Final Biological Assessment

ORMOND BEACH
OXNARD, VENTURA COUNTY
CALIFORNIA

Prepared For:

Aspen Environmental Group
30423 Canwood Street, Suite 215
Agoura Hills, CA 91301
Contact: Susan Walker
(818) 597-3407

Contacts:

Michael Josselyn, PhD., PWS
josselyn@wra-ca.com

Tim DeGraff
degraff@wra-ca.com, M.S., PWS

Date:

July 2007

wra
ENVIRONMENTAL CONSULTANTS

2169-G East Francisco Blvd., San Rafael, CA 94901 (415) 454-8868 tel (415) 454-0129 fax info@wra-ca.com www.wra-ca.com

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

Authors: Dr. Michael Josselyn
Tim DeGraff
Jeff Dreier

[1] The digital data included in Appendix E includes pdf files of the report as well as the aerial photographs and GIS files utilized to create the report figures.

1.0 INTRODUCTION

On July 12, 13, and 14, 2004, WRA biologists Tim DeGraff, Jeff Dreier, and Trina Schneider performed a biological site assessment of the 1,500-acre Ormond Beach proposed restoration area (Study Area) in Oxnard, Ventura County, California (Figure 1). The purpose of this field visit was to 1) determine the potential occurrence of special status plant and wildlife species at the Study Area and 2) determine the presence or absence of sensitive habitats at the Study Area. This biological assessment report presents the results of the July 2004 field visits, including a characterization of the existing biological resources at the site, and a GIS map of habitat and wildlife areas. The field visits were conducted in July 2004; therefore, this study does not meet protocol-level survey requirements for any plant or wildlife species. The primary purpose of the report is to identify potential special status species that may occupy sensitive habitats within the Study Area. The analysis is based upon habitat conditions observed in July 2004 and a review of biological databases and other reports prepared within the Study Area. This assessment also identifies biological resources that may require further study and/or protocol-level surveys.

This report is to be used as a planning tool to help the project team predict possible impacts resulting from implementation of potential habitat restoration plans. The characterization of the existing biological resources can be used to: 1) provide information on habitats to be protected, enhanced, or restored, 2) develop alternatives that will support more foraging and breeding opportunities for species within the vicinity of the Study Area, 3) determine the potential location of special status species habitat in order to protect those species and to provide additional habitat for their continued use of the area, and 4) determine opportunities and constraints to plants (dispersal) and wildlife (movement) corridors within the Study Area.

A biological assessment provides general information on the potential presence of sensitive species or habitats. The biological assessment is not an official protocol level survey for listed species that may be required for project approval by local, state, or federal agencies. However, specific findings on the occurrence of any species or the presence of sensitive habitats may require that protocol surveys be conducted. This assessment is based on information available at the time of the study and on-site conditions that were observed on the date of the site visits.

1.1 General Study Area Description

The Study Area totals approximately 2,000 acres and is located in the City of Oxnard, Ventura County California (Figure 1). Land parcels present within the Study Area include: 1) the 309-acre State Coastal Conservancy/The Nature Conservancy parcel (Nature Conservancy); 2) the 350-acre Southland Sod Farms parcel south of McWane Boulevard, between Edison Drive and Arnold Road (Southland Sod); 3) the 24-acre Agromin parcel at the southeast corner of the Southland Sod parcel (Agromin); 4) the 265-acre State Coastal Conservancy parcel south of Southland Sod and bordering Ormond Beach (State Coastal Conservancy), 5) the 580-acre Ventura County Game Preserve, 6) the 350-acre Point Mugu Game Preserve west of the Naval Base Ventura County, Point Mugu, 7) the 37-acre Reliant Energy Ormond Beach Generating Station surrounded by the State Coastal Conservancy parcel (Reliant Energy), 8) the 38-acre parcel at the corner of Hueneme Road and Perkins Road (Perkins), and the 7 acre Hueneme Drain Property located in the northwestern region of the Study Area (Figure 2).

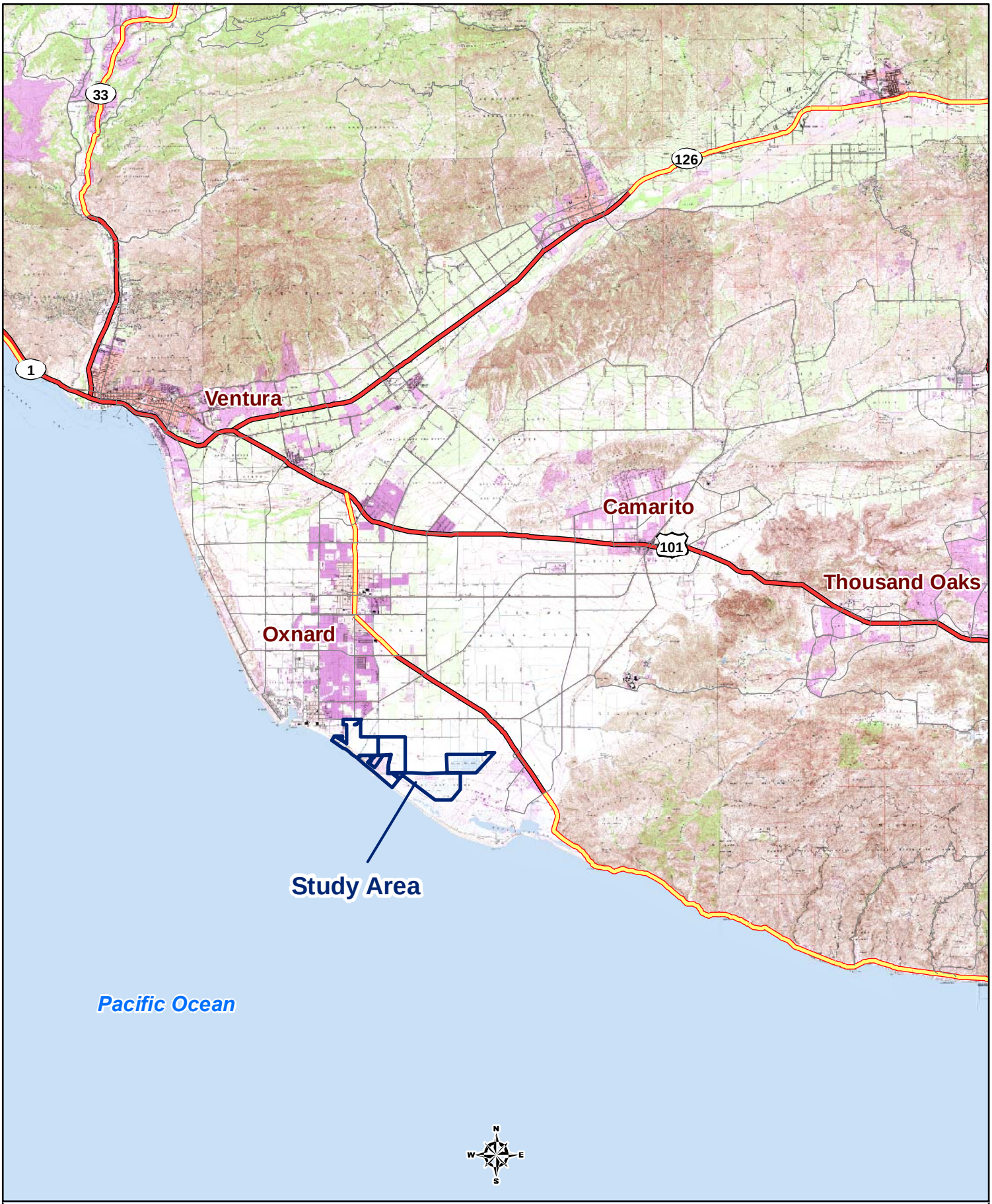


Figure 1. Study Area Location Map

1:225,000

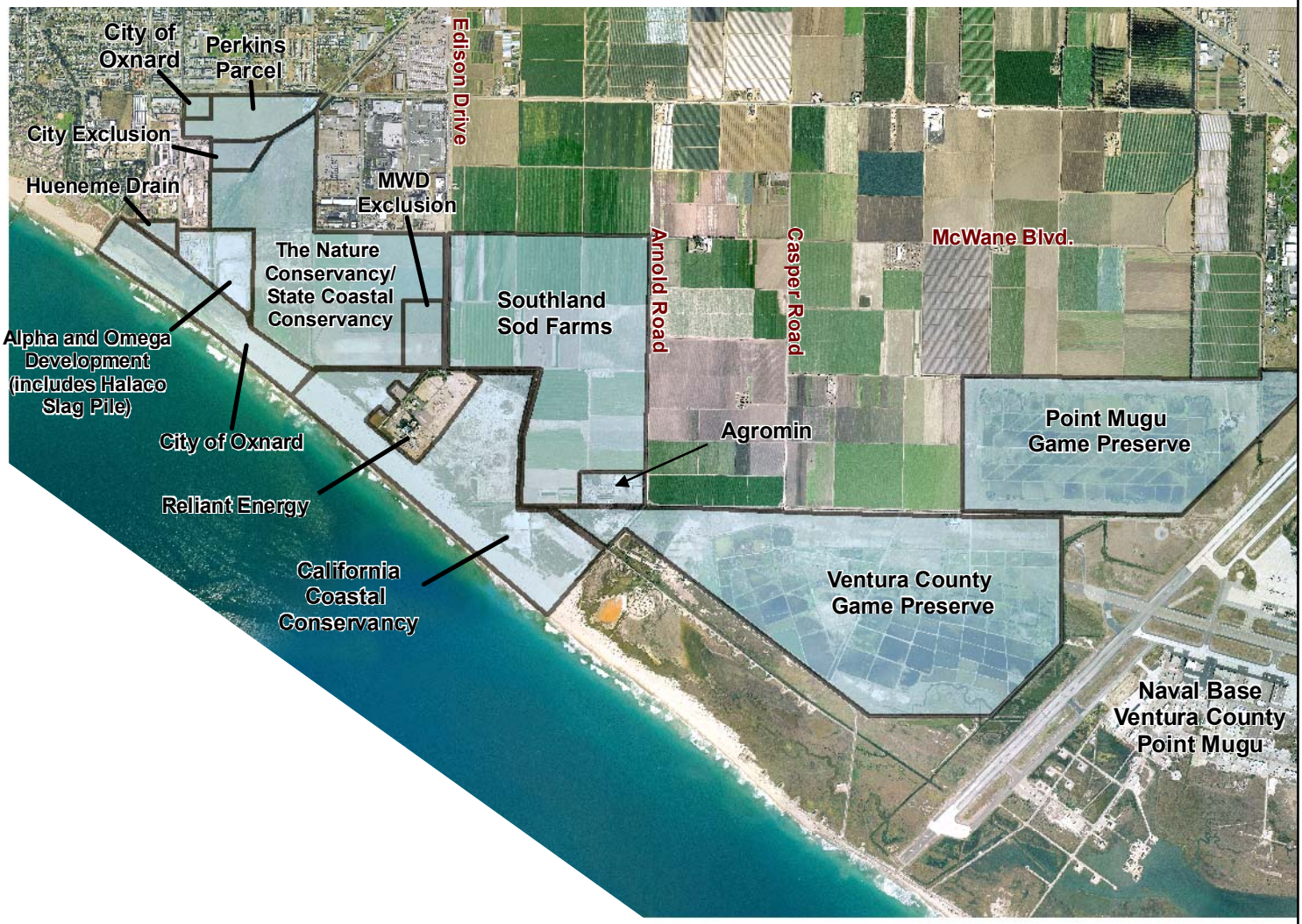
3 1.5 0 3 Miles

4 2 0 4 Kilometers

Ormond Beach
Oxnard, Ventura County

wra
ENVIRONMENTAL CONSULTANTS

Date: July 2007
Map By: Michael Rochelle
Basemap: USGS Topo Quads, Mosaic file o_se0206.sid
Filepath: I:\Acad2000 files\13006\gis\Arcmap\LocationMap.mxd



N
W E
S

Figure 2. Study Area Parcel Map

1:39,600

3,000 1,500 0 3,000 Feet

1,000 500 0 1,000 Meters

Ormond Beach
Oxnard, Ventura County

wra
ENVIRONMENTAL CONSULTANTS

Date: July 2007
Map By: Michael Rochelle
Filepath: I:\Acad2000 files\13006\gis\
Arcmap\July07Revisions\ParcelMap_Figure2.mxd

Figure 1. Study Area Location Map

Figure 2. Study Area Land Parcels

The 309-acre Nature Conservancy parcel includes two areas that remain in public ownership, shown as exclusions in Figure 2. A 13-acre exclusion is owned by the City of Oxnard, and a 20-acre exclusion is owned by the Municipal Water District, leaving 276 acres co-owned by the State Coastal Conservancy and The Nature Conservancy.

To the west of the Nature Conservancy parcel is the Alpha and Omega Development Project site. The western portion of this site is an abandoned metal recycling facility formerly operated by Halaco Engineering Corporation; the smelter portion of the facility was allegedly built upon an open dump operated by the City of Oxnard until 1962 (USEPA 2007). The eastern portion of the site is the Halaco slag pile, now owned by Chickadee Remediation Company. This area will be referred to as the Halaco slag pile for this study. It was not included in the Study Area, and development appears to have removed all former coastal habitats.

The primary land uses and habitat types within the Study Area consist of agriculture, industry, and wetlands. An extensive beach-dune complex runs along the western boundary of the Study Area from southeast of Port Hueneme to the northwestern boundary of the Naval Base Ventura County, Point Mugu, which borders the Study Area on the southeast.

