

# BIOLOGICAL CONSTRAINTS ANALYSIS



## SANTA CATALINA ISLAND LAND DIVISION INCLUDING THE WRIGLEY MARINE SCIENCE CENTER PROJECT

TWO HARBORS, LOS ANGELES COUNTY, CALIFORNIA

COUNTY PROJECT NO. R2015-02436  
TENTATIVE TRACT MAP NO. 074099  
CONDITIONAL USE PERMIT R201500101  
COASTAL DEVELOPMENT PERMIT R201500092

September 2016

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TWO HARBORS, LOS ANGELES COUNTY, CALIFORNIA

Prepared For:  
University of Southern California  
3335 South Figueroa St, Unit G  
Los Angeles, Ca 90007  
Contact: Mr. Brian League

Prepared By:  
ESA PCR  
2121 Alton, Suite 100  
Irvine, California 92606  
Contacts:  
Daryl Koutnik, Ph.D., Principal, Biological and Environmental Compliance  
Ezekiel Cooley, Senior Biologist

September 2016

# Biological Constraints Analysis

Santa Catalina Island Land Division including the Wrigley Marine Science Center  
Project  
Two Harbors, Los Angeles County, California

*The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a supplemental biological resources assessment for the above-referenced project.*

ESA PCR



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Daryl Koutnik, Ph.D., Principal, Biological and Environmental Compliance



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Ezekiel Cooley, Senior Biologist

September 2016

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## **1.0 INTRODUCTION**

# 1.0 INTRODUCTION

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This report is prepared in support of the Santa Catalina Island Land Division including the Wrigley Marine Science Center Project located northeast of Two Harbors, Los Angeles County, California (**Figure 1**, *Regional Location and Project Vicinity Map*). The County Project No. R2015-02436 requests entitlements for Tentative Tract Map No. 074099, Conditional Use Permit R201500101, and Coastal Development Permit R201500092. The Project site is contained within the County tax parcels 7480-040-026 and portions of 7480-040-025 and 7480-040-013. The Project site contains portions of the Blue Cavern Point and Upper Isthmus Canyon Significant Ecological Areas (SEAs). Daryl Koutnik of ESA PCR supervised the preparation of this report.

## **Project Applicant:**

University of Southern California  
3335 South Figueroa St, Unit G  
Los Angeles, CA 90007  
Contact: Mr. Brian League

## **1.1 PROJECT DESCRIPTION**

This report presents the findings of a Biological Constraints Analysis (BCA) conducted by **ESA PCR** for the 107.5-acre Santa Catalina Island Land Division, incorporating the Wrigley Marine Science Center (WMSC) in the Two Harbors village, Los Angeles County, California (project site). The project site is proposed to create eight lots (project), a portion of which contains the existing WMSC, which is a research center and teaching facility maintained by University of Southern California (USC) Wrigley Institute for Environmental Studies for use by USC faculty and students, researchers from other universities, conference organizers, and a variety of educational groups. The purpose of this report is to provide the USC Department of Real Estate and Asset Management an inventory of biological resources, including a preliminary jurisdictional analysis, consistent with the requirements of the Biological Constraints Analysis (BCA) Checklist and Recommendations of the Los Angeles County for the consideration of the Significant Ecological Areas Technical Advisory Committee (SEATAC). Only the subdivision of the 107.5 acres into eight lots is proposed and no use change or new development is proposed for the WMSC or the surrounding areas within the project site. The disturbance or removal of vegetation is not proposed. The proposed sizes of the eight parcels of the tentative tract map are Parcel 1 23.3 acres, Parcel 2 11.8 acres, Parcel 3 13.3 acres, Parcel 4 8.8 acres, Parcel 5 5.5 acres, Parcel 6 22.1 acres, Parcel 7 14.0 acres and Parcel 8 8.7 acres (**Figure 2**, *Tentative Tract Map*). Although the County tax parcels APN 7480-040-025 and APN 7480-040-013, in addition to the existing WMSC parcel (APN 7480-040-026), total 844.0 acres, only 107.5 acres are part of the current land division application with the other 736.5 acres as two Remainder parcels, which are not included in the proposed 8-parcel tract map (TR074099).

County Tax Parcel	Parcel Acreage	Project Parcel Acreage
7480-040-026	14.3 acres	14.3 acres
7480-040-025	506.9 acres	74.9 acres
7480-040-013	322.8 acres	18.3 acres

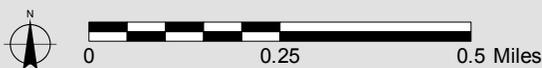
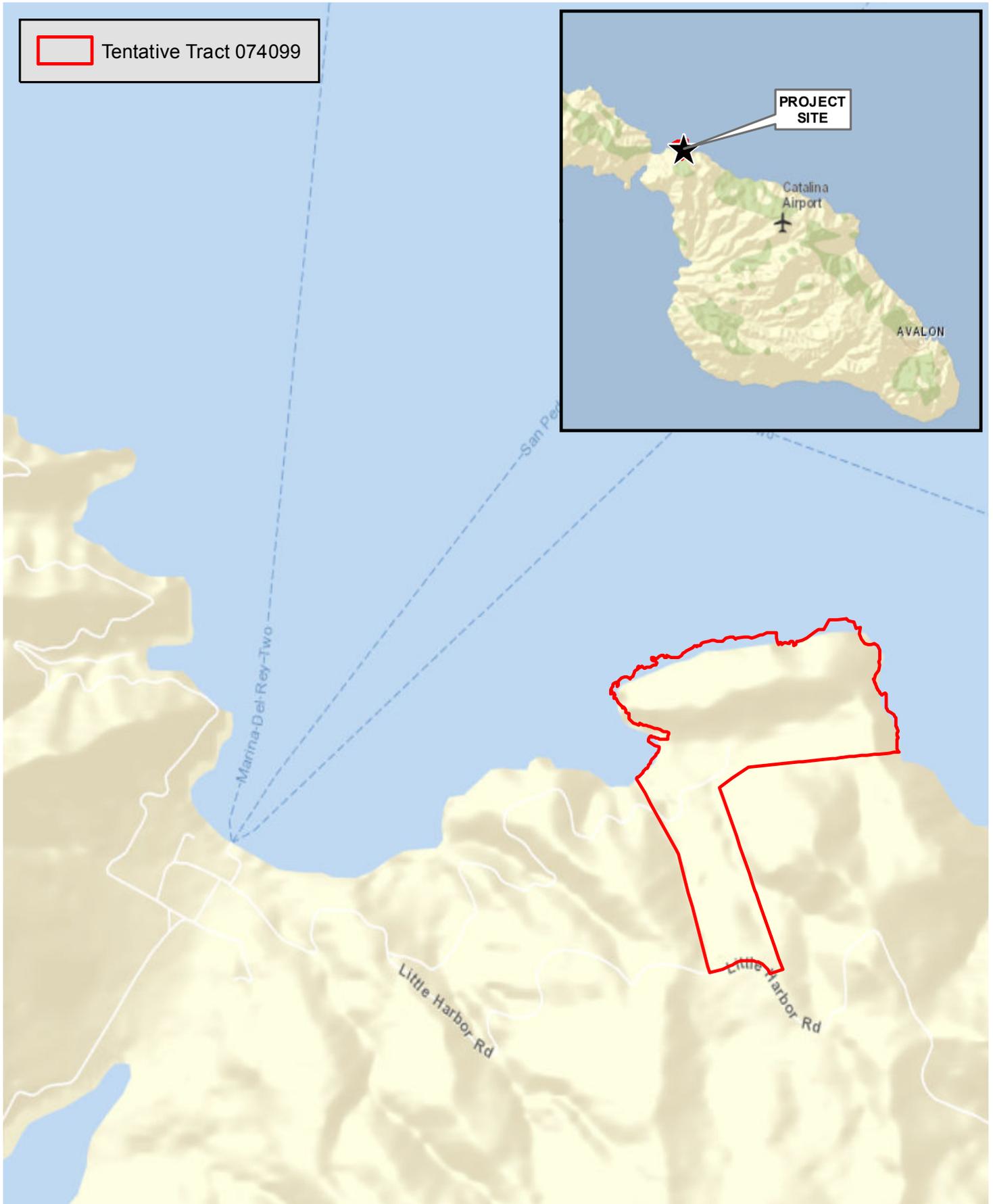
The County of Los Angeles Department of Planning requires a community-level BCA as part of the Initial Study environmental review process when a proposed development project is to be located in an area within:

- a. a Significant Ecological Area (SEA); or
- b. an Environmentally Sensitive Habitat Area (ESHA).

This report is based on information compiled through field reconnaissance and appropriate literature reference materials. Field surveys included a general biological survey, vegetation mapping, and a focused survey for sensitive plant species. The information sources used in preparation of this report are provided throughout the document.

## 1.2 PROJECT SITE LOCATION

Santa Catalina Island is approximately 22 miles southwest of the Palos Verdes Peninsula at its closest approach to the mainland. The WMSC facility currently occupies approximately 7.8 acres and the Project proposes to subdivide 107.5 acres (**Figure 3, Aerial Photograph**). The WMSC is located in Fisherman's Cove, less than one mile east of Isthmus Cove, on the island's northeast facing shore. An east-west trending portion of the project site is in a valley crossing the peninsula from Blue Cavern Point (an SEA) on the east and to Fisherman's Cove on the west. The Blue Cavern Point SEA occupies the easternmost portion of the project site. From Fisherman's Cove, the project site extends to the south, ascending a flattened ridgeline toward Summit Reservoir. Further up the slope toward the peak is the Upper Isthmus Canyon SEA, which is not part of the project site but is contained within parcel APN 7480-040-025. The project site can be found on the U.S. Geological Survey (USGS) 7.5 minute Santa Catalina North topographic quadrangle.



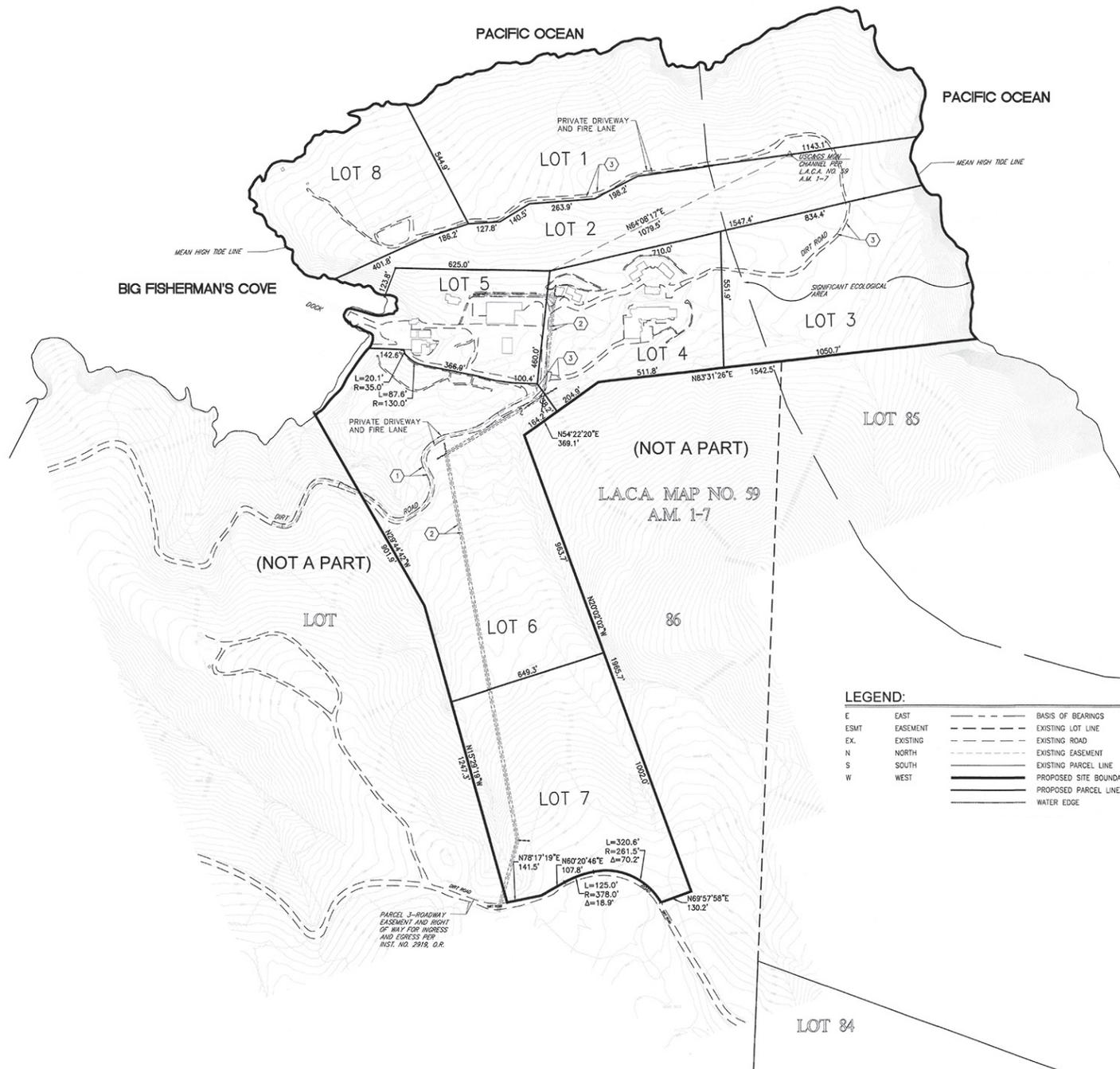
**Regional Location and  
Project Vicinity Map**

Tentative Tract No. 074099

Source: ESRI Street Map, 2010; PCR Services Corporation, 2016.

FIGURE

**1**



**LEGEND:**

E	EAST	---	BASIS OF BEARINGS
ESMT	EASEMENT	---	EXISTING LOT LINE
EX	EXISTING	---	EXISTING ROAD
N	NORTH	---	EXISTING EASEMENT
S	SOUTH	---	EXISTING PARCEL LINE
W	WEST	---	PROPOSED SITE BOUNDARY
		---	PROPOSED PARCEL LINE
		---	WATER EDGE



### Tentative Tract Map

Tentative Tract Map No. 074099  
Source: Fuscoe Engineering, 2016.

FIGURE  
**2**



Tentative Tract 074099



Google™



0 500 1,000 Feet

### Aerial Photograph

Tentative Tract No. 074099

Source: Google Maps, 2015 (Aerial); PCR Services Corporation, 2016.

FIGURE

**3**

### 1.3 NATURAL GEOGRAPHIC FEATURES

The ridges to the north, east and west of the project site and the eastern portion of the project site lie on middle Miocene (12-15 million years ago) aged volcanic rocks, primarily andesite and dacite (Rowland, 1984). Where the sub-surface rocks formed during a 3-4 million year episode of active surface volcanism are exposed, as along the shorelines in Fisherman Cove and on the eastern shoreline, multiple layers of hardened lava and other extrusive deposits are visible. Wave action to this formation is responsible for its erosion into the sea caves of the Blue Cavern Point SEA. The valley in which the southern arm of the project site extends is unconsolidated

#### 1.3.1 Drainage and Wetland Features

#### 1.3.2 Soils

Mapped soils in the project site are shown in **Figure 4, Soils Map**, and included three soil types as follows (NRCS, 2015):

- Dewpoint-Luff association, 15 to 45 percent slopes
- Purser-Luff complex, 15 to 35 percent slopes
- Purser-Rock outcrop complex, 45 to 75 percent slopes, coastal cliffs

Dewpoint-Luff association has a soil profile of slightly decomposed plant material from 0 to 1 inch, silt loam from 1 to 2 inches, clay from 2 to 24 inches, silty clay loam from 24 to 29 inches, and bedrock at 29 to 50 inches. The parent material is volcanic breccia, andesite or basalt. Purser-Luff complex has a soil profile of clay loam from 0 to 2 inches, clay from 2 to 15 inches and bedrock at 15 to 24 inches. The parent material is volcanic rock and andesite. Purser-Rock outcrop complex has a soil profile of loam from 0 to 4 inches, clay loam from 4 to 10 inches, clay from 10 to 14 inches, and bedrock at 14 to 24 inches. The parent material is volcanic rock and andesite.

#### 1.3.3 Vegetation Communities

A total of 21 vegetation communities or land use categories were mapped on the project site, including communities dominated by native and non-native species and communities that primarily lacked vegetation. Coast prickly pear shrubland is the most common plant community within the Project site. Other plant communities include: California sagebrush scrub, California sagebrush scrub/non-native grassland, California sagebrush/purple needle grass grassland, purple needle grass grassland/non-native grassland, non-native grassland, non-native grassland/maritime succulent scrub, toyon chaparral/disturbed, disturbed/coast prickly pear shrubland, and Harding grass sward. Sensitive plant communities on the Project site include: alkali heath marsh, Catalina cherry chaparral, island scrub oak chaparral, lemonade berry scrub, maritime succulent scrub, purple needle grass grassland, and toyon chaparral. Other land use categories include: ruderal vegetation, developed/ornamental areas, disturbed areas, beach and open water.

