey area, one riparian wetland, one potential vernal pool, and several ephemeral streams were documented all of which would be considered potential waters of the U.S./State and warrant further field review to determine the full extent of distribution and regulatory authority. A more detailed description of these resources is provided below.

4.2.1 Arroyo Willow Thickets

Arroyo willow thickets refer to areas where arroyo willow (*Salix lasiolepis*) is a dominant or co-dominant shrub or tree in the canopy. Arroyo willow thickets have an open to continuous canopy less than 10 meters (33 feet) in height with a variable herbaceous ground layer. Arroyo willow thickets occur along stream banks and benches, on slope seeps, and on stringers along drainages in areas up to 2,170 meters (7,119 feet) amsl (Sawyer et al. 2009).

Some species often associated with the arroyo willow thickets community include big leaf maple (*Acer macrophyllum*), coyote brush, mulefat (*Baccharis salicifolia*), common buttonbush (*Cephalanthus occidentalis*), American dogwood (*Cornus sericea*), wax myrtle (*Morella californica*), California sycamore (*Platanus racemosa*), black cottonwood (*Populus trichocarpa*), Fremont cottonwood (*Populus fremontii*), willows (*Salix* spp.), and blue elderberry (Sawyer et al. 2009).

In the survey area, one patch of arroyo willow thickets was observed in the bottom of Calafia Canyon. A second smaller stand was observed at the far east end of the survey area near Vista Blanca. In the on-site community, arroyo willow is the dominant species. Associated understory

species include coastal sagebrush (*Artemisia californica*) and lemonade sunac (*Rhus integrifolia*). Disturbed forms of arroyo willow thickets community on-site contained a higher percent cover of bare ground and non-native species including Washington fan palm (*Washingtonia robusta*).

Although CDFW reports arroyo willow thickets as a G4S4 community, meaning it's apparently secure both globally and within California (CDFW 2010), arroyo willow thickets are often considered wetland waters of the U.S./State and as such are afforded protection and regulation under Sections 401 and 404 of the federal Clean Water, the state Porter-Cologne Water Quality Control Act; Sections 1600-1605 of the California Fish and Game Code; and the Coastal Zone Management Act.

4.2.2 Ephemeral Stream Channel

Ephemeral stream channel typically refers to non-wetland hillside drainages that are not inundated or saturated for extended periods of time and generally have surface flow for a very short period of time (24 hours or less) following a significant rain event. Due to the lack of prolonged surface flow, wetlands vegetation is often lacking. Potential ephemeral stream channels were noted at within portions of Lobos Marinos, Riviera, Montalvo and Calafia Canyons as well as at the far east end of the survey area near Vista Blanca (Figures 3-1 and 3-2). While not included in the *Natural Communities List* (CDFW 2010), ephemeral stream channels are often considered waters of the U.S./State and as such are afforded protection and regulation under Sections 401 and 404 of the federal Clean Water, the state Porter-Cologne Water Quality Control Act; Sections 1600-1605 of the California Fish and Game Code; and the Coastal Zone Management Act.

4.2.3 Vernal Pool

A vernal pool, disturbed in nature, was documented on a flat terrace near the edge of a coastal bluff at the far north end of the survey area near Palizada Canyon (Figure 3-1). Vernal pools are seasonal depressional wetlands that occur under the Mediterranean climate conditions of the California coast and in glaciated areas of northeastern and mid-western states. They are covered by shallow water for variable periods of time from winter to spring, but may be completely dry for most of the summer and fall (EPA 2015). These wetlands range in size from small puddles to shallow lakes and are usually found in a gently sloping plain of grassland. Western vernal pools are sometimes connected to each other by small drainages known as vernal swales, forming complexes. Vernal pools provide habitat for a number of rare plants and animal such as the federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) and they're

highly susceptiable to disturbance and degradation. More than 90% of California's vernal pools have been extirpated due to development.

Vernal pools are considered rare and valuable seasonal wetland resources by local, state and federal agencies and organizations and as would be potentially regulated by Sections 401 and 404 of the federal Clean Water, the state Porter-Cologne Water Quality Control Act; and the Coastal Zone Management Act.

4.3 Beaches

4.3.1 Sandy Beach

Sandy beach refers to the sandy and/or cobbly habitats that line coastal strands, lagoons, lakes, or oceans (County of Orange 1992). Beaches form from wave action, disturbance, and geologic processes. Most beaches are unvegetated, but may support sparse herbaceous species. Within the survey area, sandy beach refers to the sandy, unvegetated shoreline of the Pacific Ocean bordering the coastal canyons and bluffs. While not included in the *Natural Communities List* (CDFW 2010), sandy beach is often considered a waters of the U.S./State and as such is afforded protection and regulation under Sections 401 and 404 of the federal Clean Water, Section 10 of the Rivers and Harbors Act, the state Porter-Cologne Water Quality Control Act; Sections 1600-1605 of the California Fish and Game Code; and the Coastal Zone Management Act. Beaches are also regulated by the Coastal Act as important coastal resources and public amenities and as such are afforded protection and regulation by local, state, and federal jurisdictions.

4.4 Wetlands Delineation

Although a formal delineation of waters of the U.S./State, including wetlands, was not conducted in the survey area, potential aquatic resources regulated by the federal Clean Water Act, Porter-Cologne Water Quality Control Act, the California Fish and Game Code, and the Coastal Zone Management Act were anecdotally noted through observations of hydrology and hydrophytic vegetation. There were several locations in the survey area where non-wetland ephemeral stream channels were observed (see Figures 3-1 and 3-2). Due to limited access to several of the coastal canyons, the presence/absence of aquatic resources, including ephemeral stream channels, could not be 100% confirmed. In the event that development proposals are submitted for projects affecting the coastal canyons, a formal wetland delineation is recommended to determine the presence/absence of waters of the U.S. and State, including wetlands.

4.5 Plants and Animals

A number of plant and wildlife species were observed during the site visit representing a mix of urban-adapted species with those that are more common on coastal bluffs and more natural pristine habitats. The diversity of plant and wildlife species was generally low due to the extent of existing urban development.

4.6 Special-Status Biological Resources

No federally or state-listed species or other special-status species were observed during the survey. A search of CNPS and CNDDB records was utilized to develop matrices of special-status plant and wildlife species that may have potential to occur in the survey area due to the presence of suitable habitat (taking into consideration vegetation communities, soils, elevation, and geographic range, life form/blooming period, etc.). These two matrices of special-status plant and wildlife species (i.e., federally, state, or locally listed species), their favorable habitat conditions, and their potential to occur on site based on the findings of the field investigations are presented in Appendices A and B, respectively.

None of the plant species presented in Appendix A were detected during the field survey; however, there are a number of special-status plant species that have a moderate to high potential to occur in the survey area based on the presence of suitable habitat and substrate, known habitat preferences, and recorded occurrences in the area including, but not limited to, the federally endangered San Diego button celery (*Eryngium aristulatum* var. *parishii*), the federally threatened spreading navarettia (*Navarretia fossalis*), and south coast saltscale (*Atriplex pacifica*), a California Rare Plant Rank (CRPR) 1B.2 species.

None of the wildlife species presented in Appendix B were detected during the field survey with the exception of monarch butterfly, which was seen in flight near San Clemente State Beach. While the monarch butterfly is not listed as a federally or state-listed threatened, endangered, or proposed species, the annual monarch migration is considered a “threatened phenomenon” by the International Union for Conservation of Nature and Natural Resources (IUCN). Steps have been taken by both the United States and Mexican governments, along with numerous private individuals and organizations, to protect the overwintering sites of these butterflies. There are over 300 documented overwintering sites from Baja California to north of San Francisco, in Sonoma County (California Monarch Studies, Inc. 1997). Unfortunately, observations of annual counts at these documented sites indicate an alarming decline in overwintering monarchs by almost 90% (IELP 2012). At many sites where monarchs once roosted these sites have all but been abandoned by overwintering monarchs.

Along the California coastline, monarch butterflies form colonies in dense, wooded areas most often dominated by eucalyptus trees, Monterey pines, and Monterey cypresses with relatively closed canopies to provide protection from temperature extremes, predation, and strong winds. The formation of monarch aggregations and their persistence is a dynamic process that can vary year to year. Generally, sites that support larger aggregations tend to form more predictably (i.e., higher fidelity) year after year and routinely persist beyond the winter solstice (i.e., more permanence) than sites that support smaller aggregations (Arnold 2003). Several factors are known to influence these dynamics, including changes in site quality, variation in local seasonal weather conditions, and cyclic variation in the overall abundance of monarchs from year to year (Tuskes and Brower 1978; Arnold 2003).

Overwintering sites are usually characterized by groves of trees of mixed height and diameter, with an understory of brush and sapling trees (Arnold 2003). Often there is a small clearing within a stand of trees, or formed by a combination of the trees and surrounding topography, to provide shelter for the butterfly. These overwintering sites protect the butterfly from prevailing on-shore winds and freezing temperatures, plus exposure to the sun. The vegetation serves as a thermal "blanket" which moderates extreme weather conditions (Calvert and Brower 1982; Arnold 2003).

While not regulated by state or federal agencies, overwintering habitat for this species is growing more and more protected by local agencies. Although the monarch butterfly is not threatened with extinction, its overwintering sites are vulnerable to disturbance and thus are targeted for protection through local resource ordinances and management.

In addition to the monarch there are a number of special-status species that have a high potential to occur in the survey area due to the presence of suitable habitat and recorded occurrences of these species in the area including, but not limited to, the state endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), the federally threatened coastal California gnatcatcher (*Polioptila californica californica*), the state and federally endangered California least tern (*Sternula antillarum browni*); and the federally endangered Stephens' kangaroo rat (*Dipodomys stephensi*).