The wetlands within the Study Area historically were part of a salt marsh and brackish water lagoon and dune system. These lagoons were located behind a narrow sandy barrier beach of low dunes and were fed by water from creeks and surface flow over the plain, and inundated by salt water during high tides or storms. Periodically, the barrier beach was breached by discharge of meandering river flows or the action of winter storm waves. Some of the lagoons likely remained open to the ocean for a period after the breaching event. Tidal connections have likely always been muted by a beach sill. Some hyperhaline or euryhaline wetlands may have formed naturally. The site probably received most of its water as runoff from inland sources and from the site's high water table.

The wetlands within Ormond Beach once totaled 1,000 acres; after conversion to agriculture and development approximately 250 acres remain. Drainage and developments have also left many of the wetlands within the Study Area hydrologically isolated and significantly reduced in size. The remaining wetlands onsite are degraded from compaction, off-road vehicle use, and dumping, are contaminated from runoff, and may suffer from hypersalinity due to the lack of flushing. General wetland types within the Study Area include seasonally inundated brackish and freshwater marshes, tidal salt marshes, and isolated (formerly tidal) salt marshes. Open beach and coastal dune ecosystems also are present.

Endangered and threatened species within the Study Area include such species as the Western Snowy Plover (*Charadrius alexandrius nivosus*), California Least Tern *(Sterna antillarum (=albifrons) browni*), Brown Pelican *(Pelecanus occidentalis californicus*), Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi)*, tidewater goby (*Eucyclogovius newberryi)*, and salt marsh bird's-beak (*Cordylanthus maritimus ssp. maritimus*). There are also many other special status species present within the Study Area including: Double-crested Cormorant *(Phalacrocorax auritus)*, White-tailed Kite *(Elanus leucurus*), South Coast garter snake *(Thamnophis sirtalis ssp*), globose dune beetle *(Coelus globosus)*, red sand-verbena (*Abronia maritima*) spiny rush (*Juncus acutus ssp. leopoldii*), Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*), and woolly seablite (*Suaeda taxifolia*). Additionally, more than 200 migratory bird species have been documented within the Ormond Beach and adjacent Mugu Lagoon wetland complex. More shorebird species are known from this area than any other site in Ventura County (Coastal Conservancy 2003).

1.2 Regulatory Background

1.2.1 Special Status Species

Special status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These Acts afford protection to both listed and proposed species. In addition, California Department of Fish and Game (CDFG) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFG special status invertebrates are all considered special status species. Although California Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Plant species on California Native Plant Society (CNPS) Lists 1 and 2 are also considered special status plant species. Impacts to these species are considered significant according to the California Environmental Quality Act (CEQA). The CNPS List 3 and 4 plants have little or no protection under CEQA, but are included in this analysis for completeness.

1.2.2 Sensitive Habitats

Sensitive habitats include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are regulated under federal regulations (such as the Clean Water Act), state regulations (such as the Porter-Cologne Act, the California Department of Fish and Game's Streambed Alteration Program, the California Coastal Zone Management Act (Coastal Act), or the California Environmental Quality Act), or local ordinances or policies (City or County Tree Ordinances, Special Habitat Management Areas or General Plan Special Land Use areas).

<u>Waters of the United States</u>

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act. "Waters of the U.S." are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands stated in the *Corps of Engineers Wetlands Delineation Manual* (1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water line (OHW). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into "Waters of the U.S." (including wetlands) generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

Waters of the State

"Waters of the State" are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact "Waters of the State," are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

Essential Fish Habitat

Under the Magnuson-Stevens Fishery Management and Conservation Act (as amended Public law 94-265 as amended through October 11, 1996), the National Oceanic and Atmospheric National Marine Fisheries Service (NOAA Fisheries Service), regional fishery management councils and the federal agencies sponsoring projects are mandated to identify and protect important marine and anadromous fish habitat.

The regional fishery management councils with the assistance of the NOAA Fisheries Service, are required to delineate "essential fish habitat" (EFH) for all managed species of fish. The Act defines EFH as, "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity." Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with the NOAA Fisheries Service regarding the potential effects of their actions on EFH and respond in writing to the NOAA Fisheries Service recommendations. Essential Fish Habitat consultations can generally be met through a Section 7 consultation with representatives of the NOAA Fisheries Service.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by the California Department of Fish and Game (CDFG) under Sections 1600-1607 of the State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream;" therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is

dependent on, and occurs because of, the stream itself" (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFG.

Coastal Zone Wetlands

For projects located within the California Coastal Zone, with regards to wetlands, rather than utilizing a three parameter approach (presence of hydrophytic vegetation, wetland hydrology, and hydric soils) used at the federal level by the Corps, the Coastal Act uses a broader definition. This definition often only requires the presence of wetland plants or the presence of hydric soils (generally referred to as the "one parameter approach". The Coastal Act defines wetlands as:

> *"Wetland means lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.*
>
> (Public Resources Code § 30121)

The California Coastal Commission (CCC) has also adopted the following definition of a wetland:

> *Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats.*

The Ventura County Planning Division (2001) states that all projects on land either in a designated wetland, or within 100 feet of such designation shall be sited and designed to prevent impacts which would significantly degrade the viability of the wetland. Additionally, the County supports formal recognition of the value of the Ormond Beach saltmarshes and their enhancement or restoration as such by the landowners, CDFG, the USFWS, NOAA Fisheries Service, and other appropriate agencies.

Sensitive Plant Communities

Sensitive plant communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFG. CDFG ranks sensitive communities as 'threatened' or 'very threatened' and keeps records of their occurrences in its Natural Diversity Database. Sensitive plant communities are also identified by CDFG on their *List of California Natural Communities Recognized by the CNDDB (*California Natural Diversity Database*)*. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFG or USFWS must be considered and evaluated under the California Environmental Quality Act

(California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county General Plans or ordinances.

2.0 METHODS

On July 12, 13 and 14th, 2004 the Study Area was traversed on foot to determine (1) plant communities present within the Study Area, (2) if existing conditions provided suitable habitat for any special status plant or wildlife species, and (3) if sensitive habitats were present. All plant and wildlife species encountered were recorded, and are summarized in Appendix B. Some portions of the Study Area were inaccessible during this period, but habitats and conditions on these sites were described where feasible, as detailed in the Results (Section 3.1) of this report.

2.1 Plant Communities

When natural, undisturbed plant communities are present within a Study Area, upland habitats are classified based on existing descriptions developed by the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) or *The Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995). However, due to the disturbed nature of many of the plant communities within the Study Area, it was necessary to identify, in some cases, variants of plant community types or to describe non-vegetated areas that are not described in the literature. Wetland communities were generally classified based upon their hydrologic regime and further described using the classification system described in Ferren et al. (1996). Figure 3 shows the general location and extent of the plant communities observed in the Study Area. See Appendix D for representative site photographs of the observed plant communities.

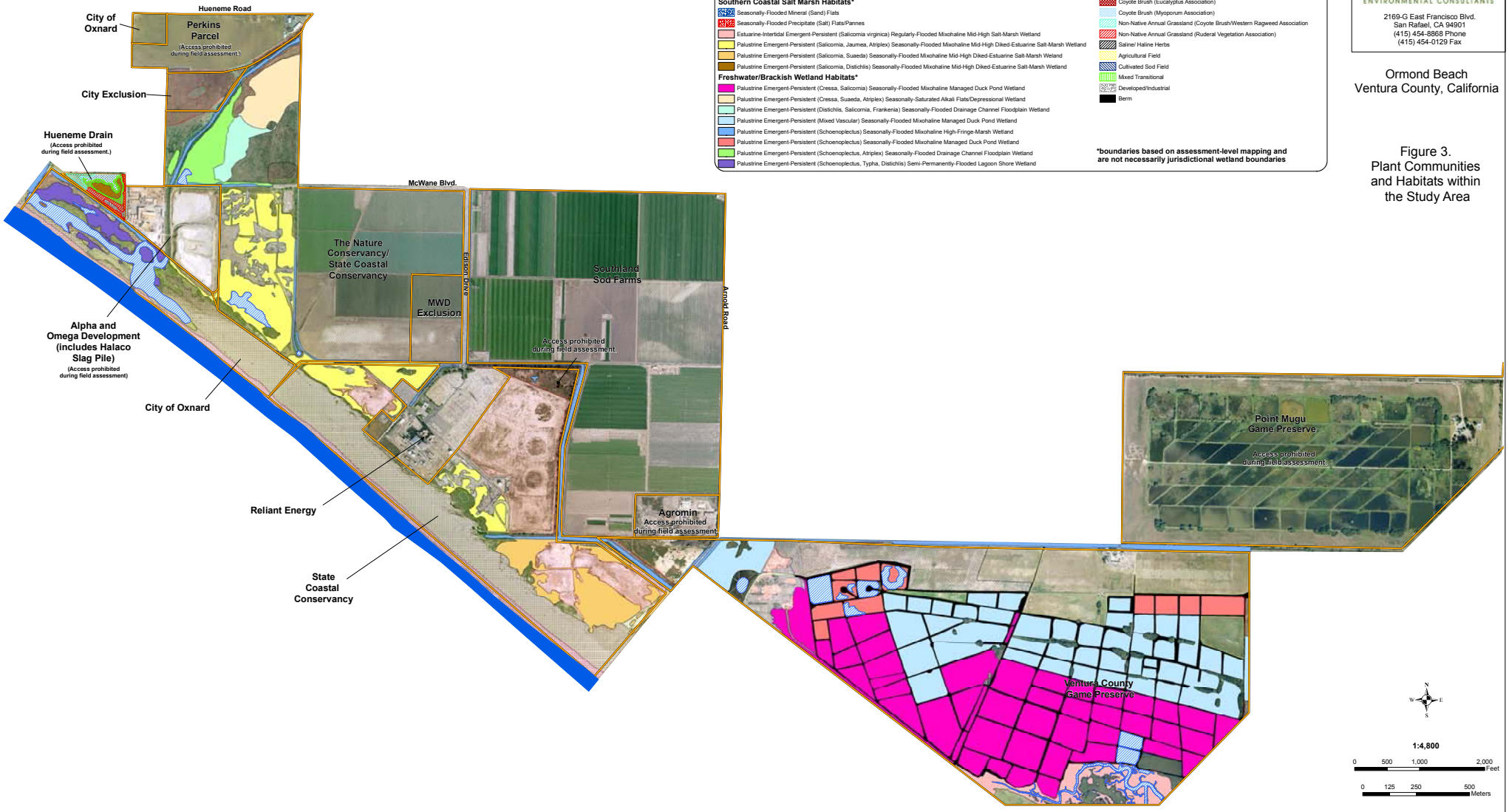
2.2 Sensitive Plant Communities and Aquatic Features

Plant communities identified within the Study Area were evaluated to determine if they are considered sensitive under federal or state regulations or policies. Special methods used to determine potential jurisdiction under these regulations and policies are given below.

2.2.1 Wetlands and Waters

The Study Area was surveyed to determine if any wetlands and "waters" potentially subject to jurisdiction by the Corps, RWQCB, or CDFG were present. The assessment-level evaluation was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status[2] of OBL, FACW, or FAC as given on the USFWS List of Plant Species that Occur in Wetlands (Reed 1988). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, algal mats and drift lines, or indirect indicators (secondary indicators), such as a positive fac-neutral test. Some indicators of

[2] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Figure 3.
Plant Communities and Habitats within the Study Area

Date: July 2007
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: I:\Acad 2000\13006\GIS\ArcMap\July07Revisions*.mxd

Figure 3. Plant Communities and Habitats Within Study Area

wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual and Field Indicators of Hydric Soils in the United States (NRCS 2002).

The preliminary "waters" assessment was based primarily on the presence of unvegetated, ponded areas or flowing water, or evidence indicating their presence such as a high water mark or a defined drainage course.

A protocol-level delineation was not conducted during the course of this study. Collection of additional data will be necessary to prepare a delineation report suitable for submission to the Corps.

2.2.2 Riparian Habitat

An inspection was conducted to determine if the banks of drainages, streams and other aquatic features within the Study Area supported hydrophytic or stream-dependent woody plant species (riparian species). Streams supporting riparian vegetation were noted and the width of the riparian habitat on each side of the stream was recorded.

2.3 Special Status Species

2.3.1 Literature Review

Potential occurrence of special status species in the Study Area was evaluated by first determining which special status species occur in the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special status species included the Oxnard, Point Mugu, and Camarillo 7.5 minute USGS quadrangle and the six surrounding USGS quadrangles. The following sources were reviewed to determine which special status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- California Natural Diversity Database records (CNDDB) (CDFG 2007)
- USFWS Quadrangle Species Lists (USFWS 2004)
- CNPS Electronic Inventory records (CNPS 2007)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings and Hayes 1994)
- Integrated Natural Resources Management Plan (INRMP), Naval Base Ventura County (NBVC) Point Mugu, California (Tetra Tech 2002)
- Ormond Beach Wetland Restoration and Management Program (McClelland 1985)
- Results of a Biologcal Survey of an Approximately 309-acre Parcel at Ormond Beach, City of Oxnard, California (Jones & Stokes 1998)
- Biological Resource Surveys for Ormond Beach Property (ERM 2002)
- North Ormond Beach flood control management plan (Impact Sciences, Inc. 1996)
- Bird List Compilation from the Sod Farms on Oxnard Plain (David Pereksta, Ventura USFWS)
- South Ormond Beach Wetland Restoration and Management Plan, Final Draft (Jones & Stokes 1994)

2.3.2 Site Assessment

A site visit was conducted to search for suitable habitats within the Study Area and for those species identified as occurring within the vicinity. Potential for special status species to occur in the Study Area was then evaluated according to the following criteria:

> (1) Not Present. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime). The species has an extremely low probability of being found on the site.
>
> (2) Low Potential. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species has a low probability of being found on the site.
>
> (3) Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
>
> (4) High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
>
> (5) Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable (uncommon wildlife species observed on the site (incidental occurrence observation) receive a “low” potential rating if the site is lacking most habitat components).