### 1.3.4 SEA Criteria and Resources

The Project site contains the Blue Cavern Point SEA and portions of the Upper Isthmus Canyon SEA, **Figure 5, Significant Ecological Areas Map**. The Thorne report (1976) describes the Blue Cavern Point SEA as being “especially noteworthy because of the sea-bluff succulent scrub and the grasslands covering the channel slopes. Because of the Marine Laboratory fence, the goats have been denied access to the area, and numerous species are coming back and thriving there that previously were controlled by the feral animals.” Noteworthy species highlighted by Thorne include: *Constancea (Eriophyllum) nevinii*, *Leptosyne (Coreopsis) gigantea*, *Deinandra (Hemizonia) clementina*, *Dudleya virens ssp. hassei*, *D. virens ssp. insularis*, *Eriogonum giganteum var. giganteum*, and *E. grande var. grande*. There is no description of the Upper Isthmus Canyon SEA in the 1976 Thorne report.

The Santa Catalina Island SEAs were not part of the original England & Nelson Environmental Consultants Significant Ecological Areas report (1976). Instead, the Catalina SEAs were based on areas of botanical significance as determined by Robert Thorne in his 1976 Conservation and Management of the Natural Flora of Santa Catalina Island report prepared for the Center for Natural Areas. Those SEA boundaries were drawn by Dr. Thorne on USGS topographic maps based on the known recorded occurrences of the sensitive botanical resources on the Island.

In 2000, PCR Services Corporation completed the Los Angeles County Significant Ecological Area Update Study 2000. The six selection criteria used in determining which areas qualify for SEA designation are:

1. The habitat of core populations of Endangered or Threatened plant or animal species;
2. Biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution on a regional basis;
3. Biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution within Los Angeles County;
4. Habitat that at some point in the life cycle of a species or group of species serves as concentrated breeding, feeding, resting, or migrating grounds, and is limited in availability either regionally or in Los Angeles County;
5. Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community;
6. Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in Los Angeles County.

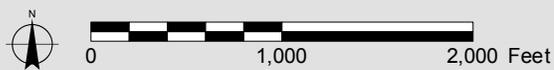
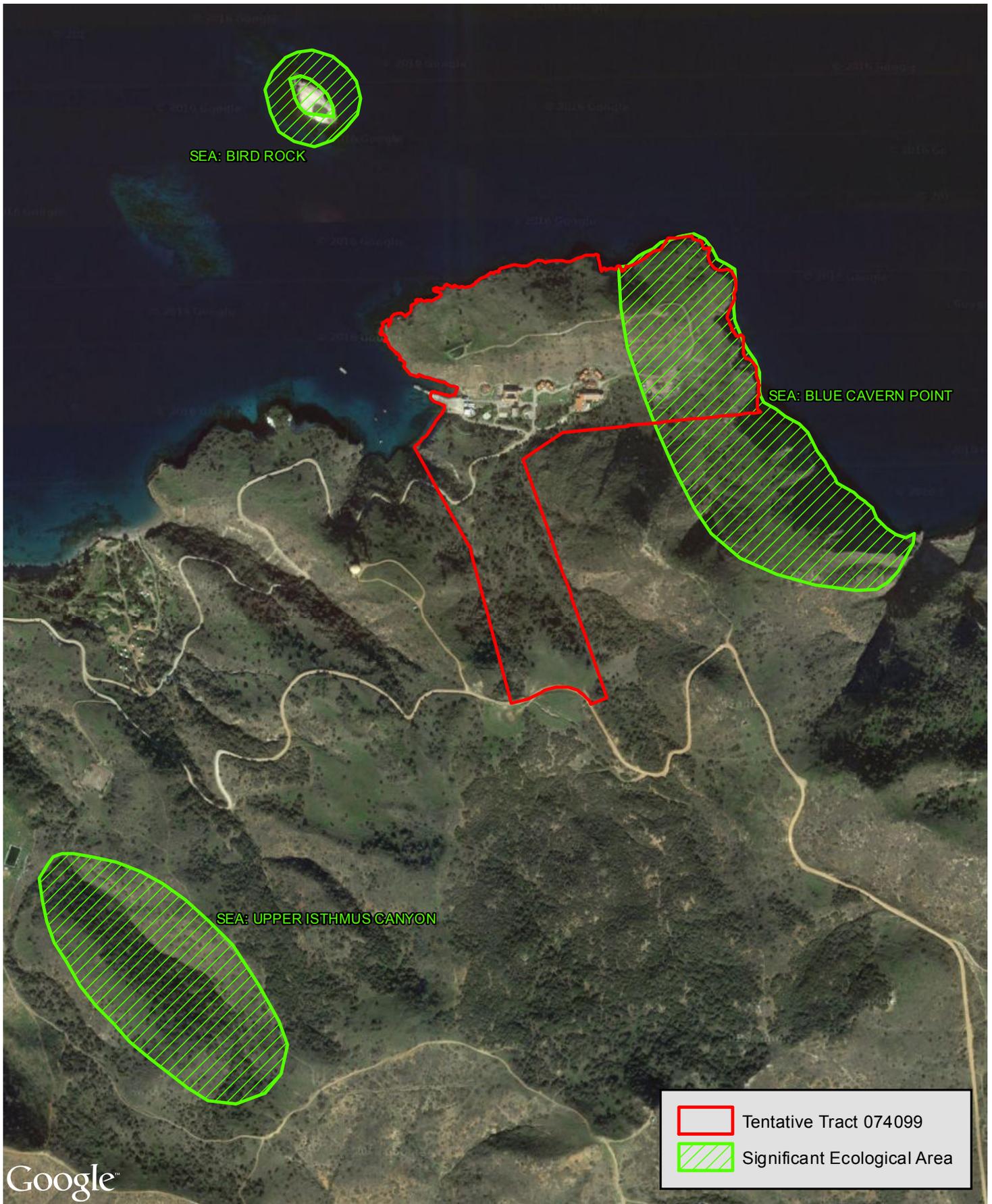
Santa Catalina Island is considered to meet all of the above selection criteria for designation as an SEA. Santa Catalina Island contains populations of endemic species, including Endangered or Threatened species; several plant communities on Santa Catalina Island have restricted distributions in Southern California and Los Angeles County; Santa Catalina Island presumably serves as a concentrated resting and feeding area for marine mammals and coastal nesting sea birds; several of the plant communities on Santa Catalina Island are unique in their species assemblage and represent geographic limits of the community; and Santa Catalina Island encompasses many, mostly undisturbed examples of the original island community types including maritime succulent scrub, southern coastal bluff scrub, island chaparral; island oak woodland, island ironwood forest, and island cherry woodland.

Santa Catalina Island became a Coastal Resource Area (CRA) with the adoption of the County’s General Plan Update in 2015. The description of the Santa Catalina Island CRA in the General Plan states that there are 37 designated SEAs on the island: Arrow Point; Avalon Canyon; Toyon Canyon; Ben Weston Beach-Mills

Landing-Sentinel Rock; Bird Rock; Black Point, Black Jack Mountain and Echo Lake; Blue Cavern Point-Fisherman's Cove; Buffalo Springs Reservoirs; Bulrush Canyon; Cactus Peak; Cape Canyon; Cherry Valley; Cottonwood Canyon; Descanso Canyon; Fourth of July Cove; Gallagher Canyon; Geiger Coves; Haypress Area-Hamilton Canyon; Indian Rock; Isthmus; Isthmus Canyon; Johnsons Landing; Little Harbor-Shark Harbor-Indian Head Point; Middle Ranch Canyon; Mount Orizaba; Parsons Landing; Pebbly Beach Canyon; Renton Mine Road; Silver Peak; Skull Canyon; Sweetwater Canyon; White Cove; and Wild Boar Gully.

Although the General Plan Update CRA designation would ordinarily exempt a property from the SEA considerations, the General Plan Update designation is superseded on Santa Catalina Island by the County and Coastal Commission's certification of the Santa Catalina Island Specific Plan in 1983 (County Planning and Zoning Code 22.46.050-22.46.750) part of the County's State-mandated local coastal program. The Santa Catalina Island Specific Plan recognizes the previous SEA boundaries, for which the Planning and Zoning Code 22.56.215.A requires a conditional use permit (SEA-CUP) for the approval of a subdivision when the property contains an SEA.





**Significant Ecological Areas Map**

Tentative Tract No. 074099

Source: Google Maps, 2015 (Aerial); PCR Services Corporation, 2016.

FIGURE

**5**

## **2.0 METHODOLOGY OF BIOLOGICAL SURVEYS**

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## 2.0 METHODOLOGY OF BIOLOGICAL SURVEYS

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### 2.1 APPROACH

This BCA is based on information compiled through field reconnaissance and appropriate reference materials. Surveys included a general biological survey and vegetation mapping and a focused survey for sensitive plant species.

### 2.2 LITERATURE REVIEW

Assessment of the project began with a review of relevant literature on the biological resources of the project site and surrounding vicinity. The California Natural Diversity Database (CNDDB), a California Department of Fish and Wildlife<sup>1</sup> (CDFW) species account database, was reviewed for all pertinent information regarding the localities of known observations of sensitive species and habitats in the vicinity of the project site (CDFW, 2013). The vicinity of the project site included the following USGS topographic quadrangles: Santa Catalina East, Santa Catalina South, and Santa Catalina West. Federal register listings, protocols, and species data provided by the United States Fish and Wildlife Service (USFWS) (USFWS, 2013a), CDFW and the California Native Plant Society (CNPS, 2013) were reviewed in conjunction with anticipated Federally and State listed species potentially occurring within the vicinity. Other data sources reviewed include United States Department of Agriculture Natural Resources Conservation Service (NRCS) soils mapping (NRCS, 2015). A list of all relevant references reviewed is included in Section 6.0, *References*.

### 2.3 FIELD INVESTIGATIONS

A general biological survey, vegetation mapping, and a focused survey for sensitive plant species was conducted by PCR senior biologist Ezekiel Cooley and Bob Huttar on May 6 and 7, 2014 and a delineation of jurisdictional waters and wetlands was conducted by biologist Zeke Cooley on May 6, 2014 to identify the presence of drainages and/or wetland features. The observed vegetation communities, jurisdictional features, and other biological features or species observations of interest were mapped on aerial photographs. Survey coverage of the entire project site was ensured using the aerial photographs, with special attention to sensitive habitats or those areas potentially supporting sensitive flora or fauna. It should be noted that the Project site north of the existing WMSC, proposed parcels 1 and 8, was not surveyed in the same detail as the remainder of the Project site because no new development is proposed in that area and the area will not be under the control of the applicant. During the course of all field visits, an inventory of plant and wildlife species observed was compiled and species observed are listed in **Appendix A, *Floral and Faunal Compendium***. The methods for these field investigations are described in detail below and summarized in **Table 1, *Summary of Field Investigations***.

Appendix D contains the resumes of the biologists participating in the preparation of this report.

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<sup>1</sup> As of January 1, 2013, the former California Department of Fish and Game name has been changed to the California Department of Fish and Wildlife.

### 2.3.1 Plant Community Mapping

**Table 1**  
**Summary of Field Investigations**

Survey	Dates	Surveyors
Vegetation Mapping	May 6 & 7, 2014	E. Cooley, B. Huttar
Sensitive Plants Focused Surveys	May 6 & 7, 2014	E. Cooley, B. Huttar
Jurisdictional Waters Investigation	May 6, 2014	E. Cooley

Source: PCR Services Corporation, 2014

Plant communities were mapped directly in the field utilizing a 125-scale (1"=125') aerial photograph focusing on dominant plant species. Plant community names, codes, and descriptions follow *A Manual of California Vegetation, Second Edition* (Sawyer, Keeler-Wolf, and Evens, 2009). Herein the codes are referred to as MCV (Manual of California Vegetation) codes. After completing the fieldwork, the plant community polygons were digitized using Geographic Information System (GIS) technology to calculate acreages.

### 2.3.2 General Plant Inventory

All plant species observed during the general and focused surveys were either identified in the field or collected and later identified using taxonomic keys. Plant taxonomy follows Baldwin (2012). Common plant names, when not available from Baldwin, were taken from Munz (1974) and/or Clarke et al (2007). Since common names vary significantly between references, scientific names are included upon initial mention of each species; common names consistent throughout the report are employed thereafter. All plant species observed were recorded in field notes and are listed in **Appendix A**. Sensitive plant species are discussed below in section 2.3.3, *Sensitive Plant Species*.

### 2.3.3 Sensitive Plant Species

Focused sensitive plant surveys were conducted following published agency guidelines (CDFW, 2009; CDFW, 2000; USFWS, 2000) by walking transects, where feasible, and making close observations at ground level during the respective blooming periods of potential plant species to ensure detection of the sensitive plants. The potential for sensitive plant species was assessed based upon the known occurrence of species in the area as identified from CDFW, USFWS and CNPS databases (see section 2.2, *Literature Review*), and the presence or absence of suitable habitat within the Project site based on plant community mapping (see Section 3.3.1, *Plant Community Mapping*). Suitable habitat was defined as areas with appropriate vegetation communities, soils and/or topography (elevation at MSL) to support the species based on known occurrences in those habitats and/or CDFW and CNPS documented habitat descriptions for the species. The definitions of suitable habitat were then compared against the vegetation mapping conducted for the project site and local knowledge. A table of sensitive plant species for which potentially suitable habitat occurs

within the project site was prepared, and the potential for occurrence for each species was determined and updated following completion of the focused survey. The potential for occurrence of each species is summarized in **Appendix B**, *Sensitive Plant Species*.

### 2.3.4 General Wildlife Inventory

All wildlife species observed within the project site, as well as any diagnostic sign (call, tracks, nests, scat, remains, or other sign), were recorded in field notes. Binoculars and regional field guides were utilized for the identification of wildlife, as necessary. Wildlife taxonomy follows Stebbins (2003) and California Herps (2015) for amphibians and reptiles, the American Ornithologists' Union (1998) for birds, and Jameson and Peeters (1988) for mammals. Since common names vary significantly between references, scientific names are included upon initial mention of each species; common names consistent throughout the report are employed thereafter. All wildlife species detected were recorded in field notes and are listed in **Appendix A**. Sensitive wildlife species are discussed below in section 2.3.5, *Sensitive Wildlife Species*.

### 2.3.5 Sensitive Wildlife Species

The potential for sensitive wildlife species was assessed based upon the known occurrence of species in the area as identified from CDFW and USFWS databases (see section 2.2, *Literature Review*), and the presence or absence of suitable habitat within the project site based on plant community mapping (see section 2.3.1, *Plant Community Mapping*). Suitable habitat was defined as areas with appropriate vegetation communities and/or topography (elevation at MSL) to support the species based on known occurrences in those habitats and/or CDFW and USFWS documented habitat descriptions for the species. The definitions of suitable habitat were then compared against the vegetation mapping conducted for the project site and local knowledge. A table of sensitive wildlife species for which potentially suitable habitat occurs within the project site was prepared, and the potential for occurrence for each species was determined and updated following completion of the general biological survey. The potential for occurrence for each species is summarized in **Appendix C**, *Sensitive Wildlife Species*

### 2.3.6 Wildlife Movement

An analysis of wildlife movement was conducted based on information compiled from the literature, analysis of aerial photographs and topographic maps, direct observations made in the field during survey work, and an analysis of existing wildlife movement functions. Relative to corridor issues, the focus of this assessment was to determine if the change of the existing land use within the project site would have significant impacts. The South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion document was reviewed as a general background reference (South Coast Wildlands, 2008).

## **3.0 BIOLOGICAL CHARACTERISTICS OF THE SITE**

## 3.0 BIOLOGICAL CHARACTERISTICS OF THE SITE

### 3.1 PLANT COMMUNITIES

Descriptions of each of the plant communities found within the project site and off-site areas with MCV codes are provided below, and locations of each of the plant communities are shown in **Figure 6, Plant Communities**. Sensitive plant communities are denoted with an asterisk. **Table 2, Plant Communities**, lists each of the plant communities observed, as well as the acreage within the project site. Representative photographs of plant communities found within the project site are included in **Figure 7a, Site Photographs** and **Figure 7b, Site Photographs**.