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5 COASTAL RESOURCE PROTECTION

One of the primary objectives of the Coastal Act is the preservation, protection, and enhancement of coastal resources, including marine, aquatic, and terrestrial habitats. At Section 30240 of the Public Resources Code, the Coastal Act requires the protection of ESHAs against any significant disruption of habitat values. Generally, development is not allowed in any ESHA and adjacent development must be sited to avoid impacts that would degrade the quality of ESHA. In addition, creeks and associated riparian habitat are protected to maintain their biological productivity and quality of coastal waters. The Coastal Act requires that alteration of creeks and waterways be minimized and narrowly limits the purposes for which alterations may be considered.

The following Coastal Act policies are relevant to San Clemente for the preservation and management of biological resources in the coastal zone.

30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

5.1 Designation of Environmentally Sensitive Habitat Areas

Section 30107.5 of the Coastal Act defines “environmentally sensitive habitat areas” as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by

human activities and developments." As previously stated, Section 30240 of the Coastal Act requires that ESHAs be protected against any significant disruption of habitat values. Only uses dependent on those resources are allowed within ESHAs and adjacent development must be sited and designed to prevent impacts that would significantly degrade the ESHA and must be compatible with the continuance of the ESHA.

The Coastal Act criteria for determining whether an area qualifies as an ESHA are based upon ecological importance, including the rarity or function of the habitat, and the habitat's sensitivity. Rarity relates to either the natural limited occurrence of the habitat in the region or of the diminishment of what was an extensive habitat due to cumulative losses. Function relates to the importance of the habitat to the ecosystem, such as functioning as a migration corridor for wildlife. Sensitivity relates to the habitats tolerance to disturbance or degradation.

The CDFW "List of California Terrestrial Natural Communities" recognized by the CNDDB provides an inventory of California's natural communities and identifies those that are considered rare because of their highly limited distribution. These rare communities may or may not contain individual species that are rare, threatened, or endangered.

The following areas shall be considered ESHA in accordance with Section 30107.5 of the Coastal Act throughout San Clemente, unless there is compelling site-specific evidence to the contrary:

- Any area that includes habitat for species and plant communities recognized as threatened or endangered by the state or federal governments; plant communities recognized by the State of California (in the Terrestrial Natural Communities Inventory) as restricted in distribution and very threatened; and those habitat types of limited distribution recognized to be of particular habitat value, including wetlands, riparian vegetation, eucalyptus groves associated with monarch butterfly roosts, and native grasslands.
- Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and that could be easily disturbed or degraded by human activities and developments.
- Areas that contribute to the viability of plant species for which there is compelling evidence of rarity, for example, those species with a CRPR of 1B (rare or endangered in California and elsewhere) or 2 (rare, threatened, or endangered in California but more common elsewhere) as defined by the CNPS.

Potential ESHAs in San Clemente are generally shown on Figures 4-1a through 4-1d. In the survey area, ESHAs generally include, but are not limited to, the following:

a. Creek and riparian areas.

b. Wetlands, such as vernal pools and emergent wetlands.

c. Coastal bluffs/coastal bluff scrub.

d. Shoreline habitat areas.

e. Marine habitats.

f. California sagebrush scrub, chaparral, and associated alliances.

g. Native grassland.

h. Monarch butterfly aggregation sites, including autumnal and winter roost sites and related habitat areas.

A more detailed description of the potential ESHAs summarized above and illustrated on Figures 4-1a through 4-1d is provided below.

5.1.1 Vegetation Communities

Several of the vegetation communities that occur in the survey area are designated rare by the CDFW and/or local jurisdictions and are easily disturbed or degraded by human activity. Therefore, site specific surveys will be required to determine if these potential ESHA meet the definition of ESHA under the Coastal Act. These include California sagebrush scrub, California sagebrush-California buckwheat scrub, lemonade berry scrub, and quailbush scrub, including disturbed forms of these communities. A more detailed discussion of these vegetation communities and their importance in terms of an ESHA resource is described in more detail below.

5.1.1.1 Coastal Scrub Communities

California sagebrush scrub, California sagebrush-California buckwheat scrub, lemonade berry scrub, and quailbush scrub are all considered coastal scrub communities. Of these four vegetation communities, only lemonade berry scrub is considered vulnerable to extirpation and degradation by CDFW (2010) and thus is considered a rare vegetation community. Although California sagebrush scrub and its sub-associations (i.e., California sagebrush-California buckwheat scrub, and quailbush scrub) have suffered enormous losses in California (estimates are as high as 85% for California sagebrush scrub and associated communities), there are still thousands of acres in existence and this community type is no longer listed as rare by CDFW. Nevertheless, coastal scrub communities have the potential to support a number of rare species such as the coastal California gnatcatcher, a federally threatened species, and any Coastal Sage Scrub occupied by the Coastal California gnatcatcher or other rare species will qualify as ESHA because of the especially valuable role it plays in the ecosystem. Coastal scrub communities can

also be importanttransitional or "edge" habitats adjacent to coastal bluffs, wetlands/riparian areas, and the Pacific Ocean, providing important functions such as supporting pollinators for wetland plants and essential habitat for edge-dependent animals like several species of butterflies that nectar on upland plants but whose caterpillars require wetland vegetation.

5.1.1.2 Grass and Herb Dominated Communities

Native grassland communities are imperiled with conservative estimates placing the loss of California's native Mediterranean grasslands at more than 90%. Native grasslands are continuing to disappear at an alarming rate, often displaced by non-native annual grasses and forbs caused by human-induced disturbances (CNPS 2008). Giant wild rye grassland is considered a CDFW high priority community because it is vulnerable to extirpation due to human-induced disturbances. Native grassland communities, because of their rarity and vulnerability, generally warrant designation as ESHA even when only present in very small patches.

5.1.1.3 Broad-Leafed Upland Tree Dominated Communities

Although eucalyptus groves typically provide very little habitat value, lands supporting groves of eucalyptus trees along and within Calafia Canyon on the grounds of San Clemente State Beach meet the definition of ESHA as monarch butterfly roosting habitat. As early as 2011 overwintering monarch butterflies began roosting in eucalyptus trees just outside of the survey area near a parking lot associated with the San Clemente State Beach campground near Avenida del Presidente (The Monarch Program 2014). Although monarch butterflies are not threatened with extinction, their autumnal and winter aggregation sites, or roosts, are especially vulnerable to disturbance. Sites that provide the key elements essential for successful monarch butterfly aggregation areas and/or are locations where monarchs have been historically present shall be considered ESHAs. These elements include stands of eucalyptus or other suitable trees that offer shelter from strong winds and storms, provide a microclimate with adequate sunlight, are situated near a source of water or moisture, and that provide a source of nectar to nourish the butterflies.

Areas supporting eucalyptus groves in the survey area in proximity to the mapped roost site have the potential to provide overwintering opportunities to monarch butterflies. Therefore, those eucalyptus groves supporting roosting monarch butterflies along and within Calafia Canyon meet the definition of ESHA because of the important role they play in providing roost habitat for monarch butterflies.

San Clemente Coastal Zone Boundary
Coastal Canyon Parcel Outline
Reefs
Potential Ephemeral Stream Channel
Potential Vernal Pool
Potential Sensitive Habitat
Potential Monarch Roost Site

Vegetation Community and Land Cover

Lemonade Berry Scrub
disturbed Lemonade Berry Scrub
Quailbush Scrub
disturbed Quailbush Scrub
Disturbed Habitat
Eucalyptus groves
Giant Wild Rye Grassland
Parks and ornamental plantings
Urban/Developed

0 250 500 Feet

Path: Z:\Projects\8329\00\MAPDOC\BioInventoryReport\Figure_4 Potential ESHA Resources.mxd

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SOURCE: Google Earth Maps 2015

FIGURE 4-1a

Potential Sensitive Habitat Areas - Map a

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San Clemente Coastal Zone Boundary
Coastal Canyon Parcel Outline
Reefs
San Mateo Rocks
Potential Ephemeral Stream Channel

Potential Sensitive Habitat
Potential Monarch Roost Site

Vegetation Community and Land Cover

disturbed Arroyo Willow Thickets
Lemonade Berry Scrub
disturbed Lemonade Berry Scrub
Quailbush Scrub
disturbed Quailbush Scrub

Disturbed Habitat
California Sagebrush
California sagebrush-California buckwheat
Eucalyptus groves
Giant Wild Rye Grassland
Parks and ornamental plantings
Sandy Beach
Urban/Developed

0 250 500 Feet

SOURCE: Google Earth Maps 2015

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FIGURE 4-1b

Potential Sensitive Habitat Areas - Map b

Biological Inventory Report for San Clemente LCP

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San Clemente City Boundary
San Clemente Coastal Zone Boundary
Coastal Canyon Parcel Outline
Reefs
Potential Ephemeral Stream Channel

Potential Sensitive Habitat
Potential Monarch Roost Site

Vegetation Community and Land Cover

disturbed Arroyo Willow Thickets
Lemonade Berry Scrub
disturbed Lemonade Berry Scrub
Quailbush Scrub

Disturbed Habitat
California Sagebrush
California sagebrush-California buckwheat
Eucalyptus groves
Parks and ornamental plantings
Sandy Beach
Urban/Developed

0 250 500 Feet

SOURCE: Google Earth Maps 2015

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FIGURE 4-1c

Potential Sensitive Habitat Areas - Map c

Biological Inventory Report for San Clemente LCP

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San Clemente City Boundary
Reefs
Potential Sensitive Habitat
Potential Monarch Roost Site

0 250 500 Feet

SOURCE: Google Earth Maps 2015

FIGURE 4-1d

Potential Sensitive Habitat Areas - Map d

Biological Inventory Report for San Clemente LCP

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The areas of mapped eucalyptus groves within the coastal canyons north of Calafia Canyon do not meet the definition of ESHA despite supporting mixed stands of eucalyptus trees for the following reasons. One, unlike the mapped overwintering site just outside of the survey area near Calafia Canyon, which supports more open and naturally vegetated habitats associated with San Clemente State Beach, the eucalyptus groves in the remaining coastal canyons to the north are much more urbanized and developed, resulting in extensively disturbed and fragmented patches of eucalyptus trees bound by residential homes and ornamental landscaping. The existing habitats in these areas already exist in a disturbed and degraded condition as a result of past and present human activities and development. The stands of eucalyptus trees in these canyons support an understory of ornamental groundcover with very few clearings, the patch size is fairly limited, and unlike the mapped overwintering site off of Avenida del Presidente, the remaining eucalyptus groves are isolated from larger intact areas of native vegetation. Further, the remaining canyons north of Calafia Canyon are indirectly affected by human presence primarily due to the close proximity of the trees to existing homes. The extent of existing disturbance and the close proximity of these groves to adjacent, existing homes would not change. Thus, the remaining eucalyptus groves in the survey area do not constitute ESHA.