Appendix A presents the special status plant and wildlife species with a potential to occur within the Study Area, their habitat requirements, and a rating of potential for occurrence. A biological assessment is intended to identify suitable habitat for special status species known to occur in the vicinity in order to determine their potential to occur within the Study Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special status species was observed during the site visits, its presence was recorded and discussed.

Appendix C presents aerial photographs of the Study Area delineating potential habitat for nine (9) species which occur within the Study Area; California Least Tern, Belding’s Savannah Sparrow, White-faced Ibis, White-tailed Kite, Northern Harrier, Loggerhead Shrike, South Coast garter snake, and wandering skipper. Potential habitat is determined by analyzing a suite of habitat characteristics such as; vegetation or substrate composition and/or structure, local hydrology, protection from weather, presence of predators (including humans and feral pets), prey availability, etc. Determinations of potential habitat are assigned based on the results of the site visits. In the case of the White-tailed Kite, Northern Harrier and Loggerhead Shrike, they are represented with one map since they prefer similar habitats and often overlap in California.

3.0 RESULTS AND DISCUSSION

The following sections present the results and discussion of the biological assessment for special status species and sensitive habitats within the Study Area.

3.1 Plant Communities

Please refer to Figure 3 for the location of the plant communities described within the Study Area.

3.1.1 Upland Plant Communities

Cultivated Sod Fields

This community represents the largest habitat within the Study Area. The habitat is comprised of inactive and active agricultural land used for the sole purpose of cultivating sod. These fields are located near the center of the Study Area along the northern boundary in the Southland Sod parcel. Tall fescue (*Festuca arundinacea*) is the dominant planted species in this community.

Agricultural Fields

During the July 2004 site visits, this community was recently tilled and largely unvegetated. In addition, irrigation infrastructure was being installed in several of the agricultural fields. This community was found in the northeastern portion of the Ventura County Game Preserve.

Non-Native Annual Grassland (Ruderal Vegetation Association)

The non-native annual grassland/ruderal communities within the Study Area are disturbed habitats that have been significantly impacted through previous agricultural operations, historical development, or through other human-induced impact that have allowed colonization by non-native species. This community is scattered throughout the Study Area, with the largest communities located northwest of the Oxnard Industrial Drain and immediately east of the Reliant Energy parcel. Although access to the Perkins parcel was restricted, based upon an evaluation of a September 2003 aerial photograph, topographic information, and visual observations from adjacent roads, the plant community within the central and western regions appear to resemble non-native annual grass (ruderal vegetation association). In addition, access to the Agromin parcel located along Arnold Road was restricted during the July 2004 site visits. Based upon an evaluation of this parcel from adjacent areas, there appeared to be small pockets of non-native grasses and forbs; however, this parcel is primarly comprised of developed pads, infrastructure, compost, and other materials. The Agromin parcel appears to be devoid of functioning habitat.

The plants occupying these communities consisted primarily of non-native grasses and forbs. The following non-native species occurred within this habitat at varying densities and combinations: Russian knapweed (*Acroptilon repens*), soft chess (*Bromus hordeaceus*), rip-gut brome (*Bromus diandrus*), cheatgrass (*Bromus tectorum*), Italian rye-grass (*Lolium multiflorum*), common barley (*Hordeum vulgare*), lambs quarters (*Chenopodium album*), sow thistle (*Sonchus sp.),* bristly ox-tongue (*Picris echioides*)*,* black mustard (*Brassica nigra*), white sweetclover (*Melilotus alba*), burclover (*Medicago polymorpha*), iceplants (*Carpobrotus chilensis, C. edulis)*, wild radish (*Raphanus sativus*), arundo (*Arundo donax*), and myoporum

(*Myoporum laetum*). Infrequent native species observed within this community included coyote brush (*Baccharis pilularis*), mulefat (*Baccharis salicifolia*), brass buttons (*Cotula coronopifolia*), and heliotrope (*Heliotropium curassavicum*).

Non-Native Annual Grassland (Coyote Brush/Western Ragweed Association)

This habitat is similar to the non-native annual grassland/ruderal habitats described above; however, this community also contains high densities of coyote brush (*Baccharis pilularis*) and western ragweed (*Ambrosia psilostachya*). This habitat is primarily located directly to the northwest and southeast of the Oxnard Industrial Drain within the Nature Conservancy parcel.

Coyote Brush (Eucalyptus Association)

This habitat is comprised primarily of coyote brush (*Baccharis pilularis*), Tasmanian blue gum (*Eucalyptus globulus*) and other species of gum trees (*Eucalyptus* sp.); the understory is comprised of non-native grasses such as Italian ryegrass (*Lolium multiflorum*), soft chess (*Bromus hordeaceus*), and rip-gut brome (*Bromus diandrus*). This community is located within the triangular parcel of property situated to the northeast of the Reliant Energy parcel and along the western bank of the adjacent drainage.

Coyote Brush (Myoporum Association)

This community is comprised primarily of coyote brush (*Baccharis pilularis*) and myoporum (*Myoporum laetum*). The habitat is located along the banks of many of the drainage ditches within the Study Area, including the Oxnard Industrial Drain. Scattered mulefat (*Baccharis salicifolia*) and sandbar willow (*Salix exigua*) are also present in this region.

Saline/Haline Herbs

This habitat is primarily located within the northern portion of the Ventura County Game Preserve; however, there is also a similar habitat area located directly to the north of the McWane Boulevard terminus in the Nature Conservancy parcel. This habitat may also be found in the Point Mugu Game Preserve. These areas were dominated by herbaceous species typically found on saline soils including: alkali mallow (*Malvella leprosa*), alkali weed (*Cressa truxillensis*), alkali-heath (*Frankenia salina*), saltbush (*Atriplex* sp.), and woolly seablite (*Suaeda taxifolia*)[3]. Scattered grass species within this community included rip-gut brome (*Bromus diandrus*), soft-chess (*Bromus hordeaceus*), and rabbitfoot grass (*Polypogon monspeliensis*). Additionally, the saline/haline herb habitat in the Nature Conservancy parcel contained significant densities of perennial pickleweed (*Salicornia virginica*). Although this community is dominated by wetland-classified plants, wetland hydrology or hydrology indicators were not observed during the July 2004 site visits. Furthermore, the area was relatively flat; however, depressional topography was not observed. As a result, further studies would be required to determine if these areas become saturated or inundated during the rainy season.

[3] Although the seablite was identified in the field as bush seepweed *(Suaeda nigra)*, an expert on Ormond Beach flora suggests that woolly seablite (*Suaeda taxifolia*), a CNPS List 4 species, is more common in the Study Area (Ferren 2006). This coincides with a report by Jones and Stokes (1998), so it is assumed for this document that the species was misidentified and that *Suaeda taxifolia* is predominant in the Study Area.

Southern Foredunes

Holland (1986) defines the southern foredune community as low semi-stabilized dunes vegetated by suffrutescent perennials. Most of the dune habitat within the Study Area has been developed or is severely degraded by perturbations caused by humans. This habitat is characteristic of the sand verbena (*Abronia sp.*) - beach bursage series (Sawyer and Keeler-Wolf 1995). Most of the beach dune complex is a sparse combination of perennial forbs and low shrubs that form a ground cover. Native plant species that are dominant in this habitat type include beach evening primrose (*Camissonia cheiranthifolia*), beach bur (*Ambrosia chamissonis*), and beach morning-glory (*Calystegia soldanella*). Sand verbena was also a dominant species, and may have included several species: the naturalized yellow sand verbena (*Abronia latifolia*) from northern California, and the native *Abronia maritima* and *A. umbellata*, as well as hybrids of these species.

The southern foredune habitat primarily occupies that southern and western boundaries of the Study Area along Ormond Beach. Patches of invasive iceplant (*Carpobrotus* sp.) dominate regions of this habitat. Other nonnative plants that invaded this habitat but do not appear to be problematic include sea rocket (*Cakile maritima*), and kikuyu grass (*Pennisetum clandestinum*).

Willow Scrub

The willow scrub habitat within the Study Area is contained within the Ventura County Game Preserve and is also likely present within Point Mugu Game Preserve. This habitat consists of willow patches that are dominated by several species of *Salix* including arroyo willow (*Salix lasiolepis*). This community does not appear to be associated or dependent upon watercourses. However, one of the willow patches located in the western region of the Ventura County Game Preserve surrounds a large ponded area that is dominated by California tule (*Schoenoplectus californicus*). The majority of the willow patches are located on the levees surrounding the managed duckponds.

Mixed Transitional

Transition habitat types are areas where one community or habitat type shifts to another (e.g. wetland to upland). The mixed transitional habitat moves with the gradient from more facultative wetland plant species to upland plant species. The wetland plants are primarily comprised of varying densities and combinations of salt grass (*Distichlis spicata*), perennial pickleweed (*Salicornia virginica*), and California tule (*Schoenoplectus californicus*), whereas the upland plant species are dominated by invasive exotics, such as black mustard (*Brassica nigra*), non-native annual grasses, iceplant (*Carpobrotus* sp.), saltbush (*Atriplex* sp.), fat-hen spearscale (*Atriplex triangularis*), and curly dock (*Rumex crispus*). The mixed transitional community also contains areas that have been disturbed by off-road vehicular activity or by the placement of miscellaneous debris. This habitat type is present throughout the Study Area.

3.1.2 Wetland Plant Communities

The wetlands within the Study Area are comprised of three general communities: southern coastal salt marsh, coastal freshwater/brackish marsh (Holland 1986), and managed duck ponds. The southern coastal salt marsh and coastal freshwater/brackish marsh types are distributed within the Study Area according to soil, water, and salinity regimes. The influence of fresh, brackish, and saline water varies seasonally and spatially throughout these wetland

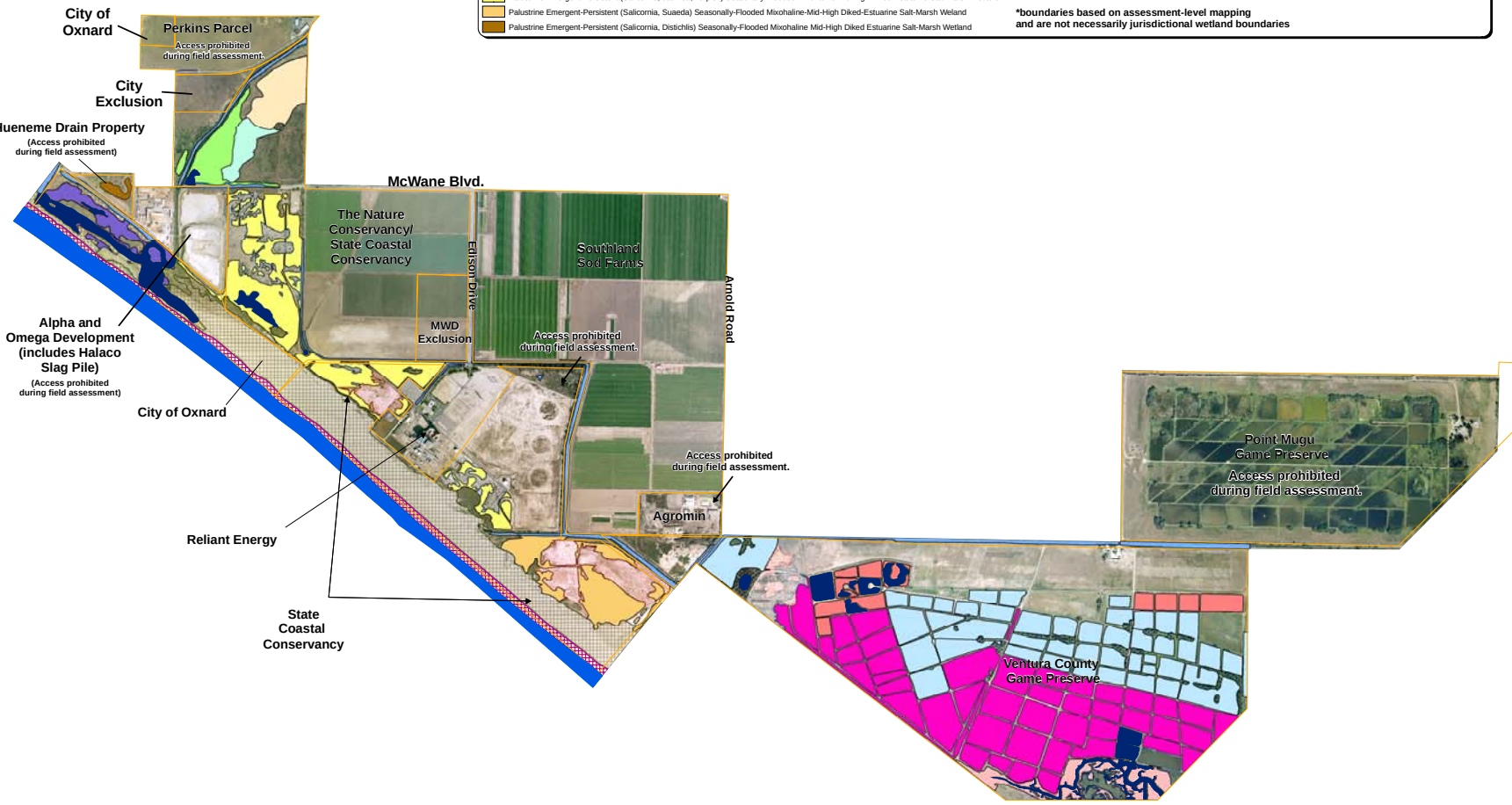
habitats within the Study Area. All three wetland communities are linked to the presence of a water table that occurs close to or at the surface for at least part of the growing season. Because of the range of soil salinity conditions within the Study Area, the salt marsh species and freshwater mash species are often mixed together in transitional brackish vegetation assemblages (Impact Sciences 1996). The managed duck ponds are man-made wetland habitats that were created in order to attract avian fauna. These wetlands are located entirely within the Ventura County Game Preserve situated near the southern portion of the Study Area. The wetland habitats within the Study Area were classified using a modified approach from Ferren *et al.* (1996). The habitats are discussed below and illustrated on Figures 3 and 4.