**Table 2**

**Plant Communities**

Plant Community	Acres
Alkali Heath Marsh	0.43
Catalina Cherry Chaparral	0.77
Coast Prickly Pear Scrubland	34.79
California Sagebrush Scrub	14.61
California Sagebrush Scrub/Non-native Grassland	0.93
California Sagebrush Scrub/Purple Needle Grass Grassland	1.28
Disturbed/Coast Prickly Pear Scrubland	0.44
Harding Grass Sward	0.31
Island Scrub Oak Chaparral	5.29
Lemonade Berry Scrub	2.72
Maritime Succulent Scrub	3.10
Purple Needle Grass Grassland	4.17
Purple Needle Grass Grassland/Non-native Grassland	2.22
Toyon Chaparral	11.16
Toyon Chaparral/Disturbed	0.32
Developed/Ornamental	8.61
Disturbed	3.04
Non-native Grassland	11.13
Non-native Grassland/Maritime Succulent Scrub	0.12
Ruderal	0.79
Beach	0.56
Open Water	0.74
<b>Total</b>	<b>107.53</b>

*Source: PCR Services Corporation, 2016.*

### 3.1.1 Alkali Heath Marsh (\*52.500.00)

Alkali heath marsh is a sensitive plant community (see section 3.4.2 below) dominated by alkali heath (*Frankenia salina*). This salt marsh community is frequently found in coastal California, inland Central Valley, and central Mojave Desert. Alkali heath marsh occurs in ephemerally moist, saline soils intermixed with other halophytic plant species. On the project site, the soils are less moist as might be found in coastal settings and provides more of a meadow than marsh habitat. Associated species observed in this community on the project site included common knotweed (*Polygonum arenastrum*), glaucous foxtail barley (*Hordeum murinum*), ripgut (*Bromus diandrus*), and slender-leaved iceplant (*Mesembryanthemum nodiflorum*). There are two small patches of alkali heath marsh on the northern portion of the project site in proximity to existing WMSC buildings, which occupies approximately 0.43 acres.

### 3.1.2 Catalina Cherry Chaparral (\*37.910.04)

Catalina cherry chaparral is a sensitive plant community (see section 3.4.2 below) dominated by Catalina cherry (*Prunus ilicifolia* ssp. *lyonii*). This community grows on steep, typically north-facing slopes in stands intermixed with other woody shrubs, such as black sage (*Salvia mellifera*), California sagebrush (*Artemisia californica*), and toyon (*Heteromeles arbutifolia*). Associated species observed in this community on the project site included California sagebrush and toyon while the understory was composed of non-native grasses such as false-brome (*Festuca bromoides*), glaucous foxtail barley, Italian ryegrass (*Festuca perennis*), and wild oat (*Avena fatua*). A linear patch of Catalina cherry chaparral is present along the northeastern boundary of the project site, which occupies approximately 0.77 acres.

### 3.1.3 Coast Prickly Pear Shrubland (\*32.150.00)

Coast prickly pear shrubland community is a sensitive plant community (see section 3.4.2 below) dominated by coastal prickly pear (*Opuntia littoralis*) and/or other cactus species intermixed with woody shrubs, such as California sagebrush and California buckwheat (*Eriogonum fasciculatum*). This community is primarily found growing on south-facing, occasionally rocky, slopes with loam or clay soils. Coast prickly pear shrubland is the dominant vegetation community throughout the project site, occurring in the majority of the northern portion. Associated species observed in this community on the project site included California encelia (*Encelia californica*), California sagebrush, giant coreopsis (*Leptosyne gigantea*), and sweet fennel (*Foeniculum vulgare*). A linear patch of coast prickly pear shrubland lays parallel to the Catalina cherry chaparral community along the northeastern boundary of the project site, which comprises approximately 34.79 acres.

### 3.1.4 California Sagebrush Scrub (32.010.01)

California sagebrush scrub is a low scrubland plant community found in the coastal ecoregion of California and northern Baja California. This community is dominated by California sagebrush and is typically present on steep, north-facing slopes growing intermixed with other drought-deciduous shrubs adapted to the semi-arid Mediterranean climate of the coastal lowlands. In addition to California sagebrush, associated species included California encelia, California box-thorn (*Lycium californicum*), fascicled tarplant (*Deinandra fasciculata*), and coastal prickly pear. The understory was composed of primarily non-native and/or weedy species such as false-brome and ripgut. This community comprises approximately 14.61 acres of the project site.

### 3.1.5 California Sagebrush Scrub/Non-native Grassland (32.010.00)

This community is dominated by California sagebrush and non-native grassland is a subdominant community. The California sagebrush scrub component of this vegetation community is consistent with the species described in section 3.1.4 above. The non-native grassland component is comparable to the description in section 3.1.17 below, comprised primarily of non-native grasses such as barley (*Hordeum vulgare*), false-brome, foxtail chess (*Bromus madritensis ssp. rubens*), glaucous foxtail barley, Italian ryegrass, and wild oat. There is an isolated patch of California sagebrush scrub/non-native grassland directly east of the main road in the north central portion of the project site. This community occupies approximately 0.93 acre of the project site.

### 3.1.6 California Sagebrush Scrub/Purple Needle Grass Grassland (32.010.00)

This community is dominated by California sagebrush and purple needle grass grassland is a subdominant community. The California sagebrush scrub component of this vegetation community is consistent with the species described in section 3.1.4 above and the purple needle grass grassland component is comparable to the description in section 3.1.11 below. There are two patches of California sagebrush scrub/purple needle grass grassland south of the main road in the western portion of the project site, which comprises approximately 1.28 acres.

### 3.1.7 Harding Grass Sward (42.051.02)

Harding grass sward community is dominated by the introduced grass, Harding grass (*Phalaris aquatica*), and is found in a variety of habitats, including wet and dry soil conditions. Native species diversity is typically low in this community since Harding grass forms thick patches in previously disturbed areas, outcompeting other species for germination. Associated species found in this community were primarily non-native grasses, such as barley, false-brome, foxtail chess, glaucous foxtail barley, Italian ryegrass, and wild oat in addition to scattered individuals of coastal prickly pear. One small patch of Harding grass sward occurs in the eastern portion of the project site proximal to a large disturbed area. This community comprises approximately 0.31 acres of the project site.

### 3.1.8 Island Scrub Oak Chaparral (\*37.416.01)

Island scrub oak chaparral is a sensitive plant community (see section 3.4.2 below) and is dominated by Channel Island scrub oak (*Quercus pacifica*). This community grows on slopes with well-drained soils and is usually found in mixed stands with other woody shrubs, such as chamise (*Adenostoma fasciculatum*), coyote brush (*Baccharis pilularis*), and Catalina manzanita (*Arctostaphylos catalinae*). On the project site, Channel Island scrub oak was found growing with coastal prickly pear, lemonade berry (*Rhus integrifolia*), and toyon. There are three patches of island scrub oak chaparral in the southern portion of the project site, which occupies approximately 5.29 acres.

### 3.1.9 Lemonade Berry Scrub (\*37.803.01)

Lemonade berry scrub is a sensitive plant community (see section 3.4.2 below) and is dominated by lemonade berry. This community grows on inland slopes and coastal bluffs with loamy or clayey soils and is found in mixed stands with other woody shrubs, such as California encelia, California sagebrush, and chamise. In addition to lemonade berry, California encelia, California sagebrush, holly-leaf redberry (*Rhamnus ilicifolia*), and toyon were found growing in this community. There is one patch of lemonade berry scrub in the northeast corner of the project site, which comprises approximately 2.72 acres.

### **3.1.10 Maritime Succulent Scrub (\*32400 Holland)**

Maritime succulent scrub is a sensitive plant community (see section 3.4.2 below) and is dominated by drought deciduous shrubs with a mixture of stem and leaf succulents, including coastal prickly pear and Catalina Island dudleya (*Dudleya virens* ssp. *hassei*). This community grows on coastal bluffs with rocky or sandy soils and is found in mixed stands with other woody shrubs, such as California encelia, California sagebrush, and lemonade berry. Similar to coast prickly pear shrubland, this community occurs on several locations but typically adjacent to coast bluffs. Maritime succulent scrub occupies approximately 3.10 acres.

### **3.1.11 Purple Needle Grass Grassland (\*41.150.04)**

Purple needle grass grassland is a sensitive plant community (see section 3.4.2 below) and is dominated by the perennial tussock-forming purple needle grass (*Stipa pulchra*). Other native and introduced plants found with the purple needle grass included coastal prickly pear, common goldenstar (*Bloomeria crocea*), common yarrow (*Achillea millefolium*), and sweet fennel. Seven patches of purple needle grass grassland are scattered throughout the project site and occupy approximately 4.17 acres.

### **3.1.12 Purple Needle Grass Grassland/Non-native Grassland (\*41.150.00)**

Purple needle grass grassland/non-native grassland is dominated by purple needle grass grassland and non-native grassland is a subdominant community. The purple needle grass grassland component of this vegetation community was consistent with the species described in section 3.1.11 above and the non-native grassland component was comparable to the description in section 3.1.17 below. There is one patch of purple needle grass grassland/non-native grassland in the northwestern portion of the project site, which comprises 2.22 acres.

### **3.1.13 Toyon Chaparral (\*37.911.00)**

Toyon chaparral is a sensitive plant community (see section 3.4.2 below) and is dominated by toyon and intermixed with other woody shrub species, such as California sagebrush, California buckwheat, and holly-leaved cherry (*Prunus ilicifolia*). This community primarily grows on north-facing slopes with loamy soil. In addition to toyon, California sagebrush, coastal prickly pear, and lemonade berry were observed growing in this community. Thirteen patches of toyon chaparral community are scattered throughout the project site and occupy approximately 11.16 acres.

### **3.1.14 Toyon Chaparral/Disturbed (\*37.911.00)**

This community is dominated by toyon chaparral and subdominant species are those found in the disturbed community. The toyon chaparral component of this vegetation community was consistent with the species described in section 3.1.13 above and the disturbed component was comparable to the description in section 3.1.16 below. Toyon chaparral/disturbed community occupied approximately 0.32 acre of the project site.

### **3.1.15 Developed/Ornamental**

Developed areas consist of man-made structures, which on the project site include mainly the northern areas where existing WMSC facilities and residential housing are located. Within the developed areas, ornamental species were planted throughout the developed areas. Developed/ornamental areas occupied approximately 8.61 acres of the project site.

### 3.1.16 Disturbed

Disturbed areas consist of regularly maintained areas that are sparsely vegetated primarily by non-native plant species, including barley, black mustard (*Brassica nigra*), common knotweed, glaucous foxtail barley, Russian thistle (*Salsola kali*), slender-leaved iceplant, sweet fennel, and wild oat. Native plant species established within the disturbed areas included coastal prickly pear and pickleweed (*Salicornia pacifica*). Disturbed areas include roadways throughout the project site and an abandoned area of WMSC in the northeast corner of the project site. Disturbed areas comprise approximately 3.04 acres of the project site.

### 3.1.17 Non-native Grassland (42200 Holland)

Non-native grassland is a semi-natural community of dense to sparse cover of exotic annual grasses, often with native annual forbs (“wildflowers”) and frequently associated with livestock grazing. Within the project site, the dominant grasses were barley, false-brome, foxtail chess, glaucous foxtail barley, Italian ryegrass, and wild oat. The largest area of non-native grassland is in the southern portion of the project site; additionally, there are smaller patches in the northern section proximal to the existing WMSC facilities and residential housing. Non-native grasslands comprised approximately 11.13 acres of the project site.

### 3.1.18 Non-native Grassland/Maritime Succulent Scrub (42200/32400 Holland)

Non-native grassland/maritime succulent scrub is a mixed community of exotic annual grasses, intermixed with elements of maritime succulent scrub species. Within the project site, there is a single location of non-native grassland/maritime succulent scrub near the WMSC pier and comprised approximately 0.12 acres of the project site.

### 3.1.19 Disturbed/Coast Prickly Pear Shrubland

Disturbed/coast prickly pear shrubland area consists of an area of sparsely vegetated coast prickly pear shrubland plant species, but the area exhibits considerably amount of disturbance through adjacency to an existing work area permitted for future residential uses. Native plant species established within the disturbed areas included coastal prickly pear. Disturbed/coast prickly pear shrubland area comprises approximately 0.44 acres of the project site.

### 3.1.20 Ruderal

Ruderal vegetation is found in areas heavily disturbed by human activities, such as roadsides, graded fields, former agricultural areas or dump sites, and frequently the plants are introduced as a consequence of the activity. Within the project site, typical species included many of the brome grasses, common goldenstar, common iceplant (*Mesembryanthemum crystallinum*), fasciated tarplant, slender-leaved iceplant, and wild oat. Ruderal areas are primarily found near the existing WMSC facilities and residential housing and comprise approximately 0.79 acres.

### 3.1.21 Beach

Beach is primarily unvegetated land directly adjacent to the ocean that is composed of sand or cobble. Beach areas are in the northern and western portions of the project site, which comprises approximately 0.56 acres.

### **3.1.22 Open Water**

Open water included portions of the Pacific Ocean in the northeastern and northern portions of the project site, which comprise approximately 0.74 acres.





Photograph 1: View from southwest portion of Tract Map Boundary.



Photograph 2: View form southeast portion of Tract Map Boundary.



Photograph 3: Fisherman's Cove and the Road to Two Harbors.



Photograph 4: Fisherman's Cove and Wrigley Marine Science Center.



Photograph 5: Western Edge of Blue Cavern Point SEA, East of Project site center.



Photograph 6: Eastern Portion of Tract Map, Blue Cavern Point.

## 3.2 GENERAL PLANT INVENTORY

The plant communities discussed above are composed of numerous plant species. Observations regarding the plant species present were made during the field visits to the project site, and a list of all plant species observed is provided in **Appendix A**. Sensitive plant species occurring or potentially occurring within the project site are discussed below in section 3.4, *Sensitive Plant Species*.

## 3.3 GENERAL WILDLIFE INVENTORY

The plant communities discussed above provide habitat for common wildlife species, including the following that were observed: acorn woodpecker (*Melanerpes formicivorus*), American bison (*Bison bison*), American crow (*Corvus brachyrhynchos*), Audobon's cottontail (*Sylvilagus audubonii sanctidiegi*), Bewick's wren (*Thryomanes bewickii*), black phoebe (*Sayornis nigricans*), California quail (*Callipepla californica*), Catalina Beechey ground squirrel (*Spermophilus beecheyi nesioticus*), cliff swallow (*Petrochelidon pyrrhonota*), common raven (*Corvus corax*), European starling (*Sturnus vulgaris*), house finch (*Haemorhous mexicanus*), killdeer (*Charadrius vociferus*), lesser goldfinch (*Spinus psaltria*), mule deer (*Odocoileus hemionus*), northern mockingbird (*Mimus polyglottos*), oak titmouse (*Baeolophus inornatus*), rock pigeon (*Columba livia*), Santa Catalina Island fox (*Urocyon littoralis catalinae*), spotted towhee (*Pipilo maculatus*), western meadowlark (*Sturnella neglecta*), and western tanager (*Piranga ludoviciana*). All native and non-native habitats described in section 3.1 above can potentially provide habitat for these species. Observations regarding the wildlife species present were made during the field visit to the project site, and a list of all species observed is provided in **Appendix A**. Sensitive wildlife species occurring or potentially occurring are discussed below in section 3.5, *Sensitive Wildlife Species*.

## 3.4 SENSITIVE BIOLOGICAL RESOURCES

The following discussion describes the plant and wildlife species present, or potentially present, within the study area that have been afforded special recognition by Federal, State, or local resource conservation agencies and organizations. These species have declining or limited population sizes, usually resulting from habitat loss. Also discussed are habitats that are unique, of relatively limited distribution, or of particular value to wildlife. Protected sensitive species are classified by either Federal or State resource management agencies, or both, as threatened or endangered, under provisions of the Federal and State Endangered Species Acts (FESA and CESA, respectively).

### 3.4.1 Sensitive Resource Classification

#### Federal Protection and Classifications

**FESA:** FESA of 1973 defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of the FESA, unless properly permitted, it is unlawful to "take" any listed species. "Take" is defined in Section 3(18) of FESA: "...harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification as forms of "take." These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species.

All references to Federally-protected species in this report include the most current published status or candidate category to which each species has been assigned by USFWS. Within the last ten years the USFWS instituted changes in the listing status of candidate species abandoning the Category (C) C1/C2 model. Former C1 candidate species are now considered federal candidate species. Some of the USFWS field offices (e.g., Sacramento) maintain lists of federal Species of Concern (FSC). These species receive no legal protection and the use of the term FSC does not mean that they will eventually be proposed for listing.<sup>2</sup> The Carlsbad USFWS Office does not maintain such a list for their jurisdiction, which includes Los Angeles, Orange, Riverside, San Bernardino, Imperial, and San Diego counties. The status of federally listed species is assigned by USFWS as one of the below. For purposes of this assessment the following acronyms are used for Federal status species, as applicable:

- FE Federally-listed as Endangered
- FT Federally-listed as Threatened
- FPE Federally proposed for listing as Endangered
- FPT Federally proposed for listing as Threatened
- FPD Federally proposed for delisting
- FC Federal candidate species (former C1 species)

**Migratory Bird Treaty Act:** The Migratory Bird Treaty Act (MBTA) protects individuals as well as any part, nest, or eggs of any bird listed as migratory. In practice, Federal permits issued for activities that potentially impact migratory birds typically have conditions that require pre-disturbance surveys for nesting birds. In the event nesting is observed, a buffer area with a specified radius must be established, within which no disturbance or intrusion is allowed until the young have fledged and left the nest, or it has been determined that the nest has failed. If not otherwise specified in the permit, the size of the buffer area varies with species and local circumstances (e.g., presence of busy roads, intervening topography, etc.), and is based on the professional judgment of a monitoring biologist.