5.1.1.4 Developed and Disturbed Lands

Remaining land covers in the survey area are comprised of man-made and/or extensively disturbed lands that support very little to no native vegetation including developed, disturbed, and ornamental lands. These lands were artificially created by man to support urbanization and thus have little to no biological resource value. Developed, ornamental, and disturbed lands do not contribute to the viability of rare plant and wildlife species nor do they constitute habitat that is rare or especially valuable from a local, regional, or statewide basis. Thus, developed, disturbed, and ornamental lands do not meet the definition of ESHA.

5.1.2 Waters of the United States/State, including Wetlands

Small patches of arroyo willow thickets, several ephemeral stream channels, and a potential disturbed vernal pool were observed in the survey area. Pending their status as riparian wetlands and potential waters of the U.S./State subject to regulation by the USACE, RWQCB, CDFW, and CCC, these resources could meet the definition of ESHA.

Although not all riparian habitat types are rare throughout the state, in southern California over 90% of the original riparian habitats had been lost to development by 1989. Consequently, all remaining native riparian habitats in southern California are considered sensitive and in the Coastal zone qualify as ESHA because of their rarity and the role riparian areas often play in the

ecosystem. For example, many species of birds nest and roost in riparian habitat but forage in adjacent California sagebrush scrub and chaparral habitats.

Similarly, ephemeral stream channels provide the same ecological and hydrological functions as perennial streams by moving water, nutrients, and sediment throughout the watershed and comprise a large portion of the watersheds in our region (EPA 2008). Ephemeral streams are the defining characteristic of many watersheds in dry, arid and semi-arid regions, and serve a critical role in the protection and maintenance of water resources, human health, and the environment. When functioning properly, ephemeral streams provide landscape hydrologic connections; stream energy dissipation during high-water flows to reduce erosion and improve water quality; surface and subsurface water storage and exchange; ground-water recharge and discharge; sediment transport, storage, and deposition to aid in floodplain maintenance and development; nutrient storage and cycling; wildlife habitat and migration corridors; support for vegetation communities to help stabilize stream banks and provide wildlife services; and water supply and water-quality filtering (EPA 2008). They provide a wide array of ecological functions including forage, cover, nesting, and movement corridors for wildlife. Within the survey area, ephemeral stream channels likely collect, treat pollutants through toxicant trapping and nutrient retention, and convey runoff from adjacent urbanized development to the Pacific Ocean.

A potential vernal pool, disturbed in nature, was documented on a flat terrace near the edge of a coastal bluff at the far north end of the survey area near Palizada Canyon (Figure 3-1). Vernal pools, an especially rare wetland habitat in southern California, shall be preserved and protected throughout California. As previously mentioned, vernal pools provide habitat for a number of rare plants and animal such as the federally endangered San Diego fairy shrimp and they're highly susceptible to disturbance and degradation. Because vernal pools play an important role in the ecosystem by providing habitat to rare plants and animals and because they're vulnerable to extirpation, all vernal pools in San Clemente are considered ESHA.

5.1.3 Beaches

Sandy beach habitats are protected by not only the federal Clean Water Act and River and Harbors Act but by Section 30230 of the Coastal Act, which requires that marine resources be maintained, enhanced, and, where feasible, restored. Protection of marine habitats is required not only for their biological significance, but also for their commercial, recreational, scientific, and educational value. Within the survey area, sandy beaches can provide nesting and foraging opportunities for a number of special-status wildlife species including, but not limited to, California least tern, which has been recorded in the vicinity of the survey area.

5.2 Site-Specific Studies and Unmapped ESHAs

Areas within San Clemente that are dominated by one of the habitats discussed above will require site specific studies to determine if ESHA exists, evaluate potential impacts, and determine appropriate setbacks. Factors that should be considered when making site-specific ESHA assessments include:

Patch size and connectivity. Very small patches of habitat that are effectively isolated from other natural areas may lose many of their natural ecological functions. Functional patch size is dependent upon both the ecological needs of the species of importance supported by the habitat and the spatial scale of the habitat. For example, what is isolated for a small mammal may not be for a bird and what is small for a coyote may not be for some insects.

Dominance by invasive, non-native species. Non-native species often provide poorer habitat for wildlife than native vegetation and proliferation of exotic plant species alters ecosystem processes and may threaten certain native species with extirpation. However, there are probably no habitats in southern California that have not been invaded by exotic species, and the remaining stands of native grassland are almost always dominated by nonnative annual species. Only where exotic species are so overwhelmingly dominant that the native community can no longer perform its functions in the ecosystem should the presence of exotic species rebut the presumption of ESHA.

Disturbance and proximity to development. Disturbance is the negative effect of human activities such as dumping, vegetation removal, development, pollution, etc. Habitat areas bordering development may be subject to impacts from negative edge effects, such as lighting, non-native invasive plant species, domestic animals, and human activity. The negative effects of disturbance are strongest immediately adjacent to development and decline with distance from the edge. However, where very small patches of habitat are effectively surrounded by development, these impacts may be severe. In general, disturbance by itself is not enough to rebut the finding of ESHA. Disturbance that is clearly reversible (e.g., presence of trash or illegal dumping) is not determinative.

Fragmentation and isolation. Where there are large areas of more-or-less continuous development, native communities may be reduced to small islands of habitat that are distant from other natural habitats. This fragmentation and isolation can create barriers to migration, reduce wildlife food and water resources and generally compress territory size to reduce existing wildlife populations to non-viability. The smaller a particular habitat patch is, the greater the proportion of its area that experiences negative edge effects. Where the habitats discussed above occur in the City of San Clemente the presumption is that they are ESHA and the burden of proof

is on the property owner or project proponent to demonstrate that that presumption is rebutted by site-specific evidence. However, if quantitative data gathered by a qualified biologist demonstrates that a habitat area is degraded beyond the point of restoration, or that it is not rare and is so small and isolated that it no longer has habitat value or a special nature or role in the ecosystem, the habitat area does not meet the statutory definition of ESHA contained in Section 30107.5 of the Coastal Act. Therefore, such habitat areas do not warrant the special land use and development restrictions established for ESHA in the City's LCP.

Where the habitats discussed above occur in San Clemente the presumption is that they are ESHA and the burden of proof is on the property owner or project proponent to rebut the presumption through site-specific evidence. However, if quantitative data gathered by a qualified biologist demonstrates that a habitat area is degraded beyond the point of restoration, or that it is not rare and is so small and isolated that it no longer has habitat value or a special nature or role in the ecosystem, the habitat area does not meet the statutory definition of ESHA contained in Section 30107.5 of the Coastal Act. Therefore, such habitats do not warrant the special land use and development restrictions established for ESHA in the City's LCP. Further, any area not designated on the Potential ESHA map in Figures 4-1a through 4-1d that meets the ESHA criteria shall be granted the same protections as if the area was shown on the map. Proposals for development on sites where Potential ESHAs are shown on the map or where there is probable cause to believe that ESHAs may exist shall be required to provide the City with a site-specific biological study that includes the following information:

a. A base map that delineates topographic lines, parcel boundaries, and adjacent roads.
b. A vegetation map that identifies species that may be indicators of ESHAs.
c. A soils map that delineates hydric and non-hydric soils, if applicable.
d. An inventory of plant and animal species that indicates the potential existence of ESHAs.
e. A detailed map that shows the conclusions regarding the boundary, precise location and extent, or current status of the ESHA based on substantial evidence provided in the biological studies.

5.3 Protection of Environmentally Sensitive Habitat Areas

ESHAs shall be protected against significant disruption of habitat values, and only uses or development dependent on and compatible with maintaining such resources shall be allowed within ESHAs or their buffers. A setback or buffer separating all permitted development from an adjacent ESHA shall be required and shall have a minimum width as described in *Sections 5.3.1-5.3.4*. The purpose of such setbacks shall be to prevent any degradation (or further degradation)

of the ecological functions provided by habitat areas in the survey area. Development adjacent to an ESHA shall minimize impacts to habitat values or sensitive species to the maximum extent feasible. Native vegetation shall be provided in buffer areas to serve as transitional habitat. All buffers shall be of a sufficient size to ensure the biological integrity and preservation of the ESHA they are designed to protect.

5.3.1 Coastal Scrub Communities

Impacts to coastal scrub communities including California sagebrush scrub, California sagebrush-California buckwheat scrub, lemonade berry scrub, and quailbush scrub, as illustrated on Figures 4-1a through 4-1c, shall be minimized through the provision of a minimum 25 foot setback that is restored with native species around the perimeter of the delineated habitat area.

5.3.2 Grass and Herb Dominated Communities

Impacts to native grassland, including giant wild rye grassland as illustrated on Figure 4-1a, shall be minimized through the provision of a minimum 10 foot setback that is restored with native species around the perimeter of the delineated native grassland perimeter.