Prior to urbanization, the early coast surveys indicate a rich complex of sandy beaches, open water lagoons and estuaries, a series of linear dune ridges, brackish seasonal freshwater marshes, and grass/transitional uplands (Figure 5). These surveys from the 1850s show a sandy shoreline with a continuous strip of low dunes about 200-300 feet wide along the area that would become known as Ormond Beach. Coastal grasslands extended across the low-lying Oxnard Plain, which was drained by a series of channels - the largest of which would later become the Hueneme/Bubbling Springs and Oxnard Industrial Drains - that terminated at back dune brackish open water and wetlands. Mugu Lagoon is the only water body shown in the 1850s maps with a continually open tidal inlet (Thompson 1994).

The boundaries of the wetland habitats depicted in Figures 3 and 4 are based upon an assessment-level evaluation conducted by WRA during the July 2004 site visits. A protocol-level delineation was not conducted during the course of this study. In the western region of the Nature Conservancy parcel, a delineation was conducted over several years (including wet and dry years) by contrasting teams and presented in a joint report entitled “Wetland Delineation for a Portion of the Ormond Beach Specific Plan Area, Ventura County, California” prepared for the City of Oxnard (Impact Sciences 2000). WRA did not consult this delineation report when mapping wetland habitats; however, the delineation report may provide the best representation of the boundary between wetlands and uplands in that portion of the Study Area.

3.1.2.1 Southern Coastal Salt Marshes

Southern coastal salt marshes are typically a perennial pickleweed association of low tidelands and estuaries. The vegetation community is primarily composed of succulent halophytic and hydrophytic plants such as: perennial (*Salicornia virginica*) or annual pickleweed (*Salicornia subterminalis*), salt grass (*Distichlis spicata*), woolly seablite (*Suaeda taxifolia*), and California sealavender (*Limonium californicum*). Plant species distribution is largely influenced by the microtopography within the salt marsh. Pickleweed typically occupies the middle to high marsh, while salt grass occurs in low areas but can also be dominant in the higher terrain (McClelland Engineers 1985).



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Figure 4.

Sensitive Habitats Within the Study Area

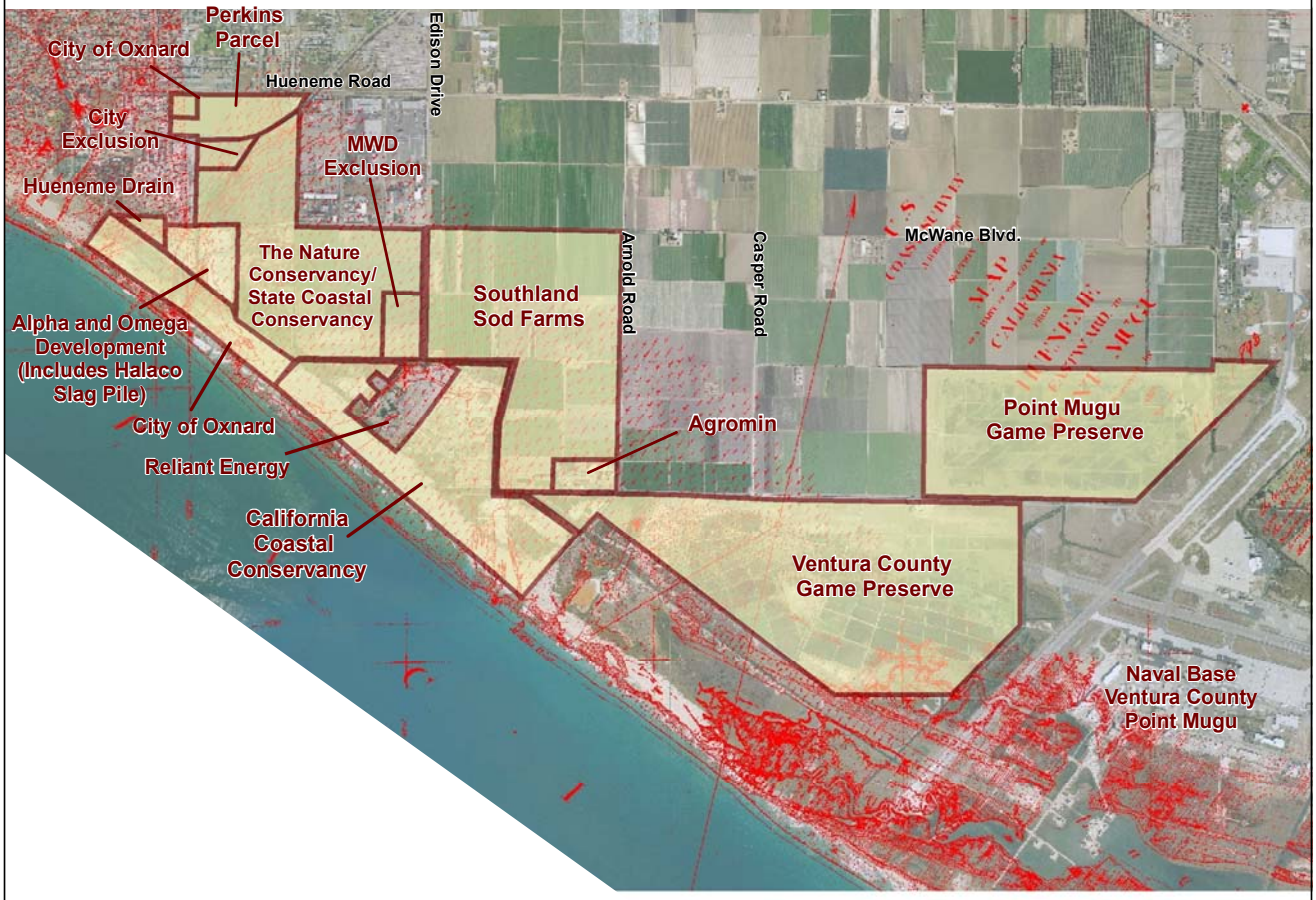
N
W E
S

1:9,600

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Date: July 2007
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: I:\Acad 2000\13006\GIS\ArcMap\July07Revisions*.mxd



N
W E
S

Figure 5. 1855 Coast Survey of Study Area

1:30,200

3,000 1,500 0 3,000 Feet

1,000 500 0 1,000 Meters

Ormond Beach
Oxnard, Ventura County

wra
ENVIRONMENTAL CONSULTANTS

Date: July 2007
Map By: Michael Rochelle
Filepath: I:\Acad2000 files\13006\gis\Arcmap\JulyRevisions\Figure5_CoastSurvey.mxd

Figure 4. Sensitive Habitats within Study Area

Figure 5. 1855 Coast Survey of Study Area

Seasonally-Flooded Mineral (Sand) Flat

This habitat does not constitute a plant community since it was primarily devoid of vegetation; however, the topography and composition of adjacent plant communities indicated that these areas become inundated or saturated during the winter. This habitat is located in the Nature Conservancy parcel, immediately east of the Halaco slag pile, and in the western region of the Ventura Game Preserve. The substrate consists of finer texture mineral material primarily comprised of sand.

It is unknown if these areas are naturally devoid of vegetation or if the current conditions are a result of vehicle disturbance or soil contamination.

Seasonally-Flooded Precipitate (Salt) Flats/Panne

This habitat is very similar to the seasonally-flooded mineral (sand) flat habitat in that it does not constitute a plant community due to the complete absence of plants. However, the landscape position, basin topography, and composition of adjacent plant communities indicate that these areas become inundated/saturated during the winter. This habitat is located in the northwestern and southeastern regions of the State Coastal Conservancy parcel, as well as, the western region of the Ventura County Game Preserve. The substrate of these areas are comprised of salt crystals located over finer mineral material. The thickness of the salt crystals varies from 0.1 inches to approximately 0.5 inches in certain areas.

These areas appear to be of natural origin whereby salt is deposited via tidal overwash or groundwater and precipitated upon evaporation.

Estuarine-Intertidal Emergent-Persistent (*Salicornia virginica*) Regularly-Flooded Mixohaline Mid-High Salt-Marsh Wetland

This area is located in the southeastern region of the Study Area, in the southern corner of the Ventura County Game Preserve. This area is dominated by perennial pickleweed (*Salicornia virginica*); sub-dominant species include: jaumea (*Jaumea carnosa*), alkali-heath (*Frankenia salina*), and salt grass (*Distichlis spicata*). According to the 1855 coast survey, this area was a coastal salt marsh directly connected to Mugu Lagoon. The construction of the Naval Base Ventura County, Point Mugu, reduced the tidal input into this area; however, this area currently receives muted tidal input through a system a channels that connect to Mugu Lagoon.

Palustrine Emergent-Persistent (*Salicornia, Jaumea, Atriplex*) Seasonally-Flooded Mixohaline Mid-High Diked-Estuarine Salt-Marsh Wetland

This wetland area is located in the Nature Conservancy parcel, bounded to the north by the terminus of McWane Boulevard, by the Halaco slag pile to west, by cultivated sod fields to the east, and by dunes to the south. This wetland area represents the greatest expanse of historic salt marsh habitat within the Ormond Beach Area. The northwestern portion of this wetland is impacted by numerous dirt roads and miscellaneous vehicular activity and is not designated as a wetland by the Oxnard Local Coastal Program (McClelland Engineers 1985). Additionally, theregion directly to the south of the McWane Boulevard terminus contains a remnant concrete building pad and a large amount of debris. The remaining habitat to the south is dominated by perennial pickleweed (*Salicornia virginica*), jaumea (*Jaumea carnosa*), fat-hen spearscale (*Atriplex triangularis*), and numerous areas of seasonally-flooded mineral (Sand) flats. The

special status plant species, Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*) has also been documented in this region (Jones and Stokes 1998; CDFG 2007) (Figure 6).

The southwestern region, directly to the north of the dune community contained standing water during the July 2004 site visits. In addition a small wetland ditch was observed flowing from the standing water area along the southern base of Halaco's slag pile towards the lagoon. A man-made berm located southeast of the Oxnard Industrial Drain mouth prevented the ditch from flowing into the lagoon.