**Bald and Golden Eagle Protection Act:** The Bald and Golden Eagle Protection Act was originally enacted in 1940 as the Bald Eagle Protection Act to protect bald eagles, and was later amended in 1962 to include golden eagles.<sup>3</sup> The Act prohibits the taking, possession, or commerce in bald and golden eagles, parts, feathers, nests, or eggs with limited exceptions. Take is defined as to “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb”, and includes both direct taking of individuals and take due to disturbance. “Disturb” is defined as:

*to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to any eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.<sup>4</sup>*

The definition of “disturb” is further defined by USFWS as follows:

<sup>2</sup> Sacramento Fish & Wildlife website: [http://sacramento.fws.gov/es/spp\\_concern.htm](http://sacramento.fws.gov/es/spp_concern.htm)

<sup>3</sup> <http://www.fws.gov/midwest/eagle/protect/index.html>

<sup>4</sup> 50 CFR 22.3

*In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering.*<sup>5</sup>

Bald or golden eagles may not be taken for any purpose unless a permit is issued prior to the taking. Activities which can be authorized by permit include scientific collection/research, exhibition, tribal religious (Native American religious), depredation, falconry, and the taking of inactive nests, which interfere with resource development or recovery operations. Currently, USFWS has a permitting process proposed for other activities that would allow disturbance to bald or golden eagles or take of an eagle nest where their location poses a risk to human or eagle safety.

**Federal Clean Water Act, Section 404:** Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged material, placement of fill material, or excavation within “waters of the U.S.” and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. “Waters of the U.S.” are defined by the CWA as “rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands.” Wetlands are defined by the CWA as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.” The permit review process entails an assessment of potentially adverse impacts to U.S. Army Corps of Engineers (USACE) jurisdictional “waters of the U.S.”.

Over the years, the USACE has modified its regulations, typically due to evolving policy or judicial decisions, through the issuance of Regulatory Guidance Letters, memorandums, or more expansive instruction guidebooks. These guidance documents help to update and define how jurisdiction is claimed, and how these waters of the U.S. will be regulated. The most recent, significant modification occurred on June 5, 2007, subsequently updated in December 2008, when the USACE and the U.S. Environmental Protection Agency (EPA) issued a series of guidance documents outlining the requirements and procedures, effective immediately, to establish jurisdiction under Section 404 of the CWA and the Section 10 of the Rivers and Harbors Act of 1899. These documents are intended to be used for all jurisdictional delineations and provide specific guidance for the jurisdictional determination of potentially jurisdictional features affected by the U.S. Supreme Court rulings in *Rapanos v. the United States* and *Carabell v. the United States* 547 U.S. 715 (2006) (jointly referred to as “*Rapanos*”).

The *Rapanos* case outlines the conditions and criteria used by the USACE to assess and claim jurisdiction over non-navigable, ephemeral tributaries. Under a plurality ruling, the Court noted that certain “not relatively permanent” (i.e., ephemeral), non-navigable tributaries must have a “significant nexus” to downstream traditional navigable waters to be jurisdictional. An ephemeral tributary has a significant nexus to downstream navigable “waters” when it has “more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a Traditional Navigable Water (TNW).” A significant nexus is established through the consideration of a variety of hydrologic, geologic and ecological factors specific to the particular drainage feature in question. A significant nexus determination is provided by the USACE to the EPA for the final determination of federal jurisdiction. Drainage features that do not meet the significant nexus criteria based on completion of an USACE/EPA approved final significant nexus determination and/or are determined to be isolated pursuant to the SWANCC ruling (see below) may still be regulated by CDFW

<sup>5</sup> USFWS. 2007. *National Bald Eagle Management Guidelines*

under Fish and Game Code Section 1600 or the Regional Water Quality Control Board (RWQCB) under the Porter-Cologne Water Quality Act.

On January 15, 2003, the USACE and EPA issued a Joint Memorandum to provide clarifying guidance regarding the United States Supreme Court ruling in the *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, No. 99-1178 (January 9, 2001) (“the SWANCC ruling”), (Federal Register: Vol. 68, No. 10.). This ruling held that the CWA does not give the federal government regulatory authority over non-navigable, isolated, intrastate waters. As a result of this decision, some previously regulated depressional areas such as mudflats, sandflats, wetlands, prairie potholes, wet meadows, playa lakes, natural ponds, and vernal pools, which are not hydrologically connected to other intra- or inter-state “waters of the U.S.,” are no longer regulated by the USACE.

**Federal Clean Water Act, Section 401:** The mission of the California Regional Water Quality Control Board is to develop and enforce water quality objectives and implement plans that will best protect the beneficial uses of the State’s waters, recognizing local differences in climate, topography, geology, and hydrology. The California RWQCB is responsible for implementing compliance not only with State codes such as the California Water Code, but also Federal acts such as Section 401 of the CWA which requires that:

*Any applicant for a Federal permit for activities that involve a discharge to waters of the State shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act.*

The RWQCB regulates “discharging waste, or proposing to discharge waste, within any region that could affect “waters of the State” (Water Code § 13260 (a)), pursuant to provisions of the Porter-Cologne Water Quality Control Act which defines RWQCB jurisdictional “waters of the State” as “any surface water or groundwater, including saline waters, within the boundaries of the State” (Water Code § 13050 (e)). Before the USACE will issue a CWA Section 404 permit, applicants must apply for and receive a Section 401 water quality certification (WQC) from the RWQCB.

With the exception of isolated waters and wetlands, the RWQCB typically regulates the same extent of aquatic resources as the USACE. If a CWA Section 404 permit is not required for the project, the RWQCB may still require issuance of Waste Discharge Requirements (WDR) under the Porter-Cologne Water Quality Control Act. The RWQCB may regulate isolated waters that are not under jurisdiction of the USACE through issuance of WDR’s. However, projects that apply for a Section 401 WQC do not need to seek additional WDR issuance for impacts to isolated waters, which can typically be authorized as part of a technically-conditioned WQC. Processing of Section 401 WQC’s generally requires submittal of 1) a sediment and erosion control plan for construction purposes, 2) a final water quality plan concept that complies with recently adopted municipal storm drain permits (MS4 permits) implemented by the State Water Resources Control Board effective January 1, 2011, and 3) a conceptual HMMP to compensate for permanent impacts to RWQCB waters, if any. In addition to submittal of a draft CEQA document, a WQC application typically requires a discussion of construction and post-construction Best Management Practices (BMP) function and maintenance, avoidance and minimization of impacts to RWQCB jurisdictional resources, and efforts to protect beneficial uses as defined by the local RWQCB basin plan for the project. The RWQCB cannot issue a Section 401 WQC until the project CEQA document is certified by the lead agency.

## State of California Protection and Classifications

**CESA:** CESA defines an endangered species as:

*...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.*

The State defines a threatened species as:

*...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species.*

Candidate species are defined as:

*...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list.*

Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species.

Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened or endangered species by stating:

*...no person shall import into this State, export out of this State, or take, possess, purchase, or sell within this State, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided.*

Under the CESA, “take” is defined as, “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.”

Additionally, some sensitive mammals and birds are protected by the State as Fully Protected Mammals or Fully Protected Birds, as described in the California Fish and Game Code, Sections 4700 and 3511, respectively.

California Species of Special Concern are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. Informally listed species are not protected per se, but warrant consideration in the preparation of biological assessments. For some species, the CNDDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest areas.

For the purposes of this assessment, the following acronyms are used for State status species, as applicable:

- SE State-listed as Endangered
- ST State-listed as Threatened
- SR State-listed as Rare
- SCE State candidate for listing as Endangered
- SCT State candidate for listing as Threatened
- SFP State Fully Protected
- SSC California Species of Special Concern

**Protection of Birds:** Section 3503.5 of the California Fish and Game Code states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Activities that result in the abandonment of an active bird of prey nest may also be considered in violation of this code. In addition, California Fish and Game Code, Section 3511 prohibits the taking of any bird listed as fully protected, and California Fish and Game Code, Section 3515 states that it is unlawful to take any non-game migratory bird protected under the MBTA.

**State of California Fish and Game Code, Section 1602:** Section 1602 of the California Fish and Game Code requires any entity (e.g., person, state or local government agency, or public utility) who proposes a project that will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake to notify the CDFW of the proposed project. In the course of this notification process, the CDFW will review the proposed project as it affects streambed habitats within the project area. The CDFW may then place conditions in the Section 1602 Streambed Alteration Agreement to avoid, minimize, and mitigate any potentially significant adverse impacts within CDFW jurisdictional limits.

### California Native Plant Society

The CNPS is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in California. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California (CNPS, 2012). The list serves as the candidate list for listing as Threatened and Endangered by CDFW. CNPS has developed six categories of rarity, of which Ranks 1A, 1B, 2A, and 2B are particularly considered sensitive:

- Rank 1A Plants Presumed extirpated in California and either Rare or Extinct elsewhere.
- Rank 1B Plants Rare, Threatened, or Endangered in California and elsewhere.
- Rank 2A Plants Presumed extirpated in California, but common elsewhere.
- Rank 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere.
- Rank 3 Plants about which more information is needed – a review list.
- Rank 4 Plants of limited distribution – a watch list.

The CNPS recently added “threat ranks” which parallel the ranks used by the CNDDDB. These ranks are added as a decimal code after the CNPS Rank (e.g., Rank 1B.1). The threat codes are as follows:

- .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);
- .3 – Not very threatened in California (<20% of occurrences threatened or no current threats known).

Sensitive species that occur or potentially could occur within the study area are based on one or more of the following: (1) the direct observation of the species within the study area during any field surveys; (2) a record reported in the CNDDDB; and (3) the study area is within known distribution of a species and contains appropriate habitat.

### 3.4.2 Sensitive Plant Communities

Nine sensitive native plant communities totaling 64.65 acres occur on-site, including alkali heath marsh (0.43 acres), Catalina cherry chaparral (0.77 acres), island scrub oak chaparral (5.29 acres), lemonade berry scrub (2.72 acres), coast prickly pear shrubland (34.79 acres), maritime succulent scrub (3.10 acres), purple needle grass grassland (4.17 acres), purple needle grass grassland/non-native grassland (2.22 acres), and toyon chaparral (11.16 acres). These communities are considered sensitive by CDFW based on their List of California Terrestrial Natural Communities.<sup>6</sup> Natural community elements or vegetation types are considered of special concern when their State rarity rank is listed as S1-S3. These communities are designated by an asterisk as high priority in the CDFW list. These communities may be perceived as declining but are not officially regarded as "sensitive" yet. None of the other plant communities on the project site are considered sensitive pursuant to State or Federal regulations.

### 3.4.3 Sensitive Plant Species

Sensitive plants include those listed, or candidates for listing, by the USFWS and CDFW; and species considered sensitive by the CNPS (particularly Lists 1A, 1B, and 2). Several sensitive plant species were reported in the vicinity based on CNDDDB and CNPS, totaling 67 species within the 4-quadrangle<sup>7</sup> search (as indicated in **Appendix B, Sensitive Plant Species**). A total of 37 species were identified as having a potential to occur within the project site based on the literature review and habitat on the project site, including aphanisma (*Aphanisma blitoides*), beach spectaclepod (*Dithyrea maritima*), bright green dudleya (*Dudleya virens* ssp. *virens*), California box-thorn, California dissanthelium (*Dissanthelium californicum*), Catalina crossosoma (*Crossosoma californicum*), Catalina Island dudleya (*Dudleya virens* ssp. *hassei*), Catalina Island mountain-mahogany (*Cercocarpus traskiae*), Catalina mariposa lily (*Calochortus catalinae*), cliff spurge (*Euphorbia misera*), Coulter’s saltbush (*Atriplex coulteri*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), golden-spined cereus (*Bergerocactus emoryi*), island buckwheat (*Eriogonum grande* var. *grande*), island broom (*Acmispon dendroideus* var. *dendroideus*), island green dudleya (*Dudleya virens* ssp.

<sup>6</sup> Available online at: [http://www.dfg.ca.gov/biogeodata/vegcamp/natural\\_comm\\_list.asp](http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_list.asp). Sensitive (also referred to by CDFW as ‘rare’ or ‘special status’) natural communities are asterisked on the list.

<sup>7</sup> A 4-quadrangle search was used as opposed to a 9-quadrangle search since there are four quadrangles applicable to Santa Catalina Island.

*insularis*), island oak (*Quercus tomentella*), island poppy (*Eschscholzia ramosa*), island rush-rose (*Helianthemum greenei*), Channel Island scrub oak, island tarplant (*Deinandra clementina*), Lyon's pentachaeta (*Pentachaeta lyonii*), Nevin's woolly sunflower (*Constancea nevini*), round-leaved filaree (*California macrophylla*), Santa Catalina bedstraw (*Galium catalinense ssp. catalinense*), Santa Catalina Island buckwheat (*Eriogonum giganteum var. giganteum*), Santa Catalina currant (*Ribes viburnifolium*), Santa Catalina figwort (*Scrophularia villosa*), Santa Catalina ironwood (*Lyonothamnus floribundus ssp. floribundus*), Santa Catalina Island desert thorn (*Lycium brevipes var. hassei*), Santa Catalina Island manzanita, showy island snapdragon (*Gambelia speciosa*), south coast saltscale (*Atriplex pacifica*), south island bush-poppy (*Dendromecon harfordii var. rhamnoides*), southern island mallow (*Lavatera assurgentiflora*), Wallace's nightshade (*Solanum wallacei*), and winged-rockcress (*Sibara filifolia*), as listed in **Appendix B**. The following species were observed during the focused special-status plant species surveys: California box-thorn, Catalina crossosoma, Catalina Island dudleya, Catalina mariposa lily (found only as a single fruit), island buckwheat, island green dudleya, island oak, island poppy, island tarplant, Nevin's woolly sunflower, Santa Catalina bedstraw, Channel Island scrub oak, Santa Catalina Island manzanita, and showy island snapdragon.

### 3.4.4 SENSITIVE WILDLIFE SPECIES

Sensitive wildlife include those species listed as Endangered or Threatened under the FESA or CESA, candidates for listing by the USFWS or CDFW, and species of special concern to the CDFW. Several sensitive wildlife species were reported in the vicinity based on CNDDDB, totaling 15 species within the 4-quadrangle search. A total of 11 species were identified as having a potential to occur within the project site or use the project site based on the literature review and habitat on the project site, including bald eagle (*Haliaeetus leucocephalus*), burrowing owl (*Athene cunicularia*), San Clemente Island blunt-top snail (*Sterkia clementina*), Catalina mountain snail (*Radiocentrum avalonense*), pallid bat (*Antrozous pallidus*), peregrine falcon (*Falco peregrinus*), Santa Catalina Island fox (*Urocyon littoralis catalinae*), Santa Catalina lancetooth (*Haplotrema catalinense*), Santa Catalina shrew (*Sorex ornatus willetti*), Shepard's snail (*Pristiloma shepardae*), and Xantu's murrelet (*Synthliboramphus hypoleucus*), as listed in **Appendix C**, *Sensitive Wildlife Species*.

## 3.5 WILDLIFE MOVEMENT

### 3.5.1 Overview

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic material (MacArthur and Wilson, 1967; Soulé, 1987; Harris and Gallagher, 1989; Bennett, 1990).

Corridors effectively act as links between different populations of a species. A group of smaller populations (termed "demes") linked together via a system of corridors is termed a "metapopulation." The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration vs. emigration). The smaller the deme, the more important immigration becomes, because prolonged inbreeding with the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with

new genes and gene combinations that increases overall genetic diversity. An increase in a population's genetic variability is generally associated with an increase in a population's health and long-term viability.

Corridors mitigate the effects of habitat fragmentation by: (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss, 1983; Fahrig and Merriam, 1985; Simberloff and Cox, 1987; Harris and Gallagher, 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and, (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). Although the nature of each of these types of movement is species specific, large open spaces will generally support a diverse wildlife community representing all types of movement. Each type of movement may also be represented at a variety of scales from non-migratory movement of amphibians, reptiles, and some birds on a "local" level to home ranges encompassing many square-miles for large mammals moving on a "regional" level. A number of terms have been used in various wildlife movement studies, such as "wildlife corridor," "travel route," and "wildlife crossing" to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

**Travel Route:** A landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den areas). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover while moving between habitat areas; and provides a relatively direct link between target habitat areas.

**Wildlife Corridor:** A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.

**Wildlife Crossing:** A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often "choke points" along a movement corridor.