5.3.3 Broad Leafed Upland Tree Dominated Communities

Stands of eucalyptus trees along and within Calafia Canyon (Figure 4-1c) constitute monarch butterfly ESHAs and as such shall be protected against significant disruption of habitat values, and only uses or development dependent on and compatible with maintaining such resources shall be allowed within these ESHAs or their buffer areas. The following standards shall apply to monarch butterfly ESHAs in the City's LCP:

a. No development, except as otherwise allowed by this policy, shall be allowed within monarch butterfly ESHAs or ESHA buffers.

b. Since the specific locations of aggregation sites may vary from one year to the next, the focus of protection shall be the entire grove of trees rather than individual trees that are the location of the roost.

c. Removal of vegetation within monarch ESHAs shall be prohibited, except for minor pruning of trees or removal of dead trees and debris that are a threat to public safety.

d. Public trails and accessways are considered resource-dependent uses and may be located within a monarch ESHA or its buffer; however, such features shall be sited to avoid or minimize impacts to aggregation sites.

e. Interpretative signage is allowed within a monarch ESHA or its buffer, but it shall be designed to be visually unobtrusive.

f. Butterfly research, including tree disturbance or other invasive methods, may be allowed subject to City approval of a permit.

A buffer of a sufficient size to ensure the biological integrity and preservation of the monarch butterfly habitat, including aggregation sites and the surrounding grove of trees, shall be required. Buffers shall not be less than 100 feet around existing and historic roost sites as measured from the outer extent of the tree canopy. The buffer area shall serve as transitional habitat with native vegetation and shall provide physical barriers to human intrusion. The buffer may be reduced to 50 feet in circumstances where the trees contribute to the habitat but are not considered likely to function as an aggregation site, such as along narrow windrows. Grading and other activities that could alter the surface hydrology that sustains the groves of trees are prohibited within or adjacent to the buffer area.

5.3.4 Waters of the United States/State, including Wetlands

The biological productivity and the quality of waters of the U.S. and State, including wetlands, shall be protected and, where feasible, restored in accordance with the federal and state regulations and policies that apply to wetlands within the Coastal Zone. A setback of a sufficient size to ensure the biological integrity and preservation of waters of the U.S. and State, including wetlands, shall be required. Generally the required buffer shall be 100 feet, but in no case shall setbacks be less than 50 feet unless authorized by the City. The buffer size should take into consideration the type and size of the development, the sensitivity of the wetland resources to detrimental edge effects of the development to the resources, natural features such as topography, the functions and values of the wetland, and the need for upland transitional habitat. A 100-foot minimum buffer area shall not be reduced when it serves the functions and values of slowing and absorbing flood waters for flood and erosion control, sediment filtration, water purification, and ground water recharge. The buffer area shall serve as transitional habitat with native vegetation and shall provide physical barriers to human intrusion.

5.3.5 Beaches

Access to beach areas by motorized vehicles, including off-road vehicles, shall be prohibited, except for beach maintenance and emergency response vehicles of public agencies. Emergency services shall not include routine vehicular patrolling by private security forces. Any beach grooming activities shall employ hand-grooming methods, and mechanical beach grooming equipment and methods shall be prohibited. All vehicular uses on beach areas shall avoid ESHAs to the maximum extent feasible.

Uses on beaches and shoreline areas shall be limited to coastal-dependent activities that are compatible with preservation of the quality of the resource, including coastal-dependent recreation activities such as swimming, surfing, boating and kayaking, and fishing. Any commercial coastal-dependent recreation activities that would limit use of beach and shoreline areas to customers and exclude the general public shall be subject to approval of a permit by the City. Any such permitted uses shall not degrade the quality or the habitat or cause impacts to birds and other wildlife.

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6 ACKNOWLEDGMENTS

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APPENDIX A

Plant Species Potentially Occurring within the Survey Area

APPENDIX A
Plant Species Potentially Occurring within the Survey Area

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Abronia maritima	red sand-verbena	None/ None/ 4.2	Coastal dunes/ perennial herb/ Feb-Nov/ 0-328	High potential to occur within map areas 13-14 due to suitable habitat present. Species has potential to occur where it is fenced off from foot traffic. Herbarium specimens have documented the species along San Onofre beaches and bluffs just south of San Clemente beach. Species has also been documented within the southern end of San Clemente beach. Species has been documented from the coastline of Mexico all the way up to Santa Cruz, Ca (CalFlora 2014). Not expected to occur within map areas 1-11 because no suitable coastal dune habitat is present.
Aphanisma blitoides	aphanisma	None/ None/ 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub/sandy/ annual herb/ Mar-Jun/ 3-1001	Moderate potential to occur in map areas 12-14. Species has been documented near San Clemente state beach in 1937 and 1971 (San Diego Plant Atlas 2014). It may be possible in areas fenced off from foot traffic. It is very sensitive to disturbance so any areas with disturbance will make it unlikely. Not expected to occur within map areas 1-11. According to historical records San Clemente state beach may be one of the last sites for this species to occur.
Arctostaphylos rainbowensis	Rainbow manzanita	None/ None/ 1B.1	Chaparral/ perennial evergreen shrub/ Dec-Mar/ 673-2198	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Artemisia palmeri	San Diego sagewort	None/ None/ 4.2	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland/sandy, mesic/ perennial deciduous shrub/ (Feb),May-Sep/ 49-3002	Low potential to occur. Riparian forest and riparian scrub were not present within the survey areas. Within the drainages where potential for San Diego sagewort was possible, non-native weeds and ornamental plantings were abundant. A few willow species were found in better habitat but typical habitat for San Diego sagewort (perennial undisturbed drainages) were not found within the survey area. Species has been documented on the eastern side of the 1-5 freeway (CalFlora 2014; San Diego Plant Atlas 2014).
Asplenium vespertinum	western spleenwort	None/ None/ 4.2	Chaparral, Cismontane woodland, Coastal scrub/rocky/ perennial rhizomatous herb/ Feb-Jun/ 591-3281	Not expected to occur. The site is outside of the species' known elevation range.
Atriplex coulteri	Coulter's saltbush	None/ None/ 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland/alkaline or clay/ perennial herb/ Mar-Oct/ 10-1509	Moderate potential to occur in map areas 8-14. Species has been documented throughout San Onofre State beach in 2011 (CalFlora 2014; San Diego Plant Atlas 2014). In areas fenced off from foot traffic Coulter's saltbush has potential to occur. Not expected to occur in map areas 1-7 which consisted mostly of ornamental species.
Atriplex pacifica	South Coast saltscale	None/ None/ 1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/ annual herb/ Mar-Oct/ 0-459	High potential to occur. South coast saltscale is found in Linne clay loam, alkaline flats and sandy soils where shrubs are less common. South coast saltscale has declined severely along the coastal range. CalFlora (2014) shows the distribution to be within map location 14. Much of this area was fenced off from foot traffic.
Baccharis vanessae	Encinitas baccharis	FT/ CE/ 1B.1	Chaparral(maritime), Cismontane woodland/sandstone/ perennial deciduous shrub/ Aug-Nov/ 197-2362	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Brodiaea filifolia	thread-leaved brodiaea	FT/ CE/ 1B.1	Chaparral(openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools/often clay/ perennial bulbiferous herb/ Mar-Jun/ 82-3675	Low potential to occur. Thread leaved brodiaea requires undisturbed clay soils. It is found with native grassland (Stipa pulchra) and other native wildflowers like blue eyed grass (Sisyrichium bellum). Map areas 1-7 were too disturbed with ornamental species and consisted of sandy soils. Map areas 8-14 have sandy soils. Thread-leaved brodiaea is known to occur throughout Camp Pendleton within clay soils and native grasslands. Some populations are just east of San Clemente off of Cristianitos road (San Diego Plant Atlas 2014).
Brodiaea orcuttii	Orcutt's brodiaea	None/ None/ 1B.1	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal pools/mesic, clay, sometimes serpentinite/ perennial bulbiferous herb/ May-Jul/ 98-5551	Moderate potential to occur within map area 14. Orcutt's brodiaea is found within vernally moist grasslands, areas with mima mound topography and the periphery of vernal pools. Map 14 contains suitable mima mounds within the southernmost portion; therefore there is a moderate potential to occur. Species is known to occur east of the 1-5 freeway. The most abundant populations of Orcutt's brodiaea occur at Miramar (CalFlora 2014; San Diego Plant Atlas 2014). Low potential to occur within map areas 1-13. Map areas 1-7 were too disturbed with ornamental species and consisted of sandy soils. Map areas 8-13 have sandy soils and lack suitable mima mounds.
Brodiaea santarosae	Santa Rosa Basalt brodiaea	None/ None/ 1B.2	Valley and foothill grassland/basaltic/ perennial bulbiferous herb/ May-Jun/ 1854-3428	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Calochortus catalinae	Catalina mariposa lily	None/ None/ 4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ perennial bulbiferous herb/ (Feb),Mar-Jun/ 49-2297	Low potential to occur. Catalina mariposa lily is found north of Laguna Niguel and within Santa Catalina Island. Map sites 1-14 are likely outside of the lily's distribution range.
Calochortus plummerae	Plummer's mariposa lily	None/ None/ 4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland/granitic, rocky/ perennial bulbiferous herb/ May-Jul/ 328-5577	Not expected to occur. The site is outside of the species' known elevation range.
Calochortus weedii var. intermedius	intermediate mariposa lily	None/ None/ 1B.2	Chaparral, Coastal scrub, Valley and foothill grassland/rocky, calcareous/ perennial bulbiferous herb/ May-Jul/ 344-2805	Not expected to occur. The site is outside of the species' known elevation range.
Caulanthus simulans	Payson's jewel-flower	None/ None/ 4.2	Chaparral, Coastal scrub/sandy, granitic/ annual herb/ (Feb),Mar-May(Jun)/ 295-7218	Not expected to occur. The site is outside of the species' known elevation range.
Centromadia parryi ssp. australis	southern tarplant	None/ None/ 1B.1	Marshes and swamps(margins), Valley and foothill grassland(vernally mesic), Vernal pools/ annual herb/ May-Nov/ 0-1575	Low potential to occur. Southern tarplant requires vernally mesic soils. Southern tarplant does like disturbance but the overall distribution of map areas 1-14 are well outside the range of southern tarplant. The soils are also not appropriate for this species. Most populations of southern tarplant area have been documented around Newport beach and Irvine (CalFlora 2014).
Centromadia pungens ssp. laevis	smooth tarplant	None/ None/ 1B.1	Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland/alkaline/ annual herb/ Apr-Sep/ 0-2100	Low potential to occur. Smooth tarplant is found in alkaline locations which were not found within the map areas 1-14. The largest distributions occur near Hemet and Temecula, California (CalFlora 2014).