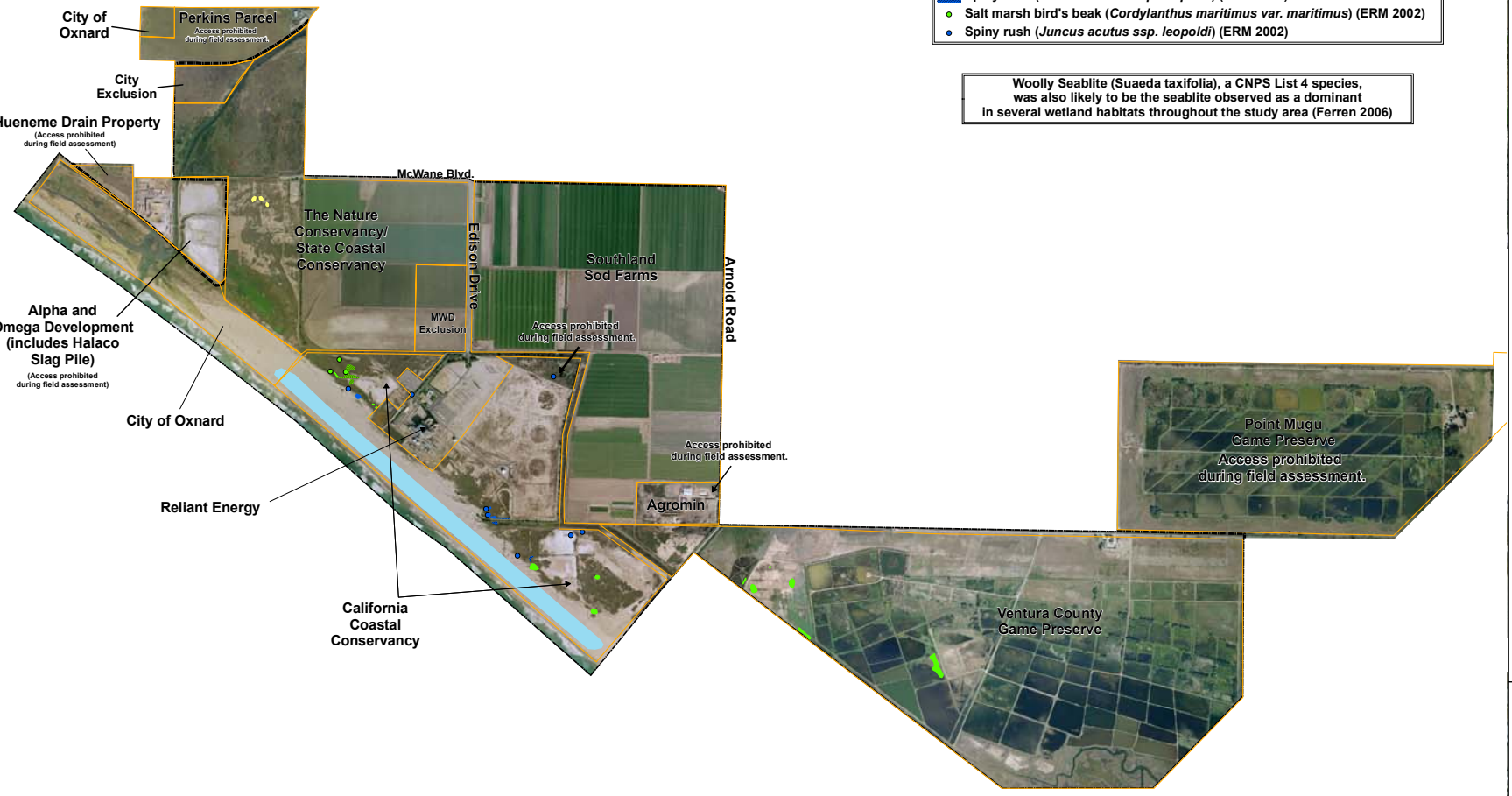
The region directly to the west of the Reliant Energy parcel is also dominated by perennial pickleweed. There is also a large expanse of seasonally-flooded precipitate (salt) flats/pannes located in this area. Soil survey maps from 1920 indicate the presence of a small intermittent lagoon in this area on the low terrain behind the coastal dunes, with the remaining tidal marsh habitat vegetated with pickleweed (Dames and Moore 1974 in McClelland 1985). Transitional salt marsh-dune vegetation occurs along the southern region. The endangered plant salt marsh bird's beak (*Cordylanthus maritimus*) has been documented in this area (CDFG 2007) and was also observed during the July 2004 site visits. Additionally, spiny rush (*Juncus acutus ssp. leopoldii*), a CNPS List 4 species was also observed in this region (Figure 6).

The wetland areas directly to the west of the Reliant Energy parcel's parking lot and northeast of the railroad tracks are highly disturbed by vehicle activity, and debris (concrete blocks, asphalt, trash). Although the community is dominated by perennial pickleweed, the vegetation in these regions is in poor condition and contains some non-native upland species.

The wetland area directly to the southeast of the Reliant Energy parcel, now owned by the State Coastal Conservancy is also highly disturbed from vehicular traffic. This area contains a large sand flat area and adjacent transitional habitats. The vegetated regions of the wetland habitat are dominated by perennial pickleweed and salt bush (*Atriplex* sp.). Sub-dominant species include: salt grass (*Distichlis spicata*), jaumea, heliotrope (*Heliotropium curassavicum*), and rabbitfoot grass (*Polypogon monspeliensis*).

These wetlands no longer receive natural tidal flow due to development activities that have eliminated tidal connections. However, a large pipe with a regulating device is located in the southeastern region of this wetland. This pipe appears to discharge water from the adjacent drainage ditch into the wetland habitat during periods of high flow. Additionally, only small portions of these areas contained evidence of wetland hydrology during the July 2004 site visits. As a result, further studies would be required to determine the hydrology of the these regions.

A review of the 1855 coast surveys indicate that this region was probably intermittently open to the ocean. The region appears to have been dominated by a mixture of open water, estuarine wetlands, coastal grasslands, and transitional areas. Hypersaline or euryhaline conditions may also dominate certain regions of this area during the summer. However, these conditions may represent conditions similar to historic natural conditions as hypersaline and euryhaline wetlands occur in similar habitats along the southern California coast (Ferren 2006).



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Figure 6.

Special Status Plant Species Observed Within the Study Area

N
W E
S

1:9,600

0 500 1,000 2,000 Feet

0 125 250 500 Meters

Date: July 2007
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: I:\Acad 2000\13006\GIS\ ArcMap\July07Revisions*.mxd

Figure 6. Special Status Plant Species Observed Within Study Area

Palustrine Emergent-Persistent (*Salicornia, Suaeda)* Seasonally-Flooded Mixohaline Mid-High Diked-Estuarine Salt-Marsh Wetland

This wetland area is located to the west of the Naval Base Ventura County, Point Mugu, in the State Coastal Conservancy parcel. It includes areas of seasonally-flooded precipitate (salt) flats/pannes and seasonally-flooded mineral (sand) flats, which are devoid of vegetation. The northern boundary is a flood channel separating the wetland area from cultivated sod fields, the Reliant Energy parcel, and a former tank farm. The southwestern boundary is a transitional dune community and beach. The terminus of Arnold Road which provides beach access to the public is located near the northeastern corner of this area. This wetland area has been disturbed by debris dumping (asphalt, concrete blocks, etc.) and by off-road vehicle use. This community is dominated by perennial pickleweed (*Salicornia virginica*) and woolly seablite (*Suaeda taxifolia*), with salt pannes and sand flats separating the elevated stands of vegetation. Periodic inundation from storm waves occurs in the southwestern region (McClelland Engineers 1985). According to the 1855 coast survey, this area appeared to be comprised salt panne and estuarine wetland habitat. Under current conditions, salt water infrequently enters this area during storm events. As a result, unvegetated salt panne, open water, and associated brackish wetland habitat may have dominated this region.

Certain areas of this wetland may have hypersaline or eurysaline conditions in the summer. These conditions may represent natural conditions as similar habitats occur along the margins of estuaries in the Mediterranean climate of southern California (Ferren 2006).

The endangered salt marsh bird's-beak (*Cordylanthus maritimus*) was observed in this habitat during the July 2004 site visits, as well as by others (CDFG 2007) (Figure 6 and Appendix B).

Palustrine Emergent-Persistent (*Salicornia, Distichlis)* Seasonally-Flooded Mixohaline Mid-High Diked-Estuarine Salt-Marsh Wetland

This wetland area is located in the Hueneme Drain property in the northwestern region of the Study Area. This area was not visited by WRA biologists during the July 2004 site visits since access was not permitted by the property owner at the time of our field survey. However, images and descriptions provided by Dr. Spencer MacNeil (formerly of Aspen Environmental Group) indicate that this area is primarily dominated by perennial pickleweed (*Salicornia virginica*) and salt grass (*Distichlis spicata*). Currently, this area is situated in a closed depression that does not receive tidal influence. However, the current plant composition and review of the 1855 coast survey indicate that this area was historically subject to tidal inundation.

3.1.2.2 Coastal Freshwater/Brackish Marshes

Palustrine Emergent-Persistent (*Schoenoplectus, Typha, Distichlis*) Semi-Permanently-Flooded Lagoon Shore Wetland

This wetland area is located near the mouth of the Oxnard Industrial Drain and the Halaco slag pile. Freshwater flows into the lagoon area from the three drains and infiltrates into the ocean through the beach sands or flows through occasional breaches in the sand barrier. The lagoon receives ocean water through tidal influence during the winter months when the sand barrier is breached and at other times of the year over and through the sand berm during very high tides. Generally, low salinity and high water conditions occur during the summer when freshwater

builds in the lagoon behind the sand berm. Higher salinity and lower water levels are more characteristic during the winter months when the berm has been breached. Salts tend to accumulate in adjacent soils during saline conditions and then flush from the soils during freshwater conditions (Impact Sciences 1996).

This region contains a mix of habitat types including open water, southern foredunes, degraded dunes, and mixed transitional habitat. The wetland habitat occupies the central region of the lagoon and is dominated primarily by California tule (*Schoenoplectus californicus*), bulrush (*Bolboschoenus maritimus,* or possible hybrid with *Schoenoplectus robustus*), common cattail (*Typha latifolia*), and salt grass (*Distichlis spicata*). During the July 2004 site visits, the central region of the wetland contained standing water. Transitional marsh-upland habitats are located along portions of the wetland perimeter. These areas contain a mix of wetland and upland species such as salt grass (*Distichlis spicata*), curly dock (*Rumex crispus*), western ragweed (*Ambrosia psilostachya*), iceplant (*Carpobrotus* sp.), and coyote brush (*Baccharis pilularis*).

According to the 1855 coast survey, this area appears to have been comprised of an estuarine lagoon, associated wetlands, coastal grasslands, and dunes.

Palustrine Emergent-Persistent (*Schoenoplectus*) Seasonally-Flooded Mixohaline High-Fringe Marsh Wetland

This wetland community is primarily located along the upper fringes of the many man-made drainage channels within the Study Area. The dominant vegetation consists primarily of California tule (*Schoenoplectus californicus*). Open water normally occurred within the central region of these wetlands; the upper fringes appear to become inundated during high flow events. However, some of these habitats were completely dry during the July 2004 site visits. The portion of this habitat east of Edison Drive likely receives muted tidal input through Mugu Lagoon. Moreover, the wetlands within the Oxnard Industrial Drain and adjacent to the lagoon likely receive tidal input when the lagoon sand barrier is breached.

Additionally, spiny rush (*Juncus acutus ssp. leopoldii*), a CNPS List 4 species was also observed in this community, directly to the southeast of the Reliant Energy parcel (Figure 6).

The triangular parcel directly to the northeast of the Reliant Energy parcel could not be accessed during the July 2004 site visits because the entire area was surrounded by high fences and/or drainage canals. However, surveys performed from surrounding parcels indicate that a California tule (*Schoenoplectus californicus*) dominated wetland is located in the central region of this area. This wetland was classified within this community even though this area does not appear to be located within a manmade ditch.

Palustrine Emergent-Persistent (*Schoenoplectus, Atriplex*) Seasonally-Flooded Drainage Channel Floodplain Wetland

This wetland habitat is located directly to the north of the Halaco slag pile within the Nature Conservancy parcel. It is a triangular-shaped brackish to freshwater marsh primarily located to the south of the Oxnard Industrial Drain. There is also a similar wetland habitat located to the northwest, immediately adjacent to the Oxnard Industrial Drain. This region is dominated by bulrush (*Bolboschoenus maritimus,* or possible hybrid with *Schoenoplectus robustus*), California tule (*Schoenoplectus californicus*), and fat-hen spearscale (*Atriplex triangularis*). Other species present in this region include: salt grass (*Distichlis spicata*), alkali-heath (*Frankenia salina*), and

curly dock (*Rumex crispus*). The northern region contains a high percent of California tule (*Schoenoplectus californicus*), the southwest region contains standing water and a dense stand of bulrush. The eastern region is dominated by fat-hen spearscale (*Atriplex triangularis*) and salt grass (*Distichlis spicata*). In addition, a drainage ditch dominated by California tule (*Schoenoplectus californicus*) occupies the southern boundary.

This marsh is apparently a remnant of an extensive intermittent lagoon fed by a natural drainage course. During the 1920s, the area was apparently open to natural tidal flow, but subsequent disturbance, including the channelization of the natural drainage altered the topography and the hydrographic regime (Dames and Moore 1974 in McClelland 1985).

Palustrine Emergent-Persistent (*Distichlis, Salicornia, Frankenia*) Seasonally-Flooded Drainage Channel Floodplain Wetland

This wetland habitat is located directly to the east of the palustrine emergent-persistent (*Schoenoplectus, Atriplex)* seasonally-flooded drainage channel floodplain wetland within the Nature Conservancy parcel. This area is dominated by salt grass (*Distichlis spicata*), perennial pickleweed (*Salicornia virginica*), and alkali-heath (*Frankenia salina*). This region did not contain standing water or saturated soils during the July 2004 site visits. This region is slightly higher than the adjacent wetland habitat to the west. Therefore, inundation and/or saturation of the soils may not occur as frequently.

As previously mentioned, this area was apparently open to natural tidal flow during the 1920s; however, subsequent disturbance, including the channelization of the natural drainage altered the topography and the hydrologic regime (Dames and Moore 1974 in McClelland 1985).

Palustrine Emergent-Persistent (*Cressa, Suaeda, Atriplex*) Seasonally-Saturated Alkali Flats/Depressional Wetland

This habitat is located in the northeastern region of the Nature Conservancy parcel, directly northeast of the wetland habitat described above. During the July 2004 site visits this area was dominated by alkali-weed (*Cressa truxillensis*), woolly seablite (*Suaeda taxifolia*), and fat-hen spearscale (*Atriplex triangularis*). Perennial pickleweed (*Salicornia virginica*), annual pickleweed (*Salicornia subterminalis*), and sickle grass (*Parapholis incurva*) were also present as sub-dominants. Additionally, hummock-topography was observed throughout this region. The topographically higher mounds were dominated by upland species including: soft chess (*Bromus hordeaceus*), rip-gut brome (*Bromus diandrus*) and coyote brush (*Baccharis pilularis*). Although inundation or saturation was not observed during the July 2004 site visits, the high percent cover of hydrophytic plant species combined with hummock topography implies that this area may become inundated/saturated during the rainy season.

A review of the 1855 coast survey indicates that this region was subject to tidal flow prior to urbanization and subsequent channelization of the Oxnard Industrial Drain.