### **3.5.2 Wildlife Movement Within the Project Site**

As previously described, wildlife movement activities occur at a variety of scales from a "local" level to a "regional" level. Regional movement through the project site is relevant only in context to Santa Catalina

Island. The project site is immediately surrounded in all directions by open space but this limited in the west, north and east directions because of the Pacific Ocean. Consequently, wildlife movement is impeded in the project location only but the occasional fence, which are placed to control the movement of American bison on the island. It is concluded that all movement in the vicinity of the project site should be considered as local wildlife movement, which is currently essentially unhindered.

Movement on “local” scale could occur anywhere within the project site for species that are less restricted in movement pathway requirements and are adapted to urban use areas (e.g., Santa Catalina Island fox/*Urocyon littoralis catalinaes*, and bird species in general). Habitat within the project site is dominated by coast prickly spear shrubland with smaller patches of other native vegetation, including toyon chaparral and California sage scrub . As such, the project site supports some wildlife movement within the project site and/or nearby areas for foraging and shelter.

### 3.6 JURISDICTIONAL DRAINAGES

Drainages within the Project site may fall under the jurisdiction of State of California Fish and Game Code, Section 1602, which, as described above, requires any entity to notify the CDFW of the proposed project that will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake. In addition, the Federal CWA, Section 404 regulates the discharge of dredged material, placement of fill material, or excavation within “waters of the U.S.”

No formal jurisdictional delineation was undertaken for this project because the Project does not propose any obstruction or diversion of the natural flow nor discharge of any dredged materials within a bed or channel of any on-site drainage. There are three drainages that would be under the jurisdiction of the CDFW or the USACE. These include the main drainage of the existing WMSC, and two smaller drainages in the southern portion of the Project site (within proposed parcels 6 and 7), the easternmost of which is tributary to the main drainage of the WMSC. No riparian vegetation was observed in any of these drainages.

## **4.0 CHARACTERISTICS OF THE SURROUNDING AREA**

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## 4.0 CHARACTERISTICS OF THE SURROUNDING AREA

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### 4.1 EXISTING LAND USES

The Santa Catalina Island Land Division including the Wrigley Marine Science Center Project is located at the northwest end of Santa Catalina Island. The WMSC is a teaching and research institute established by the University of Southern California for use by faculty and students and other university researchers. The facility has received a number of entitlements from the County of Los Angeles over the past decades and has a current maximum occupancy of 201 people. The existing WMSC facilities include a single-story administration trailer building (which is authorized to be replaced with an approved 21,000 square foot (SF), three-story administration building), a 21,000 SF marine laboratory building; a two-story, 14,000 SF dormitory building and a single-story 5,200 SF, three duplex houses and two duplex dormitory buildings. Also authorized under CUP 98-131 and the 2006 approved Revised Exhibit "A" are a multipurpose activity, one faculty house, two additional duplex dormitory buildings and two triplex dormitory buildings. In addition, CUP 98-131 authorizes a waterfront building (11,500 SF) to replace existing temporary structures.

The only major development at the northwest end of the Santa Catalina Island is the Two Harbors village, which is primarily a small tourist-oriented commercial area for outdoor and boating activities. Two Harbors is located approximately one mile to the southwest of the WMSC. Two Harbors campground, which includes 42 individual sites and three group-camping areas, is just to the east of Two Harbors and approximately 0.5 mile to the southwest of the project site. The area immediately surrounding the Project site is chiefly open space under the control of the Catalina Island Conservancy. Other land uses at the western end of Santa Catalina Island are isolated recreation camp facilities such as the Boy Scouts of America, Western Los Angeles County Council at Emerald Bay in the far west end of the Island, and the San Gabriel Valley Boy Scouts of America facility at Cherry Valley. Catalina airport is approximately 4.80 miles to the southeast of the project.

### 4.2 DEVELOPMENT PROJECTS

There are a couple of new development projects in the Two Harbors village area. County Project R2014-01278 requested by the Santa Catalina Island Company was approved in May 2016 to expand the existing alcohol service of the Harbor Reef Restaurant and the construction of six cabanas at the Two Harbors beach. County Project 2015-01333 requested by the Catalina Island Conservancy was approved in August 2016 to expand the existing Island trail system. Also in the northwestern portion of Santa Catalina Island is the pending County Project R2010-0074 application to update the existing Camp Emerald Bay Master Plan for the Boy Scout facility, to include improvements to camper and staff housing, restroom facilities and infrastructure. In addition, there is a proposed one-million-gallon water tank retrofit project.

### 4.3 OPEN SPACE RESERVES

Much of the area surrounding the Project site has a land use designation of Open Space. These Open Space areas are part of the Open Space Easement granted to the County by the Santa Catalina Island Company in 1974. The 50-year Open Space Easement consists of 41,000 acres with the purpose to preserve and protect wildlife, plants and unique geological and archaeological sites on the Island.

#### **4.4 CONSERVATION PLANS**

Although there is no formal conservation plan for Santa Catalina Island, the Catalina Island Conservancy has implemented a Catalina Island fox recovery program to increase the Island's population for the species. Evidence of Santa Catalina Island fox was observed within the Project site.

#### **4.5 HABITATS AND VEGETATION COMMUNITIES**

The northwestern portion of Santa Catalina Island is extremely steep and rugged with steep shoreline palisades. The areas surrounding the Project support similar chaparral, coastal sage scrub and maritime succulent scrub habitats as found on the Project site. Because much of the Project site is in a natural condition, the area adjacent to the Project site are contiguous with the natural vegetation communities found on Santa Catalina Island. In general, Santa Catalina Island supports nearly 9,000 acres of grassland habitat, 14,000 acres of chaparral habitats and more than 17,000 acres of various forms of coastal sage scrub.

#### **4.6 BIOLOGICAL VALUE**

The natural vegetation occurring on the Project site and the surrounding areas provide a high biological value, providing valuable nesting, foraging, roosting and nursery resources for a diversity of plants and wildlife. In addition, the island setting supports a large number of endemic plant species uniquely distinct from their close mainland relatives. Because of the rich diversity and high biological value of the Island, it has been designated a Coastal Resource Area in the County's 2015 General Plan Update.

## 5.0 CONCLUSION

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## 5.0 CONCLUSIONS

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### 5.1 REGULATORY FRAMEWORK

Because the County of Los Angeles requires a coastal development permit for the subdivision of land within the Coastal Zone, the proposed Project is requesting approval of a coastal development permit. The proposed land division is processed under County Subdivision Code of Title 21. The requested coastal development permit and the required significant ecological area condition use permit are processed under the County Planning and Zoning Code, Title 22. The regulatory provisions of the California and Federal Endangered Species Acts and the Federal Clean Water Act are not applicable to the proposed project because no physical changes to the environmental are proposed with the current application although the existing WMSC will continue under its existing entitlements.

### 5.2 SUMMARY OF BIOLOGICAL DATA

A total of 17 different vegetation communities were observed on the Project site in addition to five additional land use covers. The Project site supports nine sensitive plant communities and 13 special-status plant species were observed as well as one special-status wildlife species.

### 5.3 PROJECT COMPATIBILITY WITH SEA

The proposed land division Project will be consistent with the two SEAs in the project vicinity, Blue Cavern Point and Upper Isthmus Canyon. Only a portion of the Blue Cavern Point SEA is contained within the proposed land division area and no new development or ground disturbances are proposed. The proposed Project is consistent with the SEA compatibility criteria (County Planning and Zoning Code Section 22.56.216). The proposed development is highly compatible with the biotic resources present because no new vegetation disturbing or removal activities are proposed. Each proposed new lot currently has access from the road way system in the project area and no new roads or private driveways are required or requested. All existing water bodies and watercourse will remain in a natural condition because the tentative tract map will not change any of the Project site drainages. Existing wildlife movement will not be altered by the project because there are no proposed changes that will alter existing topography or land uses. The proposed development will maintain the existing amount of open space, which sufficiently buffer the critical biological resource areas. No new fences are necessary to buffer important habitat areas from the existing development and no new roads or utilities are required as existing infrastructure is sufficient for the continuation of the current approved WMSC activities and these do not conflict with critical resources, habitats areas or migratory paths.

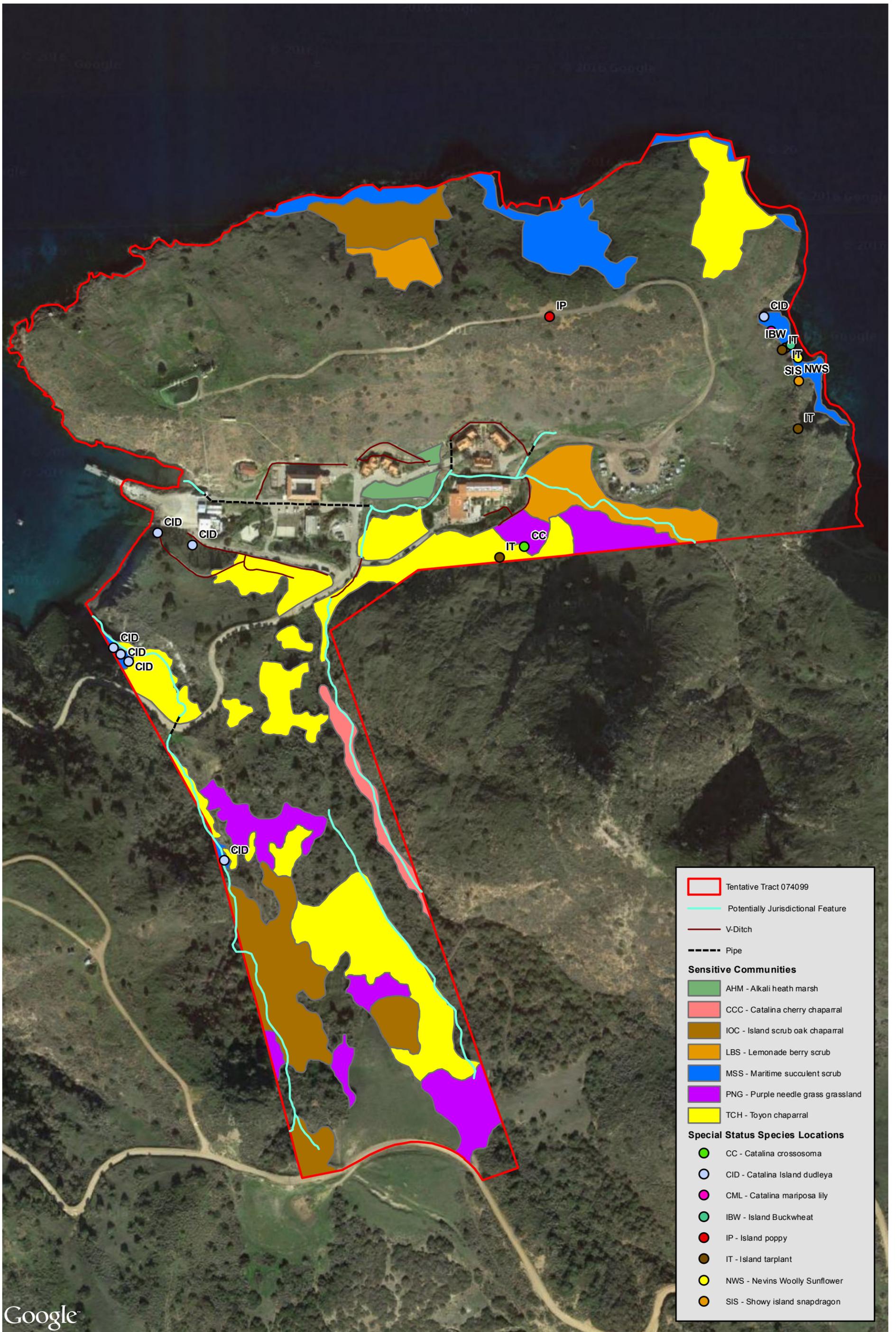
### 5.4 CONSTRAINTS AND RECOMMENDATIONS

The proposed Project will not disturb or remove any existing biological resources or vegetation communities. The project is the division of lands some of which are currently leased to the project proponent by the Santa Catalina Island Company. With the approval of the proposed land division, USC intends to obtain ownership over parcels 3 through 7 with parcels 1 and 8 to be retained by the Santa Catalina Island Company.

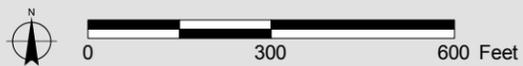
The Project site contains a number of biological constraints to future development, as depicted on **Figure 8, Biological Constraints Map**. As described above in Section 3.4.3, Sensitive Plant Communities, there are seven sensitive plant communities, including alkali heath marsh, Catalina cherry chaparral, island scrub oak chaparral, lemonade berry scrub, maritime succulent scrub, purple needle grass grassland, and toyon chaparral. Their distribution within the Project site is depicted in Figure 8. The Project site also contains potentially jurisdictional drainage features, all of which drainage to Fisherman's Cove. In addition, several special-status plant species were observed, primarily associated with maritime succulent scrub and ocean bluffs. These special-status plant species include Catalina crossosoma, Catalina Island dudleya, Catalina mariposa lily, Channel Island scrub oak, island, buckwheat, island poppy, island tarplant, Nevin's woolly sunflower, and showy island snapdragon.

For any future development, the site plan design should avoid impact to the biological constraints shown in Figure 8. In addition, a minimum buffer of 50 feet from the drainage features should be incorporated into the site design.

It is recommended that focused special-status plant surveys be conducted for any future development of the proposed parcels and all occurrences located within potential development areas be recorded using global positioning system technology. In addition, a formal oak tree survey is recommended for any future development of proposed parcels 6 and 7, with the intent of the oak tree mapping to avoid removal by designing around their locations. It is also recommended that an appropriately permitted and qualified biologist conduct live trapping to ascertain whether or not the Santa Catalina Island shrew may be present within any future development areas. Lastly, a thorough survey for potential Catalina Island fox dens should be conducted prior to the designing of any future development within the Project site.



Google™



**Biological Constraints Map**

USCWMSC  
Source: Google, 2015 (Aerial); PCR Services Corporation, 2016.

FIGURE

**8**

## 6.0 REFERENCES

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## 6.0 REFERENCES

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## APPENDIX A

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### FLORAL AND FAUNAL COMPENDIUM

# Appendix A - Floral and Faunal Compendium

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## CLUB-MOSSES

SCIENTIFIC NAME	COMMON NAME
<b>Selaginellaceae</b> <i>Selaginella bigelovii</i>	<b>Spike-moss family</b> Bigelow's spike moss

## FERNS

SCIENTIFIC NAME	COMMON NAME
<b>Pteridaceae</b> * <i>Adiantum jordanii</i> .	<b>Maidenhair Fern Family</b> California maidenhair fern

## ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
<b>Aizoaceae</b> * <i>Carpobrotus edulis</i> * <i>Mesembryanthemum crystallinum</i> * <i>Mesembryanthemum nodiflorum</i>	<b>Fig-Marigold Family</b> hottentot fig common iceplant slender-leaved iceplant
<b>Anacardiaceae</b> <i>Malosma laurina</i> <i>Rhus integrifolia</i> <i>Rhus ovata</i> <i>Toxicodendron diversilobum</i>	<b>Sumac or Cashew Family</b> laurel sumac lemonade sumac sugar sumac Pacific poison oak
<b>Apiaceae</b> * <i>Foeniculum vulgare</i>	<b>Carrot Family</b> sweet fennel
<b>Asteraceae</b> <i>Achillea millefolium</i> <i>Acourtia microcephala</i> <i>Artemisia californica</i> * <i>Baccharis pilularis</i> cultivar <i>Baccharis salicifolia</i> * <i>Centaurea melitensis</i> <i>Constancea nevinii</i> <i>Deinandra clementina</i> <i>Deinandra fasciculata</i> <i>Encelia californica</i> <i>Eriophyllum confertiflorum</i> <i>Isocoma menziesii</i> var. <i>vernonioides</i> <i>Leptosyne gigantea</i> <i>Pseudognaphalium biolettii</i>	<b>Sunflower Family</b> common yarrow sacapellote California sagebrush cultivatedcoyote brush mule fat tochalote Nevin's woolly sunflower Island tarplant fascicled tarplant California encelia golden yarrow Menzies' goldenbush giant coreopsis two-color rabbit-tobacco