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Chaenactis glabriuscula var. orcuttiana	Orcutt's pincushion	None/ None/ 1B.1	Coastal bluff scrub(sandy), Coastal dunes/ annual herb/ Jan-Aug/ 0-328	Low potential to occur in map areas 8-14. Although the species is found within coastal sandy habitats, it is sensitive to slight disturbance. Most of the populations occur much further south of the site (CalFlora 2014; San Diego Plant Atlas 2014). A few populations were documented south of Encinitas, but mostly it is found within Torrey Pines State Preserve. Not expected to occur in map areas 1-7 since they are dominated by ornamental vegetation.
Chamaebatia australis	southern mountain misery	None/ None/ 4.2	Chaparral(gabbroic or metavolcanic)/ perennial evergreen shrub/ Nov-May/ 984-3346	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Chorizanthe leptotheca	Peninsular spineflower	None/ None/ 4.2	Chaparral, Coastal scrub, Lower montane coniferous forest/alluvial fan, granitic/ annual herb/ May-Aug/ 984-6234	Not expected to occur. The site is outside of the species' known elevation range.
Chorizanthe polygonoides var. longispina	long-spined spineflower	None/ None/ 1B.2	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools/often clay/ annual herb/ Apr-Jul/ 98-5020	Low potential to occur. Long-spined spineflower is found within clay lenses that are largely devoid of shrubs. Map sites 1-14 consisted of more sandy soils.
Cistanthe maritima	seaside cistanthe	None/ None/ 4.2	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland/sandy/ annual herb/ (Feb),Mar-Jun(Aug)/ 16-984	Low potential to occur. Seaside cistanthe's largest population is within the Otay region. Once small population occurs in Long Beach, CA (CalFlora 2014; San Diego Plant Atlas 2014). It is unlikely within map areas 1-14.
Clinopodium chandleri	San Miguel savory	None/ None/ 1B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland/Rocky, gabbroic or metavolcanic/ perennial shrub/ Mar-Jul/ 394-3527	Not expected to occur. The site is outside of the species' known elevation range.
Comarostaphylis diversifolia ssp. diversifolia	summer holly	None/ None/ 1B.2	Chaparral, Cismontane woodland/ perennial evergreen shrub/ Apr-Jun/ 98-2592	Not expected to occur. No suitable vegetation present.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Convolvulus simulans	small-flowered morning-glory	None/ None/ 4.2	Chaparral(openings), Coastal scrub, Valley and foothill grassland/clay, serpentinite seeps/ annual herb/ Mar-Jul/ 98-2297	Not expected to occur. Species is known to occur on the eastern side of the 1-5 freeway (CalFlora 2014; San Diego Plant Atlas 2014). Species is also found within friable clay soils that are devoid of shrubs. Suitable clay soils were absent.
Deinandra paniculata	paniculate tarplant	None/ None/ 4.2	Coastal scrub, Valley and foothill grassland, Vernal pools/usually vernally mesic, sometimes sandy/ annual herb/ Apr-Nov/ 82-3084	Moderate potential to occur within map areas 1-14. Paniculate tarplant is distributed throughout Camp Pendleton and along San Clemente state beach (southern section) in both disturbed and undisturbed locations. According to herbarium reports, paniculate tarplant was found within mima mound fields. Mima mound fields were only found within map area 14.
Dichondra occidentalis	western dichondra	None/ None/ 4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ perennial rhizomatous herb/ (Jan),Mar-Jul/ 164-1640	Low potential to occur. Species is found within rocky outcrops of grasslands and suitable habitat is absent within map areas 1-14.
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	None/ None/ 1B.1	Coastal bluff scrub, Chaparral, Coastal scrub, Valley and foothill grassland/rocky, often clay or serpentinite/ perennial herb/ Apr-Jun/ 16-1476	Low potential to occur. Species is found on coastal bluff scrub habitat at Camp Pendleton; however, the populations have greatly declined. It is likely that even map areas 13 and 14 are too disturbed for this species. Blochman's Dudleya also requires specialized soils. It has been observed with iron concretions surrounding and within the populations. According to CalFlora (2014) two populations were observed near San Clemente in 1950 but they are outside of map areas 1-14 and one population has been extirpated.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Dudleya multicaulis	many-stemmed dudleya	None/ None/ 1B.2	Chaparral, Coastal scrub, Valley and foothill grassland/often clay/ perennial herb/ Apr-Jul/ 49-2592	Moderate potential to occur in map areas 12-14. Many-stemmed Dudleya is found in sagescrub habitat. It is found throughout Camp Pendleton from the coastline east. Low potential to occur within map areas 1-11.
Dudleya stolonifera	Laguna Beach dudleya	FT/ CT/ 1B.1	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/rocky/ perennial stoloniferous herb/ May-Jul/ 33-853	Low potential to occur. Species is distributed north of Laguna Niguel, CA (CalFlora 2014) and is unlikely to occur within map areas 1-14 based on distribution alone.
Dudleya viscida	sticky dudleya	None/ None/ 1B.2	Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub/rocky/ perennial herb/ May-Jun/ 33-1804	Low potential to occur. Species is found off of Vandegrift Boulevard at Camp Pendleton in undisturbed bluff scrub habitat. It is likely that the coastal bluff scrub within map areas 13 and 14 may be slightly disturbed for this species to occur.
Eryngium aristulatum var. parishii	San Diego button-celery	FE/ CE/ 1B.1	Coastal scrub, Valley and foothill grassland, Vernal pools/mesic/ annual / perennial herb/ Apr-Jun/ 66-2034	Moderate potential to occur to occur within map area 14Species is found in southern Camp Pendleton along the coast and near the Murrieta side of Camp Pendleton north within vernal pools (CalFlora 2014; San Diego Plant Atlas 2014). Species is known to occur in vernal pool communities with mima mound habitat, but always close to vernal pools. Suitable mima mound habitat is present within map area 14. Low potential to occur within map areas 1-13 due to absence of suitable vernal pools.
Eryngium pendletonense	Pendleton button-celery	None/ None/ 1B.1	Coastal bluff scrub, Valley and foothill grassland, Vernal pools/clay, vernally mesic/ perennial herb/ Apr-Jun(Jul)/ 49-361	Low potential to occur. Pendleton button-celery has only been observed on Camp Pendleton within clay soils.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Erysimum ammophilum	sand-loving wallflower	None/ None/ 1B.2	Chaparral(maritime), Coastal dunes, Coastal scrub/sandy, openings/ perennial herb/ Feb-Jun/ 0-197	Low potential to occur. The habitat within map area 11-14 is suitable but distributions of the species occur outside of San Clemente. Species is known to occur within the southern end of Camp Pendleton.
Euphorbia misera	cliff spurge	None/ None/ 2B.2	Coastal bluff scrub, Coastal scrub, Mojavean desert scrub/rocky/ perennial shrub/ Dec-Aug(Oct)/ 33-1640	Low potential to occur. Species is known to occur with native cactus and sage scrub in cobbly loam in Otay Mesa and found in the gaviota fine sandy loam near Point LomaSpecies is not known to occur near map sites 1-14 (CalFlora 2014; San Diego Plant Atlas 2014).
Ferocactus viridescens	San Diego barrel cactus	None/ None/ 2B.1	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/ perennial stem succulent/ May-Jun/ 10-1476	Low potential to occur. Species occurs on the periphery of vernal pools and in mima mound topography. Mima mounds are present within map areas 14; however, species is most likely to be found in Otay Mesa and areas much further south of San Clemente.
Harpagonella palmeri	Palmer's grapplinghook	None/ None/ 4.2	Chaparral, Coastal scrub, Valley and foothill grassland/clay/ annual herb/ Mar-May/ 66-3133	High potential to occur. Species has been documented within map area 13 and 14. CalFlora (2014) shows the distribution in areas that are not accessible to foot traffic.
Holocarpha virgata ssp. elongata	graceful tarplant	None/ None/ 4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ annual herb/ May-Nov/ 197-3609	Moderate potential to occur within map area 14Speceis has been documented within the Mima mound fields south of map area 14 and suitable mima mounds were observed within map area 14. Larger populations of graceful tarplant are found within the Santa Rosa Plateau and around Poway and Ramona. Low potential to occur within map areas 1-13 due to absence of suitable mima mounds.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Hordeum intercedens	vernal barley	None/ None/ 3.2	Coastal dunes, Coastal scrub, Valley and foothill grassland(saline flats and depressions), Vernal pools/ annual herb/ Mar-Jun/ 16-3281	Low potential to occur. Species occurs within saline flats and vernal pool basins; however, these were not found in map areas 1-14. Species is known to occur within a vernal pool complex south of map 14 (CalFlora 2014).
Horkelia cuneata var. puberula	mesa horkelia	None/ None/ 1B.1	Chaparral(maritime), Cismontane woodland, Coastal scrub/sandy or gravelly/ perennial herb/ Feb-Jul(Sep)/ 230-2657	Low potential to occur. The distribution of this species occurs north of Laguna Niguel (CalFlora 2014). In addition, the elevation range is slightly outside that of maps 1-14.
Horkelia truncata	Ramona horkelia	None/ None/ 1B.3	Chaparral, Cismontane woodland/clay, gabbroic/ perennial herb/ May-Jun/ 1312-4265	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Imperata brevifolia	California satintail.	None/ None/ 2B.1	Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps(often alkali), Riparian scrub/mesic/ perennial rhizomatous herb/ Sep-May/ 0-3986	Not expected to occur. Maps 1-14 are located outside of the species' known distribution range. Species is found in San Bernardino and Palm Springs.
Isocoma menziesii var. decumbens	decumbent goldenbush	None/ None/ 1B.2	Chaparral, Coastal scrub(sandy, often in disturbed areas)/ perennial shrub/ Apr-Nov/ 33-443	Low potential to occur. Isocoma menziesii was keyed out within the coastal sage scrub community and keyed to variety menziesii. It is likely that the other species of Isocoma consist of the same variety. In addition, the majority of herbarium specimens are located along the coast of Camp Pendleton or south of Camp Pendleton.
Juglans californica	Southern California black walnut	None/ None/ 4.2	Chaparral, Cismontane woodland, Coastal scrub/alluvial/ perennial deciduous tree/ Mar-Aug/ 164-2953	Not expected to occur. Map areas 1-14 are outside the species' known distribution range. Species is known to occur east of Fallbrook with one population north near Aliso Viejo and another population south near San Elijo Lagoon (CalFlora 2014).