WRA was not able to access the Perkins parcel directly to the north of the Oxnard Industrial Drain due to the lack of property owner consent. However, based upon a draft report prepared by Impact Sciences (Impact Sciences 1996), and upon interpretation of aerial photographs, an area containing similar wetland characteristics may be located within the eastern region of this parcel.

3.1.2.3 Managed Duck Ponds

These habitats are located within the Ventura County Game Preserve and consist of artificial wetlands that were created by a system of levees/berms. Though access to the Point Mugu Game Preserve was not possible during the July 2004 field assessment, through interpretation of a September 2003 aerial photograph, it is apparent that similar habitats are present. These habitats are seasonally flooded to attract avian fauna. The artificial levees/berms allow preserve managers to alter the hydrology of selected ponds easier. During the rainy season, the hydrology of these wetlands are driven by precipitation. The artificial berms prevent precipitation from draining out of the contained areas. Water can then be pumped from one pond to another in order to create deeper aquatic habitat or to sustain specific ponds during the dry season in order to maintain avian fauna populations. The 1855 coast survey indicates that the southeastern portion of the Ventura County Game Preserve was historically salt marsh habitat (Figure 5). As a result, many of the plant communities within the duck ponds resemble salt marsh or brackish marsh communities. During the July 2004 site visits, three duck pond plant communities were observed within the Ventura County Game Preserve. These habitats are described below:

Palustrine Emergent-Persistent (*Cressa, Salicornia*) Seasonally-Flooded Mixohaline Managed Duck Pond Wetland

This habitat dominates the southern region of the Ventura County Game Preserve. Alkali-weed (*Cressa truxillensis*) and perennial pickleweed (*Salicornia virginica*) dominate most of these areas. Some of these ponds were vegetated entirely by alkali-weed (*Cressa truxillensis*) at such high densities that is resembled a carpet. However, the federal endangered plant, salt marsh bird's-beak (*Cordylanthus maritimus ssp. maritimus*) was also observed within this habitat (Figures 4 and 6). During the July 2004 site visits, none of these ponds contained standing water or saturated soils.

Palustrine Emergent-Persistent (*Schoenoplectus*) Seasonally-Flooded Mixohaline Managed Duck Pond Wetland

These managed duck ponds are located near the northwestern and eastern corners of the Ventura County Game Preserve. These ponds were dominated primarily by California tule (*Schoenoplectus californicus*) and bulrush (*Bolboschoenus maritimus,* or possible hybrid with *Schoenoplectus robustus*). Additionally, during the July 2004 site visits, many of these ponds contained standing water and saturated soils.

Palustrine Emergent-Persistent (Mixed Vascular) Seasonally-Flooded Mixohaline Managed Duck Pond Wetland

These habitats are located in the western and northern portions of the Ventura County Game Preserve. Plant species within these habitats contained varying densities and combinations of the following species: California tule (*Schoenoplectus californicus*), bulrush (*Bolboschoenus maritimus,* or possible hybrid with *Schoenoplectus robustus*), curly dock (*Rumex crispus*), rough cocklebur (*Xanthium strumarium*), salt grass (*Distichlis spicata*), perennial pickleweed (*Salicornia virginica*), alkali weed (*Cressa truxillensis*), bermuda grass (*Cynodon dactylon*), and saltbush (*Atriplex* sp.). In addition, the federally endangered plant, salt marsh bird's-beak (*Cordylanthus maritimus ssp. maritimus*) was observed in several of these ponds (Figure 4).

None of these ponds contained standing water; however, saturated soils were observed within several of the ponds during the July 2004 site visits.

Access to the Point Mugu Game Preserve was prohibited during WRA's site visits; however, the aerial photograph signature of the Point Mugu Game Preserve is very similar to that of the Ventura County Game Preserve. Therefore, it is likely that the habitats within the two game preserves are very similar. WRA observed that the duck ponds within the Ventura County Game Preserve become less dominated by halophytic vegetation the further a pond is from the ocean. As a result, it is likely that the ponds within the Point Mugu Game Preserve are more consistent with the *Schoenoplectus*-dominated and mixed vascular managed duck ponds rather than the *Cressa-Salicornia* ponds.

As previously mentioned, the 1855 coast survey indicates that the southeastern region of the Ventura County Game Preserve was comprised of tidal salt marsh habitats. The remaining majority of the Preserve appears to have consisted of transitional wetland habitat.

3.1.3 Exotic Plant Species

During the July 2004 site visits, thirty-five species included on the California Invasive Plant Inventory (Cal-IPC 2006) were identified within the Study Area (Appendix B). The six species rated as "High" impact include European beachgrass (*Ammophila arenaria*), arundo (*Arundo donax*), red brome (*Bromus madritensis ssp. rubens*), cheatgrass (*Bromus tectorum*), iceplant (*Carpobrotus edulis*), and pampas grass (*Cortaderia selloana*).

Eighteen species observed are rated as having "Moderate" impact, including Russian knapweed (*Acroptilon repens*), Australian saltbush (*Atriplex semibaccata*), slender wild oats (*Avena barbata*), black mustard (*Brassica nigra*), ripgut brome (*Bromus diandrus*), sea fig (*Carpobrotus chilensis*), bermuda grass (*Cynodon dactylon*), Tasmanian blue gum (*Eucalyptus globulus*), tall fescue (*Festuca arundinacea*), summer mustard (*Hirschfeldia incana*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), rough cat's ear (*Hypochaeris radicata*), Italian ryegrass (*Lolium multiflorum*), crystalline iceplant (*Mesembryanthemum crystallinum*), myoporum (*Myoporum laetum*), tree tobacco (*Nicotiana glauca*), and sheep sorrel (*Rumex acetosella*).

Eleven species observed are rated as having "Limited" impact, including soft chess (*Bromus hordeaceus*), sea rocket (*Cakile maritima*), brass buttons (*Cotula coronopifolia*), bur clover (*Medicago polymorpha*), kikuyu grass (*Pennisetum clandestinum*), bristly ox-tounge (*Picris echioides*), English plantain (*Plantago lanceolata*), rabbitfoot grass (*Polypogon monspeliensis*), wild radish (*Raphanus sativus*), castor bean (*Ricinus communis*), and curly dock (*Rumex crispus*).

These species are primarily located within the non-native grassland (ruderal vegetation association) and mixed transitional habitats within the Study Area. However, the majority of the Tasmanian blue gum and myoporum individuals are confined to the coyote brush (eucalyptus association) and coyote brush (myoporum association) habitats, respectively. Furthermore, the southern foredune habitat located on the eastern side of the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland contains significant densities of exotic species including giant reed, kikuyu grass, iceplant, and myoporum. Additional species observed during previous studies are listed in Appendix B.

3.2 Sensitive Habitats

3.2.1 Wetlands and Waters

The southern coastal salt marsh, coastal freshwater/brackish wetlands, and managed duckpond habitats within the Study Area are considered sensitive habitat by the CDFG, CCC, and Corps. Most of these habitats were dominated by hydrophytic vegetation. Areas identified as coastal salt marsh wetlands that lacked vegetation contained evidence of wetland hydrology and therefore met the CCC one-parameter wetlands criteria. Additionally, it is likely that the majority of these areas also meet the Corps three parameter criteria; however further studies would be required to determine the exact jurisdictional boundaries. Furthermore, the open water habitats and mapped ocean will also be considered sensitive habitats. The mapped ocean likely includes Irregularly-Exposed Marine Wetland habitats. Possible additional types include the unconsolidated subclasses of Sand and Gravel; the class Aquatic Bed, subclass Rooted Vascular if there are beds of Surf Grass (*Phyllospadix* spp.); and subclass Aquatic Bed, subclass Algal. These marine wetlands are often important endangered shorebird habitat (Ferren 2006).

3.2.2 Riparian Habitat

Willows can be associated with riparian habitats but are also commonly found in non-riparian areas. The willow scrub communities within the Study Area are not associated or dependent upon a stream or any other type of watercourse; however, they are immediately adjacent to an aquatic waterbody and would likely meet the definition of riparian habitats under CDFG ESD 1994 or CCC 1981. In addition, these habitats do provide habitat for avian fauna; and may qualify as sensitive habitat (southern willow scrub). The willow scrub habitats within the Study Area are illustrated in Figure 4.

3.2.3 Other Sensitive Communities

The southern foredune habitat within the Study Area is also considered sensitive habitat by the CDFG. The location of the southern foredune habitat within the Study Area is included in Figures 3 and 4. In addition, the intertidal shore between the foredunes and subtidal marine deepwater habitat is likely one to several types of Marine Intertidal Wetland including Irregularly-flooded Unconsolidated Shore.

Table 1. Summary of Sensitive Habitats

Sensitive Habitat Type	Size (acres)
Open Waters/Ocean (Essential Fish Habitat)	90.69
Southern Coastal Salt Marsh	112.31
Coastal Freshwater/Brackish Marsh	412.81
Willow Scrub	9.34
Southern Foredune (includes Marine Intertidal Unconsolidated-Sand Wetland)	134.93
TOTAL	760.08

3.3 Special Status Species

3.3.1 Wildlife

According to a review of documented special status wildlife occurrences in the project vicinity and greater Ventura County, 72 species have potential to occur within the Study Area. Appendix A summarizes the potential for these species to occur in the Study Area. Of these species, 17 species have a low potential to occur in the Study Area, 9 species have a moderate potential to occur, and 13 species are unlikely to occur. Five (5) species are not known from the Study Area but have a high potential to occur based on the presence of suitable habitat. These 5 species are: Light-footed Clapper Rail, Yellow Warbler, Least Bell's Vireo, sandy beach tiger beetle, and tiger beetle. Twenty-eight (28) species have been documented within the Study Area during past or present surveys: Southern California saltmarsh shrew, San Diego black-tailed jackrabbit, California Brown Pelican, Double-crested Cormorant, American Bittern, Great Blue Heron, Great Egret Snowy Egret, Black-crowned Night Heron, White-faced Ibis, White-tailed Kite, Northern Harrier, Cooper's Hawk, Sharp-shinned Hawk, American Peregrine Falcon, Merlin, Western Snowy Plover, Mountain Plover, Long-billed Curlew, California Least Tern, Western Burrowing Owl, California Horned Lark, Loggerhead Shrike, Belding's Savannah Sparrow, Tri-colored Blackbird, South Coast garter snake, tidewater goby, globose dune beetle and wandering (saltmarsh) skipper.

This section describes the eight state and federally listed endangered and threatened species with documented presence or high potential to occur, as well as the 26 other special status species known to occur or have a high potential to occur in the Study Area. Species that do not have a status following their name were on the USFWS Species of Concern list in 2004 when this assessment was performed. This listing is not longer maintained, but discussion of these species is included for thoroughness. The species discussed are presented here by status:

<u>Federal and state listed species</u>

California Brown Pelican (*Pelecanus occidentalis californicus)*
American Peregrine Falcon (*Falco peregrinus anatum)*
Light-footed Clapper Rail (*Rallus longirostris levipes)*
Western Snowy Plover (*Charadrius alexandrius nivosus)**
California Least Tern (*Sterna antillarium browni)**
Least Bell's Vireo (*Vireo bellii pusillus)*
Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)*
tidewater goby (*Eucyclogovius newberryi)*

<u>Federal and/or State species of concern and fully protected species</u>

Southern California saltmarsh shrew (*Sorex ornatus salicornicus)*
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)
Double-crested Cormorant *(Phalacrocorax auritus)*
American Bittern (*Botaurus lentiginosus)*
Great Blue Heron (*Ardea herodias*)
Great Egret (*Ardea alba*)
Snowy Egret (*Egretta thula*)
Black-crowned Night Heron (*Nycticorax nycticorax*)
White-faced Ibis (*Plegadis chihi)**

White-tailed Kite *(Elanus leucurus)**
Northern Harrier *(Circus cyaneus)**
Cooper's Hawk *(Accipiter cooperii)*
Sharp-shinned Hawk, (*Accipiter striatus)*
Merlin, *(Falco columbarius)*
Mountain Plover *(Charadrius montanus)*
Long-billed Curlew *(Numenius americanus)*
Western Burrowing Owl (*Athene cuniculara)*
Loggerhead Shrike (*Lanius ludovicianus)**
Yellow Warbler *(Dendroica petechia brewsteri)*
California Horned Lark (*Eremophila alpestris actia)*
Tri-colored Blackbird (*Agelaius tricolor)*
South Coast garter snake (*Thamnophis sirtalis ssp.)**
sandy beach tiger beetle (*Cicindela hirticollis gravida)*
tiger beetle(*Cincidela sensilis frosti)*,
globose dune beetle (*Coelus globosus*)
wandering (saltmarsh) skipper *(Panoquina errans)** **

*Potential breeding and foraging habitat areas for select Federal and State listed species and species of concern/special concern are included in Appendix C.
**This species is included because of its extreme rarity in California and dependence on coastal saltmarsh habitats such as those present in the Study Area. This species is considered globally imperiled by World Conservation Union.

Appendix C is a compilation of figures

FEDERAL AND STATE LISTED SPECIES

a. California Brown Pelican (*Pelecanus occidentalis californicus*) **-** Federally Endangered, State Endangered, California Fully Protected

Distribution

California Brown Pelican breeding colonies range from Mexico north to the Channel Islands. Post-breeding individuals disperse along the coast south to Central America and north to Vancouver Island (Cogswell 1977). Small numbers visit the Salton Sea and Colorado River reservoirs. Most return to breeding colonies by March or April. In southern California, Brown Pelicans breed on west Anacapa Island and Santa Barbara Island, utilizing mainland beaches, estuaries and lagoons for post-breeding dispersal, roosting, and foraging. Nearby Mugu Lagoon is the most important estuarine roost site for the Pelican in southern California (Tetra Tech 2002).