\* non-native

## ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
<b>Boraginaceae</b>	<b>Borage Family</b>
<i>Cryptantha</i> sp.	cryptantha
<i>Heliotropium curassavicum</i>	salt heliotrope
<b>Brassicaceae</b>	<b>Mustard Family</b>
* <i>Brassica nigra</i>	black mustard
<i>Lepidium nitidum</i>	shining pepperweed
<b>Cactaceae</b>	<b>Cactus Family</b>
<i>Opuntia littoralis</i>	coastal prickly pear
<b>Chenopodiaceae</b>	<b>Goosefoot Family</b>
* <i>Atriplex semibaccata</i>	Australian saltbush
<i>Salicornia pacifica</i>	pickleweed
* <i>Salsola kali</i>	Russian thistle
<b>Cleomaceae</b>	<b>Spiderflower Family</b>
<i>Peritoma arborea</i>	bladderpod
<b>Crassulaceae</b>	<b>Stonecrop Family</b>
<i>Dudleya virens</i> ssp. <i>hassei</i>	Catalina Island dudleya
<i>Dudleya virens</i> ssp. <i>insularis</i>	island green liveforever
<b>Crossomataceae</b>	<b>Crossosoma Family</b>
<i>Crossosoma californicum</i>	California rockflower
<b>Cucurbitaceae</b>	<b>Gourd Family</b>
<i>Marah macrocarpus</i>	Cucamonga manroot
<b>Ericaceae</b>	<b>Heath Family</b>
<i>Arctostaphylos catalinae</i>	Santa Catalina Island manzanita
<i>Xylococcus bicolor</i>	mission manzanita
<b>Fabaceae</b>	<b>Legume Family</b>
<i>Acmispon argophyllus</i> var. <i>argenteus</i>	Channel Islands silver lotus
<b>Fagaceae</b>	<b>Oak Family</b>
<i>Quercus pacifica</i>	Channel Island scrub oak
<i>Quercus tomentella</i>	island live oak
<b>Frankeniaceae</b>	<b>Frankenia Family</b>
<i>Frankenia salina</i>	alkali heath
<b>Gentianaceae</b>	<b>Gentian Family</b>
* <i>Erodium</i> sp.	stork's bill
<b>Lamiaceae</b>	<b>Mint Family</b>
* <i>Rosmarinus officinalis</i>	rosemary

\* *non-native*

## ANGIOSPERMS (DICOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
<b>Nyctaginaceae</b>	<b>Four O'Clock Family</b>
* <i>Bougainvillea spectabilis</i>	great bougainvillea
<i>Mirabilis laevis</i>	wishbone bush
<b>Papaveraceae</b>	<b>Poppy Family</b>
* <i>Dicentra sp.</i>	ornamental dicentra
* <i>Eschscholzia ramosa</i>	Channel Island poppy
<b>Plantaginaceae</b>	<b>Plantain Family</b>
<i>Antirrhinum nuttallianum</i>	Nuttall's snapdragon
<i>Gambelia speciosa</i>	showy island snapdragon
<b>Platanaceae</b>	<b>Sycamore Family</b>
* <i>Platanus racemosa</i> cultivar	cultivated western sycamore
<b>Polygonaceae</b>	<b>Buckwheat Family</b>
<i>Eriogonum grande</i> var. <i>grande</i>	island buckwheat
* <i>Polygonum arenastrum</i>	common knotweed
<b>Ranunculaceae</b>	<b>Buttercup Family</b>
<i>Delphinium parryi</i> ssp. <i>parryi</i>	Parry's larkspur
<b>Rhamnaceae</b>	<b>Buckthorn Family</b>
<i>Rhamnus ilicifolia</i>	holly-leaf redberry
<b>Rosaceae</b>	<b>Rose Family</b>
* <i>Heteromeles arbutifolia</i> cultivar	cultivated toyon
* <i>Prunus ilicifolia</i> ssp. <i>lyonii</i> cultivar	cultivated Catalina cherry
<b>Rubiaceae</b>	<b>Madder Family</b>
<i>Galium catalinense</i> ssp. <i>catalinense</i>	Santa Catalina Island bedstraw
<i>Galium nuttallii</i>	San Diego bedstraw
<b>Solanaceae</b>	<b>Nightshade Family</b>
<i>Lycium californicum</i>	California box-thorn
* <i>Nicotiana glauca</i>	tree tobacco

\* *non-native*

## ANGIOSPERMS (MONOCOTYLEDONS)

SCIENTIFIC NAME	COMMON NAME
<b>Areceaceae</b>	<b>Palm Family</b>
* <i>Phoenix canariensis</i>	Canary Island date palm
* <i>Washingtonia filifera</i>	California fan palm
<b>Liliaceae</b>	<b>Lily Family</b>
<i>Bloomeria crocea</i>	common goldenstar
<i>Brodiaea jolonensis</i>	dwarf brodiaea
<i>Calochortus splendens</i>	lilac mariposa lily
<i>Dichelostemma capitatum</i>	blue dicks
<b>Poaceae</b>	<b>Grass Family</b>
* <i>Arundo donax</i>	giant reed
* <i>Avena fatua</i>	wild oat
* <i>Brachypodium distachyon</i>	false-brome
* <i>Bromus madritensis ssp. rubens</i>	foxtail chess
<i>Distichlis spicata</i>	saltgrass
* <i>Festuca perennis</i>	Italian ryegrass
* <i>Hordeum murinum</i>	glaucous foxtail barley
* <i>Hordeum vulgare</i>	barley
* <i>Phalaris aquatica</i>	Harding grass
* <i>Polypogon viridis</i>	water bent
* <i>Stipa miliacea</i>	smilo grass
<i>Stipa pulchra</i>	purple needle grass
<b>Typhaceae</b>	<b>Cattail Family</b>
<i>Typha</i> sp.	cattail

\* *non-native*

**BIRDS**

<b>SCIENTIFIC NAME</b>	<b>COMMON NAME</b>
<b>Odontophoridae</b>	<b>Quails</b>
<i>Callipepla californica</i>	California quail
<b>Charadriidae</b>	<b>Plovers</b>
<i>Charadrius vociferus</i>	killdeer
<b>Columbidae</b>	<b>Pigeons and Doves</b>
<i>Columba livia</i>	rock pigeon
<b>Picidae</b>	<b>Woodpeckers</b>
<i>Melanerpes formicivorus</i>	acorn woodpecker
<b>Tyrannidae</b>	<b>Tyrant Flycatchers</b>
<i>Sayornis nigricans</i>	black phoebe
<b>Corvidae</b>	<b>Jays and Crows</b>
<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus corax</i>	common raven
<b>Hirundinidae</b>	<b>Swallows</b>
<i>Petrochelidon pyrrhonota</i>	cliff swallow
<b>Paridae</b>	<b>Titmice</b>
<i>Baeolophus inornatus</i>	oak titmouse
<b>Troglodytidae</b>	<b>Wrens</b>
<i>Thryomanes bewickii</i>	Bewick's wren
<b>Mimidae</b>	<b>Thrashers</b>
<i>Mimus polyglottos</i>	northern mockingbird
<b>Sturnidae</b>	<b>Starlings</b>
* <i>Sturnus vulgaris</i>	European starling
<b>Emberizidae</b>	<b>Emberizine Sparrows and Allies</b>
<i>Pipilo maculatus</i>	spotted towhee
<b>Cardinalidae</b>	<b>Buntings, Grosbeaks, and Tanagers</b>
<i>Piranga ludoviciana</i>	western tanager
<b>Icteridae</b>	<b>Blackbirds</b>
<i>Sturnella neglecta</i>	western meadowlark
<b>Fringillidae</b>	<b>Finches</b>
<i>Haemorhous mexicanus</i>	house finch
<i>Spinus psaltria</i>	lesser goldfinch

\* *non-native*

## MAMMALS

### SCIENTIFIC NAME

#### **Bovidae**

\* *Bison bison*

#### **Canidae**

*Urocyon littoralis catalinae*

#### **Cervidae**

\* *Odocoileus hemionus*

#### **Leporidae**

\* *Sylvilagus audubonii sanctidiegi*

#### **Sciuridae**

*Spermophilus beecheyi nesioticus*

### COMMON NAME

#### **Bison, Sheep, and Relatives**

American bison

#### **Canines**

Santa Catalina Island fox

#### **Deer**

mule deer

#### **Hares and Rabbits**

Audubon's cottontail

#### **Squirrels and Chipmunks**

Catalina Beechey ground squirrel

\* *non-native*

## APPENDIX B

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### SENSITIVE PLANT SPECIES

## APPENDIX B: SENSITIVE PLANT SPECIES

SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
<b>LICHENS</b>							
<b>Graphidaceae</b>							
<i>Graphis saxorum</i>	Baja rock lichen	N/A	NONE	NONE	3	Rocky substrates in coastal scrub; volcanic rocks, moderately shaded. 30-80 meters.	NONE
<i>Texosporium sancti-jacobi</i>	Woven-spored lichen	N/A	NONE	NONE	1B.2	Grassland or savannah communities; requires natural openings in arid vegetation that are not maintained by fire, sparsely vegetated with native forbs and bunchgrasses, free of weeds. 0-1,000 meters.	NONE
<b>ANGIOSPERMS (DICOTYLEDONS)</b>							
<b>Asteraceae Sunflower Family</b>							
<i>Centromadia parryi ssp. australis</i>	southern tarplant	May-Nov.	NONE	NONE	1B.1	Margins of marshes and swamps and sometimes vernal pools, valley and foothill grassland; often in disturbed sites and alkaline soils near the coast. 0-425 meters	NONE
<i>Constancea nevinii</i>	Nevin's woolly sunflower	Apr.-Aug.	NONE	NONE	1B.3	Coastal bluff scrub, coastal scrub; slopes and cliffs. 5-410 meters.	OBSERVED
<i>Deinandra clementina</i>	island tarplant	May-Jul.	NONE	NONE	4.3	Coastal bluff scrub, valley and foothill grassland. 15-200 meters	OBSERVED
<i>Isocoma menziesii var. decumbens</i>	decumbent goldenbush	Apr.-Nov.	NONE	NONE	1B.2	Coastal scrub, chaparral; sandy soils, often in disturbed sites. 10-135 meters.	ABSENT
<i>Microseris douglasii ssp. platycarpa</i>	small-flowered microceris	Mar.-Apr.	NONE	NONE	1A	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay soils.	POTENTIAL, NOT OBSERVED

**OBS** = observed; **NONE** = species not expected to occur due to the lack of suitable habitat, or the site's location outside of the species' range; **ABSENT** = potentially suitable habitat is present but the species was not observed during the focused surveys.

SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
						15-1,070 meters.	
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta	Mar.-Aug.	FE	SE	1B.1	Chaparral, coastal scrub, and valley and foothill grassland; Hambright series rocky and clay soils in openings. 30-630 meters.	<b>ABSENT</b>
<i>Senecio aphanactis</i>	chaparral ragwort	Jan.-Apr.	NONE	NONE	2B.2	Chaparral, cismontane, woodland, coastal scrub; drying alkaline flats. 15-800 meters.	<b>NONE</b>
<b>Convolvulaceae</b>	<b>Morning Glory Family</b>						
<i>Convolvulus simulans</i>	small-flowered morning glory	Mar.-Jul.	NONE	NONE	4.2	Chaparral, coastal scrub, valley and foothill grassland; wet serpentine ridges. 30-700 meters.	<b>NONE</b>
<b>Boraginaceae</b>	<b>Borage Family</b>						
<i>Cryptantha wigginsii</i>	Wiggins' cryptantha	Feb.-Jun.	NONE	NONE	1B.2	Coastal scrub; often in clay soils. 20-275 meters.	<b>NONE</b>
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	Mar.-May	NONE	NONE	4.2	Chaparral, coastal scrub, valley and foothill grassland; clay soils, open grassy areas. 20-955 meters.	<b>NONE</b>
<b>Brassicaceae</b>	<b>Cabbage Family</b>						
<i>Dithyrea maritima</i>	beach spectaclepod	Mar.-May	NONE	ST	1B.1	Coastal dunes, coastal scrub; seashores on sand dunes and sandy places near the shores. 3-50 meters.	<b>ABSENT</b>
<i>Sibara filifolia</i>	winged-rockcress	Mar.-Apr.	FE	NONE	1B.1	Coastal scrub; rocky volcanic soils. 60-305 meters.	<b>ABSENT</b>

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SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
<b>Cactaceae</b>	<b>Cactus Family</b>						
<i>Bergerocactus emoryi</i>	golden-spined cereus	May.-Jun.	NONE	NONE	2B.2	Coastal scrub, chaparral, closed-cone coniferous forest; restricted to the coastal belt. 3-395 meters.	<b>ABSENT</b>
<b>Caprifoliaceae</b>	<b>Honeysuckle Family</b>						
<i>Lonicera subspicata</i> var. <i>subspicata</i>	Santa Barbara honeysuckle	Mar.-Aug.	NONE	NONE	1B.2	Chaparral, cismontane woodland, and coastal scrub communities. 35-1,000 meters.	<b>NONE</b>
<b>Chenopodiaceae</b>	<b>Goosefoot Family</b>						
<i>Aphanisma blitoides</i>	aphanisma	Mar.-Jun.	NONE	NONE	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub; on bluffs and slopes near the ocean in sandy or clay soils. 1-305 meters.	<b>ABSENT</b>
<i>Atriplex coulteri</i>	Coulter's saltbush	Mar.-Oct.	NONE	NONE	1B.2	Alkaline or clay soils; coastal bluff scrub, coastal dunes, Coastal scrub, Valley and foothill grassland. 10-440 meters.	<b>ABSENT</b>
<i>Atriplex pacifica</i>	south coast saltscare	Mar.-Oct.	NONE	NONE	1B.2	Coastal scrub, coastal bluff scrub, playas, chenopod scrub; alkali soils. 1-500 meters.	<b>ABSENT</b>
<i>Atriplex serenana</i> var. <i> davidsonii</i>	Davidson's saltscare	Apr.-Oct.	NONE	NONE	1B.2	Coastal bluff scrub, coastal scrub; alkaline soil. 10-200 meters.	<b>NONE</b>
<i>Suaeda taxifolia</i>	Woolly seablite	Jan.-Dec.	NONE	NONE	4.2	Coastal bluff scrub, coastal dunes, marshes, swamps. 0-50 meters.	<b>NONE</b>
<b>Cistaceae</b>	<b>Rock-rose family</b>						
<i>Helianthemum greenei</i>	island rush-	Jan.-Aug.	FE	NONE	1B.2	Chaparral, coastal scrub,	<b>ABSENT</b>

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SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
	rose					cismontane woodland, closed-cone coniferous forest; rocky sites, usually in open areas. 15-490 meters.	
<b>Convolvulaceae</b>	<b>Morning-glory Family</b>						
<i>Calystegia macrostegia</i> ssp. <i>amplissima</i>	island morning-glory	Feb.-July	None	None	4.3	Rocky slopes, canyon walls in coastal bluff scrub, coastal dunes, valley and foothill grasslands. 10-275 meters.	<b>ABSENT</b>
<i>Dichondra occidentalis</i>	western dichondra	Mar.-July	NONE	NONE	4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; on sandy loam, clay, and rocky sites. 50-500 meters.	<b>NONE</b>
<b>Crassulaceae</b>	<b>Stonecrop Family</b>						
<i>Dudleya greenei</i>	Greene's dudley	May-Jul.	NONE	NONE	4.2	Coastal bluff scrub, chaparral, coastal scrub, cismontane woodland; on rocky volcanic cliffs. 1-245 meters.	<b>NONE</b>
<i>Dudleya virens</i> ssp. <i>hassei</i>	Catalina Island dudleya	Mar.-Jun.	NONE	NONE	1B.2	Coastal bluff scrub; rocky places. 0-400 meters.	<b>OBSERVED</b>
<i>Dudleya virens</i> ssp. <i>insularis</i>	Island green dudleya	Apr.-Jun.	NONE	NONE	1B.2	Coastal bluff scrub, coastal scrub; rocky sites. 5-300 meters.	<b>OBSERVED</b>
<i>Dudleya virens</i> ssp. <i>virens</i>	bright green dudleya	Apr.-Jul.	NONE	NONE	1B.2	Chaparral, coastal scrub, coastal bluff scrub; rocky outcrops on bluffs facing the ocean. 5-400 m.	<b>ABSENT</b>
<b>Crossosomataceae</b>	<b>Crossosoma Family</b>						
<i>Crossosoma californicum</i>	Catalina crossosoma	Feb.-Mar.	NONE	NONE	1B.2	Chaparral, coastal scrub; on rocky sea bluffs, wooded canyons, and dry, open sunny spots on rocky clay.	<b>OBSERVED</b>