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Juncus acutus ssp. leopoldii	southwestern spiny rush	None/ None/ 4.2	Coastal dunes(mesic), Meadows and seeps(alkaline seeps), Marshes and swamps(coastal salt)/ perennial rhizomatous herb/ (Mar),May-Jun/ 10-2953	Low potential to occur. Species is found in mesic meadows, marshes and swamps; however, map areas 1-14 did not consist of this habitat. No populations have been documented in San Clemente (CalFlora 2014).
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None/ None/ 1B.1	Marshes and swamps(coastal salt), Playas, Vernal pools/ annual herb/ Feb-Jun/ 3-4003	Moderate potential to occur within map area 14.Vernal pool upland habitat with in some cases mima mound topography and soils were only found within map area 14. Low potential t to occur within map areas 1-13 due to lack of suitable vernal pools.
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	None/ None/ 4.3	Chaparral, Coastal scrub/ annual herb/ Jan-Jul/ 3-2904	Not expected to occur. Species is usually found well away from the coastline. Species distribution occurs outside of San Clemente (CalFlora 2014).
Leptosyne maritima	sea dahlia	None/ None/ 2B.2	Coastal bluff scrub, Coastal scrub/ perennial herb/ Mar-May/ 16-492	Low potential to occur. Suitable habitat and soils are present; however, distribution patterns document the species south of Las Pulgas Canyon road, Camp Pendleton. Species may occur in fenced off areas where foot traffic is not allowed but is unlikely.
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	None/ None/ 4.2	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland/openings/ perennial bulbiferous herb/ Mar-Jul(Aug)/ 98-5906	Low potential to occur. It is found at higher elevations off the coastline. Maps 1-14 consisted of ornamental vegetation in areas occurring at 98-130 feet. In general, the ocellated Humboldt lily is not found coastally.
Lilium parryi	lemon lily	None/ None/ 1B.2	Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest/mesic/ perennial bulbiferous herb/ Jul-Aug/ 4003-9006	Not expected to occur. The site is outside of the species' known elevation range.
Lycium brevipes var. hassei	Santa Catalina Island desert-thorn	None/ None/ 1B.1	Coastal bluff scrub, Coastal scrub/ perennial deciduous shrub/ Jun(Aug)/ -213-984	Moderate potential to occur. Suitable habitat is present and species is located within areas where foot traffic is fenced off in Map 13 and 14 (CalFlora 2014).

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Lycium californicum	California box-thorn	None/ None/ 4.2	Coastal bluff scrub, Coastal scrub/ perennial shrub/ (Dec),Mar-Aug/ 16-492	Moderate potential to occur. Suitable habitat is present and species is located within areas where foot traffic is fenced off in Map 13 and 14 (CalFlora 2014).
Malacothrix saxatilis var. saxatilis	cliff malacothrix	None/ None/ 4.2	Coastal bluff scrub, Coastal scrub/ perennial rhizomatous herb/ Mar-Sep/ 10-656	Low potential to occur. Suitable habitat is present; however, distribution of the species occurs north of Dana Point. (CalFlora 2014). It is unlikely to occur within maps 1-14.
Microseris douglasii ssp. platycarpha	small-flowered microseris	None/ None/ 4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools/clay/ annual herb/ Mar-May/ 49-3510	Moderate potential to occur within map area 14. Species grows around vernal pool complexes and is typically found on clay lenses. Suitable mima mounds were present within map area 14; therefore, there is a moderate potential to occur. Low potential to occur within map areas 1-13. Only one extremely disturbed vernal pool was found (full of invasive weeds) and mima mounds were not found in map areas 1-13.
Mimulus diffusus	Palomar monkeyflower	None/ None/ 4.3	Chaparral, Lower montane coniferous forest/sandy or gravelly/ annual herb/ Apr-Jun/ 4003-6004	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Monardella hypoleuca ssp. intermedia	intermediate monardella	None/ None/ 1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest(sometimes)/Usually understory/ perennial rhizomatous herb/ Apr-Sep/ 1312-4101	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Monardella hypoleuca ssp. lanata	felt-leaved monardella	None/ None/ 1B.2	Chaparral, Cismontane woodland/ perennial rhizomatous herb/ Jun-Aug/ 984-5167	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Monardella macrantha ssp. hallii	Hall's monardella	None/ None/ 1B.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland/ perennial rhizomatous herb/ Jun-Oct/ 2395-7201	Not expected to occur. The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Myosurus minimus ssp. apus	little mousetail	None/ None/ 3.1	Valley and foothill grassland, Vernal pools(alkaline)/ annual herb/ Mar-Jun/ 66-2100	Low potential to occur. Species is found within vernal pools and since only one extremely disturbed vernal pool was found (full of invasive species) the likelihood of this species is low. In addition, speceis is more likely to be found in the Otay area (in vernal pools) or in Murrieta (in vernal pools) (CalFlora 2014).
Nama stenocarpum	mud nama	None/ None/ 2B.2	Marshes and swamps(lake margins, riverbanks)/ annual / perennial herb/ Jan-Jul/ 16-1640	Not expected to occur. Species is found at the edges of ponds and lakes in the muddy embankments and suitable habitat was not found within map areas 1-14. Populations of exist north of Irvine (CalFlora 2014).
Navarretia fossalis	spreading navarretia	FT/ None/ 1B.1	Chenopod scrub, Marshes and swamps(assorted shallow freshwater), Playas, Vernal pools/ annual herb/ Apr-Jun/ 98-2149	Moderate potential to occur within map area 14. Vernal pools are the preferred habitat of spreading navarretia and suitable habitat occurs within map area 14. Psilocarphus brevissimus grows with spreading navarretia. Low potential to occur within map areas 1-13. One vernal pool was found to be highly disturbed so the likelihood of spreading navarretia very low. In addition, the vernal pool communities near Temecula and Otay are where spreading navarretia is more likely to occur.
Navarretia prostrata	prostrate vernal pool navarretia	None/ None/ 1B.1	Coastal scrub, Meadows and seeps, Valley and foothill grassland(alkaline), Vernal pools/Mesic/ annual herb/ Apr-Jul/ 49-3970	Moderate potential to occur within map area 14. Populations o have been documented throughout San Clemente State beach especially within Mima mounds. Mima mounds are present within map area 14; therefore, there is a moderate potential for this species to occur. Areas that were not accessed (have been closed off to foot traffic) could not be surveyed. Low potential to occur within map area 13 and not expected to occur in map areas 1-12.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Nemacaulis denudata var. denudata	coast woolly-heads	None/ None/ 1B.2	Coastal dunes/ annual herb/ Apr-Sep/ 0-328	Low potential to occur. Species is known to occur north in Newport Beach and the southern end of Camp Pendleton (CalFlora 2014). Based on distribution alone, species is unlikely to occur.
Nolina cismontana	chaparral nolina	None/ None/ 1B.2	Chaparral, Coastal scrub/sandstone or gabbro/ perennial evergreen shrub/ (Mar),May-Jul/ 459-4183	Not expected to occur. The site is outside of the species' known elevation range.
Pentachaeta aurea ssp. allenii	Allen's pentachaeta	None/ None/ 1B.1	Coastal scrub(openings), Valley and foothill grassland/ annual herb/ Mar-Jun/ 246-1706	Low potential to occur. Species is known to occur north of Laguna Beach (CalFlora 2014). Potential in map areas 1-14 is unlikely based on distribution alone.
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	None/ None/ 3.2	Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps(coastal salt)/sandy, sometimes rocky/ perennial herb/ Mar-Aug/ 16-984	Low potential to occur. Species is known to occur near San Clemente (CalFlora 2014); however, it is much further south near Encinitas and north of Dana Point.
Pickeringia montana var. tomentosa	woolly chaparral-pea	None/ None/ 4.3	Chaparral/Gabbroic, granitic, clay/ evergreen shrub/ May-Aug/ 0-5577	Not expected to occur. No suitable vegetation present.
Piperia cooperi	chaparral rein orchid	None/ None/ 4.2	Chaparral, Cismontane woodland, Valley and foothill grassland/ perennial herb/ Mar-Jun/ 49-5200	Low potential to occur. No suitable vegetation is present. Species is found in chaparral and cismontane woodland and when it is found along the coast it is distributed in areas like Torrey pine state preserve. Species is not known to occur near San Clemente (San Diego Plant Atlas 2014).
Polygala cornuta var. fishiae	Fish's milkwort	None/ None/ 4.3	Chaparral, Cismontane woodland, Riparian woodland/ perennial deciduous shrub/ May-Aug/ 328-3281	Not expected to occur. The site is outside of the species' known elevation range.
Pseudognaphalium leucocephalum	white rabbit-tobacco	None/ None/ 2B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland/sandy, gravelly/ perennial herb/ (Jul),Aug-Nov(Dec)/ 0-6890	Low potential to occur. Species is known to occur north of San Juan Capistrano and south of Cristianitos Road at Camp Pendleton. Based on distribution alone it is unlikely.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Quercus dumosa	Nuttall's scrub oak	None/ None/ 1B.1	Closed-cone coniferous forest, Chaparral, Coastal scrub/sandy, clay loam/ perennial evergreen shrub/ Feb-Apr(Aug)/ 49-1312	Moderate potential to occur in map area 11-12 due to suitable chaparral and coastal scrub habitats present. Habitat was surveyed during accessible roads; therefore, this conspicuous evergreen could have been missed. Low potential to occur within map areas 1-10 and 13-14.
Quercus engelmannii	Engelmann oak	None/ None/ 4.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/ perennial deciduous tree/ Mar-Jun/ 164-4265	Not expected to occur. Typical vegetation communities where species is known to occur were not found within map areas 1-14. The distribution of Engelmann oak is much further east of the map areas (CalFlora 2014). Tree was not observed during the surveys and would have been detected if present.
Romneya coulteri	Coulter's matilija poppy	None/ None/ 4.2	Chaparral, Coastal scrub/Often in burns/ perennial rhizomatous herb/ Mar-Jul/ 66-3937	Low potential to occur. Species is usually considered a fire follower and is typically found within chaparral. Species is known to occur more inland (distributed around Camp Pendleton) (San Diego Plant Atlas 2014).
Saltugilia caruifolia	caraway-leaved woodland-gilia	None/ None/ 4.3	Chaparral, Lower montane coniferous forest/Sandy, openings/ annual herb/ May-Aug/ 2756-7546	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.
Senecio aphanactis	chaparral ragwort	None/ None/ 2B.2	Chaparral, Cismontane woodland, Coastal scrub/sometimes alkaline/ annual herb/ Jan-Apr/ 49-2625	Moderate potential to occur within map area 14. One small population was documented within mima mounds along San Clemente state beach in 1994. Suitable mima mound formations were only found within map area 14. Low potential to occur within map areas 1-13.