Habitat

The California Brown Pelican is found in estuarine, marine subtidal, and marine pelagic waters along the California coast. Basic habitat requirements for this species include isolated undisturbed offshore rocks or islands with abundant fish in the vicinity.

Occurrence in Study Area

California Brown Pelicans frequently fly over the Study Area and forage and roost in the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland habitat located at the mouth of the Oxnard Industrial Drain. The Study Area currently provides limited roosting habitat for the Pelican due to the overall lack of undisturbed sandbar, mudflat, and estuarine habitat.

b. American Peregrine Falcon (*Falco peregrinus anatum*) **-** Federally Delisted, State Endangered, California Fully Protected

Distribution

The American Peregrine Falcon was formerly widespread in North America from the continental United States south into Mexico. In California, its range included most of the state during migrations and during the winter. During the breeding season its range included the Channel Islands, coastal areas, the North Coast, Klamath, Cascade Ranges, and the Sierra Nevada. Following a precipitous population decline in the 1970's when it was listed as Federal endangered species, the Peregrine Falcon is currently in a state of recovery. The banning of organochlorine pesticides, such as DDT, is thought to have played a key role in their recovery, along with intensive management by state and federal officials. The Peregrine Falcon was delisted from federal endangered status in 1999, though it remains a state endangered species.

Habitat

Breeding habitat generally includes high cliffs in coastal or forested habitats, however, some pairs nest on city buildings and bridges. In winter and during migration, Peregrine Falcons may occur in any habitat where concentrations of prey species (shorebirds or waterfowl) occur. Peregrine Falcons are particularly vulnerable to disturbance during the breeding season and are unusually susceptible to collision and electrocution with power transmission lines.

Occurrence in Study Area

The Peregrine Falcon occurred historically in the Ormond Beach vicinity (CDFG 2007) and a small population is currently present at Naval Base Ventura County, Point Mugu. Suitable foraging and roosting habitat is available throughout the Study Area. This species has also been observed foraging in the sod farm vicinity by USFWS personnel and local birders (D. Pereksta, USFWS, pers. comm.).

c. Light-footed Clapper Rail (*Rallus longirostris levipes*) - Federally Endangered, State Endangered, California Fully Protected

Distribution

Disjunct populations of the Light-footed Clapper Rail breed in marsh vegetation of coastal wetlands from Santa Barbara County to San Diego County and northern Baja California. It is a rare resident bird at nearby Naval Base Ventura County, Point Mugu

where approximately 15-20 individuals have been documented during recent annual call counts (Tetra Tech 2002).

Habitat

Light-footed Clapper Rails inhabit cordgrass-pickleweed salt marsh year-round, feeding primarily on crabs, snails, and other intertidal invertebrates. At nearby Naval Base Ventura County, Point Mugu, the Rails occupy stands of spiny rush and pickleweed vegetation. They require shallow water and mudflats for foraging, with adjacent higher vegetation for cover during high tides. During extreme high tides and storms, Clapper Rails are forced out of their preferred habitat into adjacent plant communities. High marsh and upland areas are essential to the survival of Clapper Rails because they provide cover during high tides and winter storms when their primary habitat is flooded. Rails are very vulnerable to predation during this time, falling prey to Northern Harriers and other hawk species. The amount of suitable habitat available to this subspecies across its entire range is about one-third of that which existed historically.

Occurrence in Study Area

No known records of Light-footed Clapper Rails at the Study Area exist. Suitable habitat is available in the southern coastal saltmarsh habitat located southwest of the managed duck ponds at the Ventura County Game Preserve, immediately adjacent to Naval Base Ventura County, Point Mugu.

d. Western Snowy Plover (*Charadrius alexandrius nivosus*) **-** Federally Endangered, CDFG Species of Special Concern, USFWS Bird of Conservation Concern

Distribution

The Western Snowy Plover breeds on the Pacific coast from southern Washington to southern Baja California and inland as far as Kansas. Western Snowy Plovers are resident throughout most of their range, except on the Pacific Coast where they are resident only as far north as the San Francisco Bay area. However, breeding populations of Western Snowy Plovers have been observed with both resident and migratory components. Inland nesting areas occur at the Salton Sea, Mono Lake, and at isolated sites on the shores of alkali lakes in northeastern California, in the Central Valley, and southeastern deserts. The sandy beaches of Naval Base Ventura County, Point Mugu are included in the critical habitat for the Plover; Plovers are known to occupy this area year round.

Habitat

Western Snowy Plovers generally complete their entire life cycle on expanses of dry, flat sand that are above the levels of typical high tides. They have also been known to utilize the shores of salt ponds, alkaline lakes and salt flats when in landlocked portions of their range. Breeding habitat consists of open, bare-ground islands that are predator free. Internal salt pond levees may also provide breeding habitat.

Occurrence in Study Area

The Western Snowy Plover is present year-round at Ormond Beach. A number of Western Snowy Plovers nest and roost on the southern foredune habitat at Ormond Beach, particularly in the area southeast of the Halaco slag pile and southwest of the Reliant Energy parcel. They also utilize the ocean shoreline, palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland habitat, and adjacent open waters for foraging opportunities, though disturbances by humans and pets are common. Educational signs and fences are present in the southern foredune nesting area to discourage human disturbance.

e. California Least Tern (*Sterna antillarium browni*) **-** Federally Endangered, State Endangered, California Fully Protected

Distribution

The California Least Tern historically nested on coastal sandy beaches from the Pajaro River mouth and Moss Landing (Santa Cruz and Monterey counties), where it occurred as recently as 1956, southward into northern Baja, Mexico (Grinnell and Miller 1944, Atwood et al. 1979, Carter et al. 1990). California Least Terns winter mostly south of the United States. Breeding colonies are located in southern California along marine and estuarine shores, and in San Francisco Bay in abandoned salt ponds and along estuarine waters. The California Least Tern currently nests at scattered locations, including Point Mugu, Venice Beach, L.A. Harbor, Huntington Beach S.P., North Beach (Camp Pendleton), Mariner's Point (Mission Bay), and Delta Beach North and NAB Ocean (San Diego Bay).

Habitat

California Least Terns inhabit open water, tidal salt marshes and salt ponds (USFWS 1992). Nesting colonies require flat areas with little or no vegetation, mixed sand or shell or other loose substrate, freedom from disturbance, and nearness to shallow waters with abundant small fish.

Occurrence in Study Area

A small colony of Least Terns nest and roost on the southern foredune habitat at south Ormond Beach, particularly in the area southeast of the Halaco slag pile and southwest of the Reliant Energy parcel. Educational signs and fences are present in this area to discourage human disturbance. The palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland at the mouth of the Oxnard Industrial Drain and adjacent open water habitat provide the primary foraging habitat at the Study Area, while many of the drainage canals also provide foraging opportunities.

f. **Least Bell's Vireo** (*Vireo bellii pusillus*) Federally Endangered, State Endangered, USFWS Bird of Conservation Concern

Distribution

Least Bell's Vireo was formerly known to breed from interior northern California near Red Bluff in Tehama County south through the Sacramento and San Joaquin valleys and Sierra Nevada foothills, and in the coastal ranges from Santa Clara County south to the approximate vicinity of San Fernando in Baja California. It also occurred in the Owens and Death valleys in Inyo County and at scattered oases and canyons throughout the Mojave Desert. Currently, the Vireo's breeding range is in southern California, with large populations in Riverside and San Diego counties and smaller populations in Santa Barbara, Ventura, and San Diego counties and in northern Baja California.

Habitat

The Least Bell's Vireo is a summer resident of cottonwood-willow forest, oak woodland, shrubby thickets, and dry washes with willow thickets at the edges.

Occurrence in Study Area

In 2003, a breeding population was observed at the Santa Clara river south of the Hwy 101 Bridge, 2 miles NNW of Oxnard (CDFG 2007). Bell's Vireo has also been recently reported at Naval Base Ventura County, Point Mugu, though the breeding status at the site has not been confirmed. Potential suitable breeding habitat is present in the willow scrub habitat located in the eastern section of the Ventura County Game Preserve and potentially within the Point Mugu Game Preserve.

g. **Belding's Savannah Sparrow** (*Passerculus sandwichensis beldingi*) State Endangered

Distribution

Belding's Savannah Sparrows are year-round residents of coastal salt marshes from Goleta Slough in Santa Barbara County to northern Baja California. The latest statewide count was coordinated by USFWS in 1996, and 2,350 breeding pairs were counted. The largest populations at that time occurred at Mugu Lagoon (400 pairs), Upper Newport Bay (252 pairs), Tijuana Marsh (250 pairs), and Anaheim Bay (234 pairs). At least 100 pairs each were counted at Bolsa Chica Wetlands, Santa Margarita River Estuary, and Penasquitos Lagoon.

Habitat

Belding's occupy the mid-to upper littoral zone of coastal saltmarsh habitats. Tall, dense pickleweed vegetation in large areas of saltmarsh habitat is preferred; foraging occurs throughout the saltmarsh and adjacent habitats. Breeding is initiated in December to January when males begin defending territories, nest-building begins in March and the first broods generally hatch by early April. Nests are restricted to estuarine wetlands and generally dominated by pickleweed (*Salicornia virginica* and *S. subterminalis*). Up to three broods in one season may be attempted. Breeding territories are relatively small, allowing dense populations of breeding Belding's to occur in appropriate habitat areas.

Occurrence in Study Area

Belding's are present in fragmented patches of saltmarsh habitat throughout the Study Area, though most are primarily concentrated in two areas: 1) between the Halaco slag pile and the Reliant Energy parcel, and 2) the saltmarsh in the southern portion of the Ventura County Game Preserve. As mentioned previously, a large population of breeding Belding's is present immediately east of the Study Area at Naval Base Ventura County, Point Mugu. The southern coastal saltmarsh habitats in the Study Area thus provides important dispersal areas and alternative breeding and wintering habitats for Belding's. Major threats to Belding's in the Study Area include anthropogenic disturbances such as walkers and their pets, and introduced predatory species such as feral cats and Norway rats.

h. Tidewater goby (*Eucyclogovius newberryi*) - Federally Endangered, CDFG Species of Special Concern

Distribution

The tidewater goby is a unique fish endemic to California that is restricted to brackish waters of coastal wetlands. It formerly occurred in at least 87 lagoons from San Diego County to Humboldt County and has been extirpated from most of these sites.

Habitat

The tidewater goby is a benthic species that occupies low-salinity waters in shallow lagoons and the lower reaches of coastal streams. It has been documented in water temperatures from 35 to 73 degrees Fahrenheit, depths of 5 to 7 feet, and salinities from zero to 10 parts per thousand. The tidewater goby spends all life stages in the brackish waters of coastal lagoons.

Occurrence in Study Area

Although not seen in during the 2004 site visits conducted by WRA, this species is present in the lagoon formed by Oxnard Industrial Drain at the coastal side of the Halaco slag pile. The available tidewater goby habitat encompasses approximately 0.3 to 1.0 hectare (0.7 to 2.5 acres). Ownership at this locality includes the City of Oxnard, as well as public and private entities. Tidewater gobies were first collected here by Ambrose and Lafferty in 1993. Tidewater gobies were present during surveys in 1998 and 2004. The J Street Drain is not designated as "Water Quality Limited" by the State Water Resources Control Board (USFWS 2005a).

FEDERAL AND/OR STATE SPECIES OF CONCERN AND FULLY PROTECTED SPECIES

a. Southern California saltmarsh shrew (*Sorex ornatus salicornicus*) CDFG Species of Special Concern

Distribution

Southern California saltmarsh shrews are confined to coastal marshes in Los Angeles, Orange, and Ventura counties. Known occurrence extends from Ormond Beach, Ventura County south to the salt marshes around Anaheim Bay and Newport Beach in Orange County.

Habitat

Very little is known about the specific habitat needs of the southern California saltmarsh shrew. Based on other ornate shrew species living in similar habitats, they probably require fairly dense ground cover, nesting sites above mean high tide that are free from inundation, and moist surroundings.

Occurrence in Study Area

This species was observed in the coastal freshwater/brackish marsh habitat northeast of the Halaco slag pile during live mammal trapping by Impact Sciences, Inc. in 1991. A total of 300 trap-nights were conducted. Potential habitat for this species is available in many of the southern coastal salt marsh and coastal freshwater/brackish marsh habitats throughout the Study Area.

b. San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) CDFG Species of Special Concern

Distribution

This species is confined to coastal southern California. It was formerly common from the coast to desert habitats but is now scattered along the coast in remnant local patches.

Habitat

The San Diego black-tailed jackrabbit occurs in open habitats, primarily including grasslands, sage scrub, desert scrub, and juniper and oak woodlands.

Occurrence in Study Area

One San Diego black-tailed jackrabbit was observed in the southern foredune area southeast of the Halaco site in 1991 (Impact Sciences 1996). Potential habitat is available for this species in the non-native grassland, mixed transitional habitats of the Study Area.

c. Double-crested Cormorant (*Phalacrocorax auritus*) CDFG Species of Special Concern

Distribution

The Double-crested Cormorant is a year-long resident along the entire coast of California and on inland lakes, in fresh, salt, and estuarine waters (Zeiner et al. 1990). In California it formerly bred on coastal cliffs and offshore islands along the coast from Marin County to La Jolla, and in the interior in northeasthern California, the Sacramento and San Joaquin Valleys, and the Salton Sea (Grinnell and Miller 1944). Presently the Double-crested Cormorant breeds in scattered locations throughout coastal and central California.