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SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
						0-500 meters	
<b>Ericaceae</b>	<b>Heath Family</b>						
<i>Arctostaphylos catalinae</i>	Santa Catalina Island manzanita	Feb.-Apr.	NONE	NONE	1B.2	Chaparral; volcanic soil. 75-600 meters.	<b>OBSERVED</b>
<b>Euphorbiaceae</b>	<b>Spurge Family</b>						
<i>Euphorbia misera</i>	cliff spurge	Dec.-Aug.	NONE	NONE	2B.2	Coastal bluff scrub, coastal scrub, Mojavean desert scrub, rocky sites. 10-500 meters.	<b>ABSENT</b>
<b>Fabaceae</b>	<b>Legume Family</b>						
<i>Acmispon dendroideus</i> <i>var. dendroideus</i>	island broom	Jan.-Aug.	NONE	NONE	4.2	Closed-cone coniferous forest, chaparral, coastal scrub, coastal bluff scrub, cismontane woodland; on dry ridges. 3-460 meters.	<b>ABSENT</b>
<i>Trifolium palmeri</i>	southern island clover	Mar.-May	NONE	NONE	4.2	Coastal bluff scrub, valley and foothill grassland; grassy areas near the ocean. 10-180 meters.	<b>NONE</b>
<b>Fagaceae</b>	<b>Oak Family</b>						
<i>Quercus engelmannii</i>	Engelmann oak	Mar.-Jun.	NONE	NONE	4.2	Cismontane woodland, chaparral, riparian woodland, valley and foothill grassland. 50-1300 meters.	<b>NONE</b>
<i>Quercus pacifica</i>	island scrub oak	Mar.-Apr.	NONE	NONE	4.2	Closed-coned coniferous forest, chaparral, cismontane woodland. 0-430 meters.	<b>OBSERVED</b>
<i>Quercus tomentella</i>	island oak	Mar.-Jul.	NONE	NONE	4.2	Chaparral, cismontane woodland, closed-coned coniferous forest, riparian woodland; north-facing slopes. 15-730 meters.	<b>OBSERVED</b>
<b>Geraniaceae</b>	<b>Geranium Family</b>						

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SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
<i>California macrophylla</i>	round-leaved filaree	Mar.-May	NONE	NONE	1B.1	Cismontane woodland, valley and foothill grassland; clay. 15-1200 meters.	<b>ABSENT</b>
<b>Grossulariaceae</b>	<b>Gooseberry Family</b>						
<i>Ribes viburnifolium</i>	Santa Catalina currant	Feb.-Apr.	NONE	NONE	1B.2	Chaparral, cismontane woodland. 30-350 meters.	<b>ABSENT</b>
<b>Lamiaceae</b>	<b>Mint Family</b>						
<i>Lepechinia fragrans</i>	Fragrant pitcher sage	Mar.-Oct.	NONE	NONE	4.2	Chaparral communities. 20-1,310 meters.	<b>NONE</b>
<b>Malvaceae</b>	<b>Mallow Family</b>						
<i>Lavatera assurgentiflora</i> ssp. <i>glabra</i>	southern island mallow	May-Sept.	None	None	1B.1	Coastal bluff scrub communities. 5-220 meters.	<b>ABSENT</b>
<b>Nyctaginaceae</b>	<b>Four O'clock Family</b>						
<i>Abronia maritima</i>	red sand-verbena	Feb.-Dec.	NONE	NONE	4.2	Coastal dunes. 0-100 meters.	<b>NONE</b>
<b>Montiaceae</b>	<b>Miner's Lettuce Family</b>						
<i>Cistanthe maritima</i>	seaside maritima	Mar.-Jun.	NONE	NONE	4.2	Coastal bluff, coastal scrub, valley and foothill grassland; sandy sites. 5-300 meters.	<b>NONE</b>
<b>Orobanchaceae</b>	<b>Broomrape Family</b>						
<i>Orobanche parishii</i> ssp. <i>brachyloba</i>	Short-lobed broomrape	Apr.-Oct.	NONE	NONE	4.2	Sandy soil within coastal bluff scrub, coastal dunes, and coastal scrub. 3-350 meters.	<b>NONE</b>
<b>Papaveraceae</b>	<b>Poppy Family</b>						
<i>Dendromecon harfordii</i> var. <i>rhamnoides</i>	south island bush-poppy	Apr.-Jun.	NONE	NONE	3.1	Chaparral, cismontane woodland, coastal sage scrub. 150-520 meters.	<b>ABSENT</b>
<i>Eschscholzia ramosa</i>	island poppy	Mar.-May	NONE	NONE	4.3	Coastal bluff scrub, chaparral,	<b>OBSERVED</b>

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SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
						coastal scrub; steep canyon banks near the sea. 0-380 meters.	
<b>Plantaginaceae</b>	<b>Plantain Family</b>						
<i>Gambelia speciosa</i>	showy island snapdragon	Feb.-May	NONE	NONE	1B.2	Coastal scrub; rocky cliffs and canyons. 0-900 meters.	<b>OBSERVED</b>
<b>Polemoniaceae</b>	<b>Phlox Family</b>						
<i>Gilia nevinii</i>	Nevin's gilia	Mar.-Jun.	NONE	NONE	4.3	Coastal bluff scrub, coastal scrub, valley and foothill grassland; open, dry slopes. 5-400 meters	<b>NONE</b>
<b>Polygonaceae</b>	<b>Buckwheat Family</b>						
<i>Eriogonum giganteum</i> var. <i>giganteum</i>	Santa Catalina Island buckwheat	Mar.-Oct.	NONE	NONE	4.3	Chaparral, coastal scrub; rocky sites. 10-535 meters.	<b>ABSENT</b>
<i>Eriogonum grande</i> var. <i>grande</i>	island buckwheat	Jun.-Oct.	NONE	NONE	4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; dry rocky cliffs and bluffs. 3-460 meters.	<b>OBSERVED</b>
<i>Nemacaulis denudata</i> var. <i>denudata</i>	coast woolly-heads	Apr.-Sept.	NONE	NONE	1B.2	Coastal dune communities. 0-100 meters.	<b>NONE</b>
<b>Rhamnaceae</b>	<b>Buckthorn Family</b>						
<i>Ceanothus megacarpus</i> var. <i>insularis</i>	island ceanothus	Dec. – Apr.	NONE	NONE	4.3	Chaparral, dry, shrubby slopes and canyons near the coast; sandy soils. 30-600 meters.	<b>NONE</b>
<i>Rhamnus pirifolia</i>	island redberry	Feb.-Jul.	NONE	NONE	4.2	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. 10-1,000 meters.	<b>NONE</b>
<b>Rosaceae</b>	<b>Rose Family</b>						
<i>Cercocarpus betuloides</i>	island	Feb.-May	NONE	NONE	4.3	Chaparral, closed-cone coniferous	<b>NONE</b>

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SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
<i>var. blancheae</i>	mountain-mahogany					forest. 30-600 meters.	
<i>Cercocarpus traskiae</i>	Catalina Island mountain-mahogany	Mar.-May	FE	SE	1B.1	Chaparral, coastal scrub; rocky, saussurite gabbro. 100-250 meters.	<b>ABSENT</b>
<i>Lyonothamnus floribundus</i> ssp. <i>floribundus</i>	Santa Catalina Island ironwood	May-Jun.	NONE	NONE	1B.2	Broadleaf upland forest, chaparral, and cismontane woodland communities. 75-500 meters.	<b>ABSENT</b>
<b>Rubiaceae</b>	<b>Madder Family</b>						
<i>Galium catalinense</i> ssp. <i>catalinense</i>	Santa Catalina Island bedstraw	Feb.-Jul.	NONE	NONE	1B.3	Chaparral, coastal scrub. 5-300 meters.	<b>OBSERVED</b>
<i>Galium nuttallii</i> ssp. <i>insulare</i>	Nuttall's island bedstraw	Mar.-June	NONE	NONE	4.3	Cismontane woodland, chaparral, coastal scrub, lower montane coniferous forest; common on north-facing slopes under woody vegetation. 3-440 meters.	<b>NONE</b>
<b>Saxifragaceae</b>	<b>Saxifrage Family</b>						
<i>Jepsonia malvifolia</i>	island jepsonia	Aug.-Jan.	NONE	NONE	4.2	Chaparral, coastal scrub; on ridgetops and among rocks. 15-1000 meters.	<b>POTENTIAL, NOT OBSERVED</b>
<b>Scrophulariaceae</b>	<b>Figwort Family</b>						
<i>Diplacus traskiae</i>	Santa Catalina monkeyflower	Mar.-Apr.	NONE	NONE	A1	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay soils. 15-1070 meters.	<b>POTENTIAL, NOT OBSERVED</b>
<i>Scrophularia villosa</i>	Santa Catalina figwort	Mar.-Jun.	NONE	NONE	1B.2	Chaparral, coastal scrub. 45 and 510 meters.	<b>ABSENT</b>
<b>Solanaceae</b>	<b>Nightshade Family</b>						

**OBSERVED** = species observed during focused surveys; **NONE** = species not expected to occur due to the lack of suitable habitat, or the site's location outside of the species' range; **ABSENT** = potentially suitable habitat is present but the species was not observed during the focused surveys.

SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE																								
<i>Lycium brevipes</i> var. <i>hassei</i>	Santa Catalina Island desert thorn	Jun.	NONE	NONE	1B.1	Coastal bluff scrub and coastal scrub communities. 10-300 meters.	<b>ABSENT</b>																								
<i>Lycium californicum</i>	California box-thorn	Dec.-Aug.	NONE	NONE	1B.2	Coastal bluff scrub, coastal scrub. 10-300 meters.	<b>OBSERVED</b>																								
<i>Solanum wallacei</i>	Wallace's nightshade	Mar.-Aug.	NONE	NONE	1B.1	Chaparral, cismontane woodland; 3-410 meters.	<b>ABSENT</b>																								
<b>ANGIOSPERMS (MONOCOTYLEDONS)</b>																															
<b>Liliaceae</b>	<b>Lily Family</b>																														
<i>Calochortus catalinae</i>	Catalina mariposa lily	Feb.-Jun.	NONE	NONE	4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. 15-700 meters.	<b>POTENTIAL, NOT OBSERVED</b>																								
<b>Orchidaceae</b>	<b>Orchid Family</b>																														
<i>Piperia cooperi</i>	chaparral rein orchid	Mar.-Jun.	NONE	NONE	4.2	Chaparral, cismontane, valley and foothill grassland. 15-1,585 meters.	<b>NONE</b>																								
<b>Poaceae</b>	<b>True Grass Family</b>																														
<i>Dissanthelium californicum</i>	California dissanthelium	Mar.-May	NONE	NONE	1B.2	Coastal scrub. 5-500 meters.	<b>ABSENT</b>																								
<i>Hordeum intercedens</i>	Vernal barley	Mar.-Jun.	NONE	NONE	3.2	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools.	<b>NONE</b>																								
<p><b>Key to Species Listing Status Codes</b></p> <table> <tbody> <tr> <td>FE</td> <td>Federally Endangered</td> <td>SE</td> <td>State Listed as Endangered</td> </tr> <tr> <td>FT</td> <td>Federally Threatened</td> <td>ST</td> <td>State Listed as Threatened</td> </tr> <tr> <td>FC</td> <td>Federal Candidate</td> <td>SCE</td> <td>State Candidate for Endangered</td> </tr> <tr> <td>FPE</td> <td>Federally Proposed as Endangered</td> <td>SCT</td> <td>State Candidate for Threatened</td> </tr> <tr> <td>FPT</td> <td>Federally Proposed as Threatened</td> <td>SFP</td> <td>State Fully Protected</td> </tr> <tr> <td>FPD</td> <td>Federally Proposed for Delisting</td> <td></td> <td></td> </tr> </tbody> </table>								FE	Federally Endangered	SE	State Listed as Endangered	FT	Federally Threatened	ST	State Listed as Threatened	FC	Federal Candidate	SCE	State Candidate for Endangered	FPE	Federally Proposed as Endangered	SCT	State Candidate for Threatened	FPT	Federally Proposed as Threatened	SFP	State Fully Protected	FPD	Federally Proposed for Delisting		
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**OBSERVED** = species observed during focused surveys; **NONE** = species not expected to occur due to the lack of suitable habitat, or the site's location outside of the species' range; **ABSENT** = potentially suitable habitat is present but the species was not observed during the focused surveys.

SCIENTIFIC NAME	COMMON NAME	FLOWERING PERIOD	FEDERAL	STATE	CNPS	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE
<b>California Native Plant Society (CNPS)</b>							
<p><i>Rank 1A: Presumed extirpated in California and either Rare or Extinct elsewhere.</i></p> <p><i>Rank 1B: Rare, threatened, or endangered throughout their range.</i></p> <p><i>Rank 2A: Presumed extirpated in California, but more common elsewhere.</i></p> <p><i>Rank 2B: Rare, threatened, or endangered in California, but more common in other states.</i></p> <p><i>Rank 3: Plant species for which additional information is needed before rarity can be determined.</i></p> <p><i>Rank 4: Species of limited distribution in California (i.e., naturally rare in the wild), but whose existence does not appear to be susceptible to threat.</i></p> <p>Source: ESA PCR 2016.</p>				<p><u><i>New Threat Code extensions and their meanings:</i></u></p> <ol style="list-style-type: none"> <li>1 <i>Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)</i></li> <li>2 <i>Fairly endangered in California (20-80% occurrences threatened)</i></li> <li>3 <i>Not very endangered in California (&lt;20% of occurrences threatened or no current threats known)</i></li> </ol>			

**OBSERVED** = species observed during focused surveys; **NONE** = species not expected to occur due to the lack of suitable habitat, or the site's location outside of the species' range; **ABSENT** = potentially suitable habitat is present but the species was not observed during the focused surveys.

## APPENDIX C

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### SENSITIVE WILDLIFE SPECIES

## Appendix C: Sensitive Wildlife Species

Scientific Name	Common Name	Federal	State	Preferred Habitat	Potential For Occurrence
<b>INVERTEBRATES</b>					
<b>MOLLUSCA/GASTROPODA</b>					
<b>Snails and Slugs</b>					
<i>Haplotrema catalinense</i>	Santa Catalina lancetooth snail	NONE	NONE	Carnivorous terrestrial snail, life history not well known or described.	<b>POTENTIAL</b>
<i>Pristiloma shepardae</i>	Shepard's snail, island tightcoil snail	NONE	NONE	Minute terrestrial snail, life history not well known. Recorded near Avalon	<b>POTENTIAL</b>
<i>Radiocentrum avalonense</i>	Catalina mountain snail	NONE	NONE	Small air-breathing land snail, terrestrial pulmonate gastropod.	<b>POTENTIAL</b>
<i>Sterkia clementina</i>	San Clemente Island blunt-top snail, island birddrop snail	NONE	NONE	Small air-breathing land snail, terrestrial pulmonate gastropod.	<b>POTENTIAL</b>
<b>INSECTA/COLEOPTERA</b>					
<b>Beetles</b>					
<i>Cicindela hirticollis grvida</i>	sandy beach tiger beetle	NONE	NONE	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	<b>NONE</b> Present on Santa Catalina Island, but suitable habitat is not present on-site
<i>Cicindela senilis frosti</i>	senile tiger beetle	NONE	NONE	Inhabits dark colored mud in the lower zone and dried salt pans in the upper zone along marine shoreline from central California south to salt marshes of San Diego.	<b>NONE</b> Present on Santa Catalina Island, but suitable habitat is not present on-site

NONE = species not expected to occur due to the lack of suitable habitat, or the site's location outside of the species' range; NOT EXPECTED = preferred habitat was considered potentially present based on the literature review and anticipated habitat in the study area, however no individuals were observed and/or suitable habitat was absent based on the general field survey or focused surveys; POTENTIAL = preferred habitat was considered potentially present based on the literature review and observed habitat in the Project site.

Scientific Name	Common Name	Federal	State	Preferred Habitat	Potential For Occurrence
<i>Coelus globosus</i>	globose dune beetle	NONE	NONE	Inhabitant of coastal sand dune habitats from Bodega Head in Sonoma County to Ensenada, Mexico. Inhabits foredunes and sand hummocks. Burrows beneath the sand surface and is most common beneath dune vegetation.	<b>NONE</b> Present on Santa Catalina Island, but suitable habitat is not present on-site
<b>COLUBRIDAE</b>	<b>Colubrid Snakes</b>				
<i>Thamnophis hammondi</i> ssp.	Santa Catalina garter snake	NONE	NONE	Perennial and intermittent streams having rocky or sandy beds and artificially created aquatic habitats (manmade lakes and stock ponds); requires dense riparian vegetation.	<b>NONE</b> Present on Santa Catalina Island, but suitable habitat is not present on-site
<b>BIRDS</b>					
<b>ACCIPITRIDAE</b>	<b>Hawks</b>				
<i>Haliaeetus leucocephalus</i>	bald eagle	NONE	SE	Lower montane coniferous forest; old growth.	<b>POTENTIAL (N), POTENTIAL (F)</b>
<b>ALCIDAE</b>	<b>Auks, Murres, and Puffins</b>				
<i>Synthliboramphus hypoleucus</i>	Xantus's murrelet	FE	SE	Feeds at sea, nests in small crevices, caves and under dense bushes on arid islands in loose scattered colonies. It returns to the colony only at night, laying two eggs which are incubated for about a month	<b>POTENTIAL (N), NONE (F)</b>
<b>FALCONIDAE</b>	<b>Falcons</b>				
<i>Falco peregrinus anatum</i>	peregrine falcon	NONE	SE, SFP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	<b>POTENTIAL (N), POTENTIAL (F)</b>

**NONE** = species not expected to occur due to the lack of suitable habitat, or the site's location is outside of the species' range; **NONE (N)** = species not expected to nest due to the lack of suitable habitat, or the site's location is outside of the species' range; **NONE (F)** = species not expected to forage due to lack of food sources, or the site's location is outside of the species' range; **NOT EXPECTED** = preferred habitat was considered potentially present based on the literature review and anticipated habitat in the study area, however no individuals were observed and/or suitable habitat was absent based on the general field survey or focused surveys; **POTENTIAL** = preferred habitat was considered potentially present based on the literature review and observed habitat in the Project site.