Scientific Name	Common Name	Status (Federal/State /CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Sidalcea neomexicana	salt spring checkerbloom	None/ None/ 2B.2	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas/alkaline, mesic/ perennial herb/ Mar-Jun/ 49-5020	Low potential to occur. Species is known to occur north of Irvine and east of Fallbrook (CalFlora 2014). Suitable habitat was not found within map areas 1-14.
Suaeda esteroa	estuary seablite	None/ None/ 1B.2	Marshes and swamps(coastal salt)/ perennial herb/ May-Oct(Jan)/ 0-16	Not expected to occur. Species is known to occur north of the map areas within Newport Beach and south of Solana beach (CalFlora 2014). Species is typically restricted to salt marsh communities and suitable salt marsh vegetation is absent within survey maps 1-14.
Suaeda taxifolia	woolly seablite	None/ None/ 4.2	Coastal bluff scrub, Coastal dunes, Marshes and swamps(margins of coastal salt)/ perennial evergreen shrub/ Jan-Dec/ 0-164	Low potential to occur. Species has been documented in 2011 within the coastline of San Clemente (CalFlora 2014). It is typically restricted to salt marsh communities and suitable salt marsh vegetation is absent within survey maps 1-14.
Tetracoccus dioicus	Parry's tetracoccus	None/ None/ 1B.2	Chaparral, Coastal scrub/ perennial deciduous shrub/ Apr-May/ 541-3281	Not expected to occur. The site is outside of the species' known elevation range.
Tortula californica	California screw-moss	None/ None/ 1B.2	Chenopod scrub, Valley and foothill grassland/sandy, soil/ moss/ N.A./ 33-4790	Low potential to occur. According to CalFlora (2014), species is found northeast of San Clemente within Temecula, Hemet and near Calabasas.
Verbesina dissita	big-leaved crownbeard	FT/ CT/ 1B.1	Chaparral(maritime), Coastal scrub/ perennial herb/ Apr-Jul/ 148-673	Low potential to occur. Species is known to occur north of Laguna Niguel.
Viguiera laciniata	San Diego County viguiera	None/ None/ 4.2	Chaparral, Coastal scrub/ perennial shrub/ Feb-Jun(Aug)/ 197-2461	Low potential to occur. Species is more likely to be found more inland from the coast and is found in cobbly loam soils. Large populations of San Diego county viguiera are found within the Otay region.
Viguiera purisimae	La Purisima viguiera	None/ None/ 2B.3	Coastal bluff scrub, Chaparral/ shrub/ Apr-Sep/ 1198-1394	Not expected to occur. The site is outside of the species' known elevation range.

[1] Status Legend:

Federal

FE: Federally listed as endangered

FT: Federally listed as threatened

FC: Federal Candidate for listing

State
CE: State listed as endangered
CT: State listed as threatened
CR: State Rare

CRPR
CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CRPR 3: Plants About Which More Information is Needed - A Review List
CRPR 4: Plants of Limited Distribution - A Watch List
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Sources:
CalFlora 2014. http://www.calflora.org/ Accessed: December 3, 2014.
San Diego Plant Atlas 2014. http://www.sdplantatlas.org/GMap/GMapSpeciesMap.htm Accessed: December 3, 2014.

APPENDIX B

Special-Status Wildlife Species Potentially Occurring within the Survey Area

APPENDIX B
Special-Status Wildlife Species Potentially Occurring within the Survey Area

Scientific Name	Common Name	Status Federal/ State/ NCCP[1]	Primary Habitat Associations	Status On-site or Potential To Occur
Amphibians				
Anaxyrus californicus	Arroyo toad	FE/ SSC/ Covered	Stream channels for breeding (typically 3rd order); adjacent stream terraces and uplands for foraging and wintering	Unlikely to occur due to lack of suitable breeding habitat. CNDDB occurrence records within vicinity of project.
Spea [=Scaphiopus] hammondi	Western spadefoot	None/ SSC/ Covered	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitat	Marginally suitable habitat present, low potential to occur. CNDDB occurrence records within vicinity of project.
Taricha torosa	Coast range newt	None/ SSC/ None	Coastal drainages; lives in terrestrial habitats and will migrate over 1 km to ponds, reservoirs, and slow-moving streams	Suitable habitat present, moderate potential to occur. CNDDB occurrence records within vicinity of project.
Reptiles				
Aspidoscelis hyperythra [=Cnemidophorus hyperythrus]	Orange-throated whiptail	None/ SSC/ Covered	Coastal sage scrub, chaparral, grassland, juniper and oak woodland	Suitable habitat present; high potential to occur. CNDDB occurrence records within vicinity of project.
Aspidoscelis tigris stejnegeri [=Cnemidophorus tigris multiscutatus]	Coastal western whiptail	None/ None/ Covered	Coastal sage scrub, chaparral	Suitable habitat present; high potential to occur. CNDDB occurrence records within vicinity of project.
Charina trivirgata	Rosy boa	None/ None/ Covered	Rocky chaparral, coastal sage scrub, oak woodlands, desert and semi-desert scrub	Marginally suitable habitat present; low potential to occur.
Crotalus ruber	Red-diamond rattlesnake	None/ SSC/ Covered	Variety of shrub habitats where there is heavy brush, large rocks, or boulders	Suitable habitat present; high potential to occur. CNDDB occurrence records within vicinity of project.

Scientific Name	Common Name	Status Federal/ State/ NCCP[1]	Primary Habitat Associations	Status On-site or Potential To Occur
Emys marmorata	Western pond turtle	None/ SSC/ None	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter	Unlikely to occur due to lack of suitable habitat. CNDDB occurrence records within vicinity of project.
Lampropeltis zonata (pulchra)	California mountain kingsnake (San Diego population)	None/ SSC/ None	Valley-foothill hardwood, hardwood-conifer, chaparral, coniferous forest, wet meadow	Limited suitable habitat present; very low potential to occur due to range.
Phrynosoma coronatum (blainvillei population)	Coast (San Diego) horned lizard	None/ SSC/ Covered	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest	Suitable habitat present; High potential to occur. CNDDB occurrence records within vicinity of project.
Plestiodon skiltonianus interparietalis	Coronado Island skink	None/ SSC/ None	Grassland, riparian and oak woodland; found in litter, rotting logs, under flat stones	Marginally suitable habitat present; moderate potential to occur. CNDDB occurrence records within vicinity of project.
Salvadora hexalepis virgultea	Coast patch-nosed snake	None/ SSC/ None	Chaparral, washes, sandy flats, rocky areas	Suitable habitat present; moderate potential to occur.
Thamnophis hammondii	Two-striped garter snake	None/ SSC/ None	Marshes, meadows, sloughs, ponds, slow-moving water courses	Limited suitable habitat present; low potential to occur on site.
		Birds		
Accipiter cooperii (nesting)	Cooper's hawk	None/WL/None	Riparian and oak woodlands, montane canyons	Observed foraging during 2014 survey. Moderate nesting potential on site.
Agelaius tricolor	Tricolored blackbird	BCC, WLBCC/ SE/ None	Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, agriculture	Marginally suitable foraging habitat present; low potential to occur; would have been observed if present. CNDDB occurrence records within vicinity of project.

Scientific Name	Common Name	Status Federal/ State/ NCCP[1]	Primary Habitat Associations	Status On-site or Potential To Occur
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/ WL/ Covered	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops	Suitable habitat present; moderate potential to occur. CNDDB occurrence records within vicinity of project.
Ammodramus savannarum	Grasshopper sparrow	None/ SSC/ None	Open grassland and prairie, especially native grassland with a mix of grasses and forbs	Limited suitable habitat present; low potential to occur. CNDDB occurrence records within vicinity of project.
Aquila chrysaetos (nesting and nonbreeding/wintering)	Golden eagle	BCC/ WL, FP/ Covered	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest	Very unlikely to occur due to lack of suitable foraging and breeding habitat. CNDDB occurrence records within vicinity of project.
Asio otus	Long-eared owl	None/ SSC/ None	Riparian, live oak thickets, other dense stands of trees, edges of coniferous forest	Suitable habitat present; moderate potential to occur. CNDDB occurrence records within vicinity of project.
Athene cunicularia (burrow sites)	Burrowing owl	BCC/ SSC/ None	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas	Limited suitable habitat present; low potential to occur. CNDDB occurrence records within vicinity of project.
Buteo regalis (nonbreeding/wintering)	Ferruginous hawk	BCC/ WL/ None	Open, dry country, grasslands, open fields, agriculture	Limited suitable habitat present; low potential to occur as a migrant.
Campylorhynchus brunneicapillus sandiegensis	*San Diego cactus wren*	BCC/ SSC/ Covered	Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub	No suitable habitat; would have been detected if present. CNDDB occurrence records within vicinity of project.
Circus cyaneus (nesting)	Northern harrier	None/ SSC/ Covered	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub	Moderate potential to forage over the site, not observed during surveys. CNDDB occurrence records within vicinity of project.

Scientific Name	Common Name	Status Federal/ State/ NCCP[1]	Primary Habitat Associations	Status On-site or Potential To Occur
Elanus leucurus (nesting)	White-tailed kite	None/FP/Covered	Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, riparian	Limited suitable nesting habitat present; low potential to nest onsite. CNDDB occurrence records within vicinity of project.
Empidonax traillii extimus (nesting)	Southwestern willow flycatcher	FE, WLBCC/ SE/ Covered	Riparian woodlands along streams and rivers with mature, dense stands of willows or alders; may nest in thickets dominated by tamarisk	No suitable nesting habitat; very low potential to occur onsite. CNDDB occurrence records within vicinity of project.
Eremophila alpestris actia	California horned lark	None/WL/Covered	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields	No suitable habitat; very low potential to occur onsite. CNDDB occurrence records within vicinity of project.
Icteria virens (nesting)	Yellow-breasted chat	None/ SSC/ None	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles and dense brush.	No suitable habitat; very low potential to occur onsite.
Laterallus jamaicensis coturniculus	California black rail	BCC, WLBCC/ ST, FP/ None	Saline, brackish, and fresh emergent wetlands	No suitable habitat on site; no potential to occur.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	None/ SE/ None	Saltmarsh, pickleweed	Suitable habitat present on site; high potential to occur. CNDDB occurrence records within vicinity of project.
Polioptila californica californica	Coastal California gnatcatcher	FT, BCC, WLBCC/SSC/ Covered	Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer	Suitable habitat present on site; high potential to occur. CNDDB occurrence records within vicinity of project.
Rallus longirostris levipes	Light-footed clapper rail	FE/ SE, FP/ None	Coastal saltmarsh	No suitable habitat on site; no potential to occur. CNDDB occurrence records within vicinity of project.

Scientific Name	Common Name	Status Federal/ State/ NCCP[1]	Primary Habitat Associations	Status On-site or Potential To Occur
Sternula antillarum browni	California least tern	FE/ SE, FP/ None	Nests along the coast from San Francisco Bay south to northern Baja California	Suitable habitat present on site; moderate potential to occur. CNDDB occurrence records within vicinity of project.
Vireo bellii pusillus (nesting)	Least Bell's vireo	FE, BCC, WLBCC/ SE/ Covered	Nests in southern willow scrub with dense cover within 1-2 meters of the ground; habitat includes willows, cottonwoods, baccharis, wild blackberry or mesquite on desert areas	No suitable habitat on site; no potential to occur. CNDDB occurrence records within vicinity of project.
Mammals				
Antrozous pallidus	Pallid bat	None/ SSC/ None	Rocky outcrops, cliffs, and crevices with access to open habitats for foraging	No roosting habitat on site; moderate potential to forage in vicinity. CNDDB occurrence records within vicinity of project.
Chaetodipus californicus femoralis	Dulzura (California) pocket mouse	None/ SSC/ None	Coastal sage scrub, chaparral, riparian-scrub ecotone; more mesic areas	Suitable habitat present; high potential to occur. CNDDB occurrence records within vicinity of project.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	None/ SSC/ None	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams and sandy loams	Suitable habitat present; high potential to occur. CNDDB occurrence records within vicinity of project.
Choeronycteris mexicana	Mexican long-tongued bat	None/ SSC/ None	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings.	No roosting habitat on site; moderate potential to forage in vicinity. CNDDB occurrence records within vicinity of project.

Scientific Name	Common Name	Status Federal/ State/ NCCP[1]	Primary Habitat Associations	Status On-site or Potential To Occur
Dipodomys stephensi	Stephens' kangaroo rat	FE/ ST/ None	Open habitat, grassland, sparse coastal sage scrub, sandy loam and loamy soils with low clay content; gentle slopes (<30%)	Suitable habitat present; high potential to occur. CNDDB occurrence records within vicinity of project.
Eumops perotis californicus	Western mastiff bat	None/ SSC/ None	Roosts in small colonies in cracks and small holes, seeming to prefer man-made structures	No roosting habitat on site; moderate potential to forage in vicinity. CNDDB occurrence records within vicinity of project.
Lasiurus blossevillii	Western red bat	None/ SSC/ None	Forest, woodland, riparian, mesquite bosque and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Limited roosting habitat on site; moderate potential to forage in vicinity. CNDDB occurrence records within vicinity of project.
Myotis yumanensis	Yuma myotis	None/ None/ None	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	Roosting habitat on site (trees); moderate potential to forage in vicinity. CNDDB occurrence records within vicinity of project.
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC/ Covered	Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth	Suitable habitat present; moderate potential to occur; CNDDB occurrence records within vicinity of project.
Nyctinomops femorosaccus	Pocketed free-tailed bat	None/ SSC/ None	Rocky desert areas with high cliffs or rock outcrops	No roosting habitat on site; moderate potential to forage in vicinity. CNDDB occurrence records within vicinity of project.

Scientific Name	Common Name	Status Federal/ State/ NCCP[1]	Primary Habitat Associations	Status On-site or Potential To Occur
Nyctinomops macrotis	Big free-tailed bat	None/ SSC/ None	Rugged, rocky canyons	No roosting habitat on site; low potential to forage in vicinity.
Perognathus longimembris pacificus	Pacific pocket mouse	FE/ SSC/ Covered	Grassland, coastal sage scrub with sandy soils; along immediate coast	Suitable habitat present; high potential to occur. CNDDB occurrence records within vicinity of project.
Sorex ornatus salicornicus	southern California saltmarsh shrew	None/ SSC/ None	Salt marsh, salt grass, dense willow, bulrush	Suitable habitat present; moderate potential to occur.
Taxidea taxus	American badger	None/ SSC/ None	Dry, open treeless areas, grasslands, coastal sage scrub	Not expected to occur; believed to be extirpated from highly urbanized areas in southern California.
Invertebrates				
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/ None/ Covered	Small, shallow vernal pools, occasionally ditches and road ruts	Suitable habitat present; moderate potential to occur. CNDDB occurrence records within vicinity of project.
Coelus globosus	globose dune beetle	None/ None/ None	Coastal dunes	No suitable habitat on site; no potential to occur.
Danaus plexippus (wintering sites)	Monarch butterfly	None/ None/ None	Overwinters in eucalyptus groves	Observed on site, suitable roosting habitat present.
Eucyclogobius newberryi	Tidewater goby	FE/ SSC/ None	Low-salinity waters in coastal wetlands in brackish or freshwater in bays, sounds, and lagoons and creeks	No suitable habitat present on site; no potential to occur. CNDDB occurrence records within vicinity of project.
Gila orcutti	Arroyo chub	None/ SSC/ None	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths > 40 centimeters; substrates of sand or mud	No suitable habitat present on site; no potential to occur. CNDDB occurrence records within vicinity of project.

Scientific Name	Common Name	Status Federal/ State/ NCCP[1]	Primary Habitat Associations	Status On-site or Potential To Occur
Oncorhynchus mykiss irideus	southern steelhead - southern California DPS	FE/ SSC/ None	Fresh water, coastal lagoons, streams with sufficient winter flow and sand berms at mouths of streams that can be breached	No suitable habitat present on site; no potential to occur. CNDDB occurrence records within vicinity of project.
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	None/ SSC/ None	Permanent streams with cool, flowing rocky-bottomed washes, shallow cobble and gravel riffles	No suitable habitat present on site. Not expected to occur.
Streptocephalus woottoni	Riverside fairy shrimp	FE/ None/ Covered	Deep, long-lived vernal pools, vernal pool-like seasonal ponds, stock ponds; warm water pools that have low to moderate dissolved solids	Potentially suitable habitat present; moderate potential to occur. CNDDB occurrence records within vicinity of project.
Tryonia imitator	mimic tryonia (=California brackishwater snail)	None/ None/ None	Coastal lagoons, estuaries and salt marshes	No suitable habitat present on site. Not expected to occur.

[1] This table includes all NCCP-covered species and species reported in the 8 topographic quadrangles surrounding the Project Area (El Toro, Tustin, Laguna Beach, Santiago Peak, San Juan Capistrano, Canada Gobernadora, and Dana Point).

Federal Designations:
BCC United States Fish and Wildlife Service Birds of Conservation Concern
(FD) Federally delisted; monitored for five years
FE Federally listed Endangered
FT Federally listed as Threatened
WLBCC United States Watch List of Birds of Conservation Concern

State Designations:
FP California Department of Fish and Game Protected and Fully Protected Species
SE State-listed as Endangered
ST State-listed as Threatened
SSC California Department of Fish and Game Species of Special Concern
WL California Department of Fish and Game Watch List Species
NCCP Designations:
Covered – Covered species under central / Coastal Subarea Plan