Scientific Name	Common Name	Federal	State	Preferred Habitat	Potential For Occurrence
<b>STRIGIDAE</b>	<b>Owls</b>				
<i>Athene cunicularia</i>	burrowing owl	NONE	SSC	Open, dry grassland and desert habitats throughout California, or scrublands characterized by low-growing, widely spaced vegetation.	<b>POTENTIAL (N), POTENTIAL (F)</b>
<b>MAMMALS</b>					
<b>Canidae</b>	<b>Canines</b>				
<i>Urocyon littoralis catalinae</i>	Santa Catalina Island fox	FE	ST	Preferred habitat is complex layer vegetation with a high density of woody, perennially fruiting shrubs but lives in all of the island biomes.	<b>POTENTIAL</b> Observed on-site.
<b>SORICIDAE</b>	<b>Shrews</b>				
<i>Sorex ornatus willetti</i>	Santa Catalina shrew	NONE	SSC	Coastal marshes. Requires dense vegetation and woody debris for cover.	<b>POTENTIAL</b>
<b>VESPERTILIONIDAE</b>	<b>Vesper Bats</b>				
<i>Antrozous pallidus</i>	pallid bat	NONE	SSC	Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Night roosts may be in more open sites, such as porches and open buildings.	<b>POTENTIAL</b>

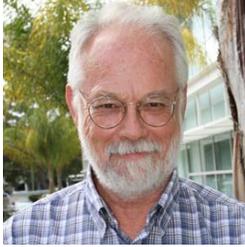
FE	Federally Endangered	SE	State Endangered
FT	Federally Threatened	ST	State Threatened
FC	Federal Candidate	SCE	State Candidate Endangered
FPE	Federally Proposed as Endangered	SCT	State Candidate Threatened
FPT	Federally Proposed as Threatened	SFP	State Fully Protected Species
FPD	Federally Proposed for Delisting	SSC	State Species of Special Concern

**NONE** = species not expected to occur due to the lack of suitable habitat, or the site's location is outside of the species' range; **NONE (N)** = species not expected to nest due to the lack of suitable habitat, or the site's location is outside of the species' range; **NONE (F)** = species not expected to forage due to lack of food sources, or the site's location is outside of the species' range; **NOT EXPECTED** = preferred habitat was considered potentially present based on the literature review and anticipated habitat in the study area, however no individuals were observed and/or suitable habitat was absent based on the general field survey or focused surveys; **POTENTIAL** = preferred habitat was considered potentially present based on the literature review and observed habitat in the Project site.

APPENDIX D

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BIOLOGIST RESUMES



# Daryl Koutnik, PhD

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## Principal, Biological & Regulatory Compliance

### EDUCATION

Ph.D., Botany, University of California, Davis

M.S., Botany, University of California, Davis

B.A., Mathematics and Biology, California State University, Northridge

### 25 YEARS EXPERIENCE

Daryl Koutnik has more than 25 years of experience managing and conducting biological resources field studies for environmental compliance and planning. Fourteen years of which he worked in and managed the environmental review section of the Los Angeles County Department of Regional Planning.

Dr. Koutnik has directed, managed, and performed biological resources inventories, special-status species surveys and identification, environmental impact assessments, biological constraints analyses, plant and wildlife studies, habitat restoration plans, and mitigation and monitoring plans for a wide variety of private and public sector clients. These analyses have been related to residential, commercial, industrial, infrastructure, and educational developments.

He is an expert in the application of federal and State Endangered Species Acts, the California Environmental Quality Act (CEQA), and other regulations relevant to biological resources, as well as processing and acquisition of Coastal Development Permits within the California Coastal Zone.

### Relevant Experience

**Selected Project Experience – Biology.** Dr. Koutnik has managed, reviewed, or prepared hundreds of biological reports. These have been prepared in compliance and/or coordination with CEQA, NEPA, USACE, USFWS, CDFW, and RWQCB. These projects include the Jurisdictional Delineation for the 28,000-acre Tejon Mountain Village Project to address 800 acres of waters and drainages; the biological assessment for the 5,130-acre Travertine Point Specific Plan in Riverside and Imperial counties; and the Hidden Creeks Estates EIR biological resources section for the City of Los Angeles.

**Selected Project Experience – EIRs.** Dr. Koutnik is experienced in leading the preparation of EIRs throughout Southern California. His projects include the 544-unit Shores Apartment residential development in Marina del Rey, the 216-unit Millennium-Playa Del Mar Apartments in Playa Vista, the 500-acre Transit Mix Surface Mining project in Soledad Canyon, and the 3,600-unit Northlake Residential development in Castaic.

**Expert Testimony.** Daryl testified before the California Coastal Commission (CCC) on the determination of environmentally sensitive habitat areas within the Coastal Zone of the Santa Monica Mountains for unincorporated Los Angeles County. He also provided expert testimony before the CCC on the revegetation of streamside banks within the California Coastal Zone.



# Ezekiel Cooley

## Senior Biologist / Regulatory Scientist

### EDUCATION

B.S., Natural Resources,  
(Emphasis: Wildlife),  
Central Michigan  
University, Mt. Pleasant,  
Michigan

### 17 YEARS EXPERIENCE

### PERMITS / CERTIFICATIONS

Qualified California  
Rapid Assessment  
Method (CRAM)  
Practitioner, 2012

CDFW Scientific  
Collecting Permit #SCP-  
013181

CDFW Rare, Threatened,  
and Endangered Plant  
Voucher Collecting  
Permit #2081(a)-10-08-V

### SPECIALIZED TRAINING

Desert Tortoise Council,  
Desert Tortoise Field  
Techniques Workshop,  
2014

AEP, CEQA Essentials  
Workshop, 2014

Wetland Delineation  
Course, Wetland  
Training Institute, 2011

Learning California Bird  
Sounds, Sea & Sage  
Audubon Society, 2010

Section 404 and State  
Permits: Regulating  
Activities Affecting  
Wetlands, Streams, and  
Other Waters, UCLA  
Extension, 2008

### PROFESSIONAL AFFILIATIONS

Desert Tortoise Council

Ezekiel Cooley is a biologist with 17 years of hands on experience. He has performed field work involving wildlife and habitat evaluations, avian and invertebrate trapping, jurisdictional delineations, habitat management plans, construction/mitigation monitoring, and map creation. Zeke specializes in floral and faunal surveys and performs Geographic Information Systems (GIS) impact analysis, cartographic production, Global Positioning System (GPS) data collection, and data input and manipulation to map project-related sensitive plants and animals, and vegetation communities. He has also prepared regulatory permitting packages, compliance packages, and coordinated with regulatory agencies and clients.

### Relevant Experience

**Wildlife Surveys.** Zeke has performed burrowing owl surveys for residential development projects in Riverside, Orange, San Bernardino and Los Angeles counties, and participated in a passive relocation project for burrowing owls. He also conducted a regional alluvial fan sage scrub survey that spanned throughout Southern California. Zeke has performed oak tree surveys in the Santa Monica Mountains and Newhall, as well as native tree surveys in Santa Barbara, and Orange counties. He has performed raptor and nesting bird surveys, least Bell's vireo surveys, and assisted with multiple fairy shrimp, and multiple coastal California gnatcatcher, and western spadefoot toad surveys throughout Southern California. In related work, Zeke performed brown-headed cowbird trapping and control on sensitive habitat areas for the coastal California gnatcatcher and least Bell's vireo. He has monitored riparian habitat and nesting birds for multiple construction and restoration projects in Riverside and Los Angeles counties. He has also participated in an osprey relocation program for the Michigan Department of Natural Resources and hazed and trapped migratory birds at the Detroit Metropolitan Airport.

**Geographic Information Systems.** Zeke has experience digitizing vegetation maps, jurisdictional delineations, and tree surveys throughout Southern California, as well as running impact analyses for development projects. Additionally, he served as a GIS Technician for Central Michigan University where he created multiple thematic maps and information layers for graduate students. Zeke also managed the Avian Influenza database at the U.S. Department of Agriculture (USDA) Animal Plant Health Inspection Service – Wildlife Services (APHIS) and mapped sample locations with ArcGIS.

**Wetland Ecology.** Zeke has assisted with jurisdictional waters and wetland delineations in San Bernardino, Riverside, Kern, Los Angeles, San Diego, and Orange counties. He completed the Significant Nexus/Jurisdictional determination section of Jurisdictional Delineations, including digitizing drainages, jurisdictional areas, watersheds, and the significant nexus for the associated drainage.



# Lauren Singleton

## Biologist

### EDUCATION

M.S., Biology, California State University, Long Beach

B.S., Biology/Ecology (Minor: Chemistry), cum laude, California State University, Long Beach

### 2 YEARS EXPERIENCE

#### PERMITS / CERTIFICATIONS

CDFW Scientific Collecting Permit #SCP-013181

Qualified California Rapid Assessment Method (CRAM) Practitioner, 2012

#### SPECIALIZED TRAINING

Waterfowl of North America, Sea & Sage Audubon Society, 2015

Introduction to California Birds, Sea & Sage Audubon Society, 2014

#### PROFESSIONAL AFFILIATIONS

Sea & Sage Audubon Society

Lauren Singleton is a biologist specializing in stream ecology and aquatic resources. With academic and practical study of Southern California's biological resources, Ms. Singleton has applied her expertise in the in laboratory, public sector, and professional consultant settings. Her relevant coursework and training has included avian species, entomology, herpetology, vascular plants, California Rapid Assessment Method (CRAM) training, Surface Water Ambient Monitoring Program (SWAMP) protocols, and Geographic Information Systems (GIS).

### Relevant Experience

**General Biology.** Lauren has trapped, identified, and performed surveys for various wildlife and insect species. As a field naturalist for Orange County Department of Education, she instructed students and volunteers regarding native plant restoration, plant and animal identification, and adaptations. She has performed biological inventories, collected and identified various insects and vector species (mosquitos, red imported fire ants, and ticks), and prepared the data and reports associated with these studies. In addition to common species surveys, Lauren has also assisted with surveys for the federally endangered southwestern willow flycatcher in the San Bernardino National Forest and conducted habitat assessments and focused surveys for the burrowing owl in Riverside and San Bernardino counties. She has conducted biological assessments, which included the identification of plants and plant communities, sensitive plant surveys, and tree surveys in Los Angeles, Orange, Riverside, and San Bernardino counties.

**Aquatic Resources.** As a university stream ecologist and consulting biologist, Lauren assessed and monitored flood control channels and streams in Orange, Riverside, and San Bernardino counties and performed stream bioassessments of the Santa Ana and San Jacinto watersheds. In this role she applied CRAM, performed riparian habitat assessments, collected samples, and trained and supervised field crews.

**Regulatory Compliance and Environmental Documentation.** Lauren has prepared documentation for biological resources assessments, sensitive species surveys, and mitigation monitoring. Document preparation tasks have included CNDDB database searches, impact analyses, and MSHCP consistency analyses.

**Monitoring.** Lauren performed vegetation monitoring to assess the condition of riparian and wetland vegetation along Bodle Ditch in the Town of Mammoth Lakes. Monitoring was conducted to determine potential changes to vegetation resulting from ceasing diversion flows from Lake Mary into Bodle Ditch. She also monitored the vegetation clearing along the banks of Old Tujunga Wash in the City of Burbank to ensure only vegetation within the specified project area was removed. Ms. Singleton also performed monitoring of vegetation restoration along Malibu Creek in the City of Malibu.

## Education

- M.B.A., National University, San Diego, California, 1987
- B.A., Biology, (Minor: Botany), University of California, Santa Barbara, 1976

## Permits/Certifications

- International Society of Arboriculture-Certified Arborist #WE-9854A
- CDFW Rare, Threatened, and Endangered Plant Voucher Collecting Permit #2081(a)-11-65-V

## Continuing Education

- Workshop on Raptor Nest Monitoring, Bloom Biological, Irvine, 2014
- California Invasive Plants Council Annual Symposiums, California, 2010, 2013
- California Native Plant Society (CNPS), Conservation Conference, San Diego, 2012
- Southern California Botanists, Annual Symposiums, 2010, 2011, 2012, 2013
- Field-Based Rare Vegetation Sampling/Mapping Workshop, California Native Plant Society, 2011
- Birds of Southern California by Sound: 10 Week Workshop, Audubon Society, Orange County Chapter, 2011

## Affiliations

- California Invasive Plant Council
- California Native Plant Society

## Summary

Bob Huttar is an arborist, botanist, and biologist with an expertise in arboriculture, plant communities, birds, habitat restoration, and butterflies. His professional experience includes surveys for sensitive floral and faunal species, tree and woodland surveys, botanical surveys, and habitat restoration. Mr. Huttar has experience in preparing technical biological resources assessments in accordance with CEQA guidelines and is well-versed with the requirements of Habitat Conservation Plans and the Local Plans of Orange, Los Angeles, San Diego, and the Inland Empire. He is experienced with a variety of native and exotic flora and fauna through his work and while conducting field surveys and invasive plant control projects.

## Experience

*Arboriculture:* Mr. Huttar has performed numerous tree surveys which involved assessing the value of inventories of trees and recommending mitigation opportunities as related to state and local ordinances in San Bernardino, Los Angeles, Orange, and Riverside counties. Mr. Huttar has conducted field surveys of oak woodlands on 1,400 acre Newhall Ranch in Los Angeles County and completed reports assessing the impacts of proposed development projects in the Santa Monica Mountains. Among these are the 91-acre oak survey on the Castro Peak Property and a 60-acre oak survey on the Rancho Francisco Project site. Mr. Huttar also performed a 20-acre oak survey for the Clinton Keith Road Project in Wildomar, California. Additional projects include the Aidlin Property Stevenson Ranch, including a survey of more than 50 southern California black walnut trees; City of Chino Hills Country Club Project, a 29-acre survey of walnut scrub and woodland within a 537-acre property; and a tree survey on 110-acre Rio Santiago Project in Tustin.

*Botany:* Drawing from his years of experience and academic background, Mr. Huttar regularly performs botanical surveys and assessments. He has conducted numerous sensitive plant surveys throughout Southern California and Inyo County for such plants as the long-horned spineflower, the Catalina mariposa lily, and in Mammoth Lakes for the sub-alpine fireweed. His field work includes numerous vegetation mapping projects in excess of 100 acres in Orange and Riverside Counties.

*Wildlife:* Mr. Huttar has conducted numerous biological reconnaissance surveys which involved the identification of birds in many locations in Southern California. Among these are numerous nesting bird surveys in Los Angeles, Orange, and Riverside counties. Mr. Huttar has conducted habitat assessments and focused surveys for the burrowing owl in Orange and Riverside counties. Mr. Huttar has also participated in presence/absence studies for least Bell's vireo and coastal California gnatcatcher in Orange and Riverside counties. Mr. Huttar has participated in presence/absence surveys for the San Bernardino Kangaroo Rat in San Bernardino County. He is an integral member of a team conducting protocol butterfly surveys establishing baseline conditions on the Irvine Ranch in Orange County.

*Regulatory Compliance and Environmental Documentation:* Mr. Huttar has prepared documentation for biological resources assessments, jurisdictional delineations, mitigated negative declarations, due diligence constraints analyses, regulatory permitting packages, National Environmental Policy Act (NEPA) and CEQA compliance, sensitive species surveys, and mitigation monitoring. Document preparation tasks have included literature reviews, CNDDDB database searches, historic aerial analyses, impact analyses, habitat conservation and local plan consistency analyses, mitigation recommendations.

*Monitoring:* Mr. Huttar has performed pre-construction, construction, mitigation, and restoration monitoring for numerous projects in Southern California. He performed pre-construction nesting bird surveys and construction monitoring for work on the 1,100-acre Audie Murphy Ranch in Riverside County the 3-mile Santa Ana River Interceptor Pipeline Project in Orange County, the 1.5-mile San Diego Creek Channel maintenance project in Irvine. Mr. Huttar has performed annual monitoring for many projects including an approximately 3.5-mile-long roadside restoration project in the Santa Monica Mountains, a 3-acre habitat restoration project in Mason Park Regional Park in Orange County, and several residential developments mitigation habitat restoration projects in Riverside County.

*Restoration:* As a part of PCR's on-going work for the Significant Ecological Area (SEA) Study for the Los Angeles County General Plan Update, Mr. Huttar recently worked on updates to the nomenclature for plant communities within the proposed SEAs to comply with current CDFW and CNPS standards.

Mr. Huttar has led many invasive plant control and restoration projects, led field surveys, and prepared reports associated with the 38,000-acre Irvine Ranch. In addition to surveying, Mr. Huttar participated in replanting approximately two acres of Tecate cypress in Gypsum Canyon.