Habitat

Double-crested Cormorants nest in fresh, brackish, and saltwater areas across North America (USFWS 1992). These birds nest in trees, rocky slopes, and islands, and have also been noted to nest on artificial structures. Double-crested Cormorants are the only one of the three Cormorant species in the western United States that occur in fresh water and are also the most common on large, landlocked bays.

Occurrence in Study Area

Large colonies of Cormorants were observed roosting on the uplands immediately adjacent to the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland habitat, and on the beach habitat between the lagoon and the ocean. Foraging habitat is also available within the open waters adjacent to the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland habitat and ocean. Many Cormorants were observed flying over the Study Area.

d. American Bittern (*Botaurus lentiginosus*)

Distribution

The American Bittern is primarily a non-breeding or winter resident of California in freshwater emergent wetland habitats. It occurs rarely in saline emergent wetlands along the coast.

Habitat

Prefers tall, dense emergent vegetation to hide, roost, and forage within.

Occurrence in Study Area

This species was observed in the vicinity of the Halaco slag pile by Impact Sciences in 1991 (Impact Sciences 1996). Potential habitat is available for this species in coastal freshwater/brackish marsh habitat supporting dense stands of emergent vegetation and in some of the duck ponds on the Ventura County Game Preserve.

e. Great Blue Heron (*Ardea herodias*) CDFG Protected Rookery

Distribution

The Great Blue Heron is one of the most widespread and adaptable wading birds in North America occurring both in marine and freshwater systems from sea level to nearly 5000 feet. In California this species is widely distributed, absent only from high mountain and desert habitats.

Habitat

Great Blue Herons forage for fish, frogs and invertebrates in slow moving or calm freshwater and also along coastal shorelines. This species is also known to forage in fields for small mammals. Great Blue Herons nest in trees, bushes, on ground and artificial structures. Nesting usually occurs near water, preferring islands or swamps, if available, to avoid ground predators (Butler 1992).

Occurrence in Study Area

Suitable foraging habitat for this species is present in the open water areas and brackish marsh habitat within the Study Area. Potential rookery habitat is available near the duck club ponds in dense riparian vegetation. Great Blue Herons were observed in Study Area during the WRA site visits.

f. Great Egret (*Ardea alba*) CDFG Protected Rookery

Distribution

The Great Egret occurs along North American coasts and along scattered interior lakes and waterways. In California, Great Egrets winter throughout the western half of the state and breeds in along the Klamath and Warner Basins in the northeastern corner of the state, at scattered locations in the Central Valley, along the coast in Humboldt County, throughout the San Francisco Bay area, and Monterey County, and locally along Colorado River and Salton Sea (McCrimmon et al. 2001).

Habitat

Great Egrets forage in a wide variety of wetland habitats, including marshes, swamps, streams, rivers, ponds, lakes, impoundments, lagoons, tidal flats, canals, ditches, and fish-rearing ponds. Also feeds in flooded agricultural fields and occasionally in some upland habitats. This species nests in colonies with members of their own species as well as other species of waterbirds. Nests mostly in woody vegetation, shrubs, and trees, often near highest points in the colony. They utilize both freshwater wetlands and marine-estuarine habitats to breed.

Occurrence in Study Area

Numerous individuals were observed foraging in open water habitat during the WRA site visits. No rookery sites are known to occur in the vicinity. Great Egrets likely utilize the Study Area as foraging and resting grounds, using brackish marsh, duck pond and open water habitats.

g. Snowy Egret (*Egretta thula*) CDFG Protected Rookery

Distribution

In California, Snowy Egrets breed in localized areas along the coast, throughout the San Francisco Bay Area, and along the Sacramento and San Joaquin Rivers. This species winters along the California coastline.

Habitat

Snowy Egrets occur in shallow estuarine sites for feeding including: salt-marsh pools, tidal channels and shallow bays. In California irrigation channels, estuarine habitats, marshes, and river courses are preferred habitat. Most individuals breed on islands in mixed-species colonies within protected estuaries, when available.

Occurrence in Study Area

Numerous individuals observed foraging in open water habitat during WRA site visits. No known rookery in vicinity, but likely utilizes the Study Area as foraging and resting grounds. May also use coastal freshwater/brackish marsh, duck pond and open water habitats.

h. Black-crowned Night Heron (*Nycticorax nycticorax*) CDFG Protected Rookery

Distribution

This species breeds on every continent except Australia and Antarctica. Across North America, night herons breed from Washington west through Quebec and New Brunswick in the east, south through coastal Mexico, locally in Central America, the Caribbean, and Hawaii. Distribution is determined by suitable wetland habitat for feeding with the largest concentrations found in coastal areas (Davis 1993).

Habitat

Night herons are found in swamps, streams, rivers, margins of pools, ponds, lakes, lagoons, tidal mudflats, salt marsh, man-made ditches, canals, ponds, reservoirs, and wet agricultural fields.

Occurrence in Study Area

Suitable foraging and roosting habitat available along drainage canals, J-Street Drain and duck ponds. Dense emergent wetland vegetation capable of supporting rookery available at the Ventura Game Preserve and likely the Point Mugu Game Preserve. This species was observed during WRA, 2004 site visits.

i. White-faced Ibis (*Plegadis chihi*) CDFG Species of Special Concern

Distribution

The White-faced Ibis is an uncommon summer resident in sections of southern California, a rare visitor in the Central Valley, and is more widespread in migration. This species no longer breeds regularly anywhere in California. Wintering populations are also in decline, particularly in southern California, though a small population has recently been reported at Ventura County Game Preserve.

Habitat

The White-faced Ibis prefers to feed in fresh emergent wetland, shallow lacustrine waters, and muddy ground of wet meadows and irrigated, or flooded, pastures and croplands. Extensive marshes of dense, emergent wetlands are required for nesting.

Occurrence in Study Area

The Ibis was observed flying over the Study Area and at the Ventura County Game Preserve within ponds containing water. The breeding status of this species in the vicinity is unknown, though it is generally not expected to breed in the region. The palustrine emergent-persistent (*Schoenoplectus*) seasonally-flooded mixohaline-managed duck pond wetland habitats provide suitable habitat for this species. Foraging habitat is also available in the various drainage canals, open waters, and irrigated sod farms adjacent to the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland.

j. White-tailed Kite (*Elanus leucurus*) CDFG Fully Protected

Distribution

The White-tailed Kite is a yearlong resident in coastal and valley lowlands in California. It is apparently not migratory, but Binford (1979) found some movements in coastal California. The Kite inhabits herbaceous and open stages of most habitats mostly in cismontane California (Zeiner et al. 1990).

Habitat

Kites forage in open grasslands, meadows, farmlands and emergent wetlands (Zeiner et al. 1990). It uses herbaceous lowlands with variable tree growth and dense populations of voles (Waian and Stendell 1970). White-tailed Kites use substantial groves of dense,

broad-leafed deciduous trees for nesting and roosting . They nest near open foraging areas. The Kite makes its nest of loosely piled sticks and twigs and lined with grass, straw, or rootlets. The nest is placed near top of dense oak, willow, or other tree stands (Zeiner et al. 1990).

Occurrence in Study Area

White-tailed Kites were observed in non-native grassland (coyote brush/western ragweed association), mixed transitional, non-native grassland (ruderal vegetation association), and palustrine emergent-persistent (*Schoenoplectus*) seasonally-flooded mixohaline managed duck pond wetland habitats during WRA's July 2004 site visits.

k. Northern Harrier (*Circus cyaneus*) CDFG Species of Special Concern

Distribution

The Northern Harrier occurs in California from annual grassland up to lodgepole pine and alpine meadow habitats. Harriers are a permanent resident of the northeastern plateau and coastal areas; less common resident of the Central Valley (Zeiner et al. 1990). The Northern Harrier is a year-round resident and/or winter visitor in areas of suitable habitat. Breeding populations are much reduced in southern California coastal areas.

Habitat

The Harrier's preferred foraging habitat consists of tidal salt, brackish, and freshwater marshes, diked seasonal and freshwater marshes (including vernal pools), salt ponds, grasslands, and agricultural lands (USFWS 1992). These hawks nest in the dense grass and brush vegetation often at the water's edge. As ground nesters, they are highly vulnerable to predation by gulls and various mammals and to trampling by deer and cattle. Nesting in moist areas and by water makes nests susceptible to flooding.

Occurrence in Study Area

Northern Harriers were observed foraging over upland, southern coastal salt marsh, coastal freshwater/brackish marsh, and ruderal areas, as well as the dry ponds of the Ventura County Game Preserve. Suitable nesting and roosting habitat is available throughout the Study Area in areas of suitable vegetated habitat.

l. Cooper's Hawk (*Accipiter cooperii*) CDFG Species of Special Concern

Distribution

Cooper's Hawks breed throughout much of the United States, southern Canada, and northern Mexico. This species is a year-round resident in California (Curtis et al. 2006).

Habitat

The Cooper's Hawk breeds in extensive forests and smaller woodlots of deciduous, coniferous, and mixed pine-hardwoods, as well as in pine plantations, in both suburban and urban habitats. Wintering habitat is similar to breeding habitat (Curtis et al. 2006).

Occurrence in Study Area

Cooper's Hawks have been observed roosting and foraging in the upland habitats of the Study Area (D. Pereksta, USFWS, pers. email, March 28, 2005). Breeding habitat is available for Cooper's Hawks in the deciduous trees of the Ventura County Game Preserve and possibly the Point Mugu Game Preserve.

m. Sharp-shinned Hawk (*Accipiter striatus*) CDFG Species of Special Concern

Distribution

Sharp-shinned Hawks are widely distributed throughout North America. In California, Sharp-shinned Hawks are residents of Northern California uplands and winters in the Central Valley and southern California.

Habitat

This species breeds in dense woodland, including coniferous forests. Wintering birds prefer open areas, including agricultural and urban areas where they feed on birds at and around feedlots and bird feeders (Bildstein and Meyer 2000)

Occurrence in Study Area

Sharp-shinned Hawks have been observed roosting and foraging in the upland habitats of the Study Area (D. Pereksta, USFWS, pers. email, March 28, 2005). The Study Area is outside of the known breeding range for the Sharp-shinned Hawk.

n. Merlin (*Falco columbarius*) CDFG Species of Special Concern

Distribution

The Merlin is an uncommon winter migrant in California and frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and early successional stages.

Habitat

Merlin's habitat range from annual grasslands to ponderosa pine and montane hardwood-conifer habitats, favoring coastlines, lakeshores and wetlands. Prey consist of small birds, mammals and occasionally insects.

Occurrence in Study Area

This species has been observed foraging in sod farm habitat for pipits and Horned Larks from fall through spring (D. Pereksta, USFWS, pers. email, March 28, 2005). Species occurs as winter resident and may also forage in open upland habitats. Study Area is outside of known breeding range.

o. Mountain Plover (*Charadrius montanus*) USFWS Bird of Conservation Concern, CDFG Species of Special Concern

Distribution

Breeds in Montana, the tablelands of Wyoming, Colorado plains, central New Mexico, and in Oklahoma and Texas panhandles. Most plovers winter in the Central, Imperial and San Joaquin valleys of California (Knopf and Wunder 2006).

Habitat

Generally inhabit open, flat, dry tablelands with low, sparse vegetation. This species avoids forested or shrubby montane landscapes and seeks locally dry, disturbed areas. They are also found on prairies with short, intensively grazed grasses. In California, plovers spend about 75% of their time in tilled agricultural fields, but prefer heavily grazed annual grasslands or burned fields (Knopf and Wunder 2006).

Occurrence in Study Area

Species is uncommon and declining but occasional visitors are observed in the sod farms during fall migration. Usually occurs in small numbers (1-3) (D. Pereksta, USFWS, pers. email, March 28, 2005).

p. Long-billed Curlew (*Numenius americanus*) USFWS Bird of Conservation Concern, CDFG Species of Special Concern

Distribution

The Long-billed Curlew breeds on the interior prairies and wet meadows of North America; the species winters primarily along the California coast and interior valleys. Curlews are found along the coast and Imperial and Central Valleys in the winter, with small numbers of non-breeders remaining on the coast in summer.

Habitat

Long-billed Curlews utilize coastal estuaries, open grasslands and croplands for winter habitat. Upland areas adjacent to foraging areas are important for roosting during high tides.

Occurrence in Study Area

Long-billed Curlews were observed foraging along the shoreline at Ormond Beach and in the open, dry ponds of the Ventura County Game Preserve. Curlews may also attempt to utilize the cultivated sod fields as foraging and roosting habitat, though frequent activity at the fields may discourage regular use. Suitable foraging habitat is also available in shallow open water areas and seasonally inundated salt panne and sand flat habitat.

q. Western Burrowing Owl (*Athene cuniculara*) USFWS Bird of Conservation Concern, CDFG Species of Special Concern

Distribution

This species was formerly common throughout California in appropriate habitats but has since experienced a decline in all areas.

Habitat

This species occupies open, dry grassland and desert areas with perches and small mammal burrows, particularly those of the California ground squirrel. Old burrows are used for cover and nesting.

Occurrence in the Study Area

Suitable habitat is available for this species in the non-native annual grassland (ruderal vegetation association) and non-native annual grassland (coyote brush/western ragweed association) habitats, as well as roadside berms. Spiny Rush (*Juncas acutus L.*) occurs along the marsh dune interface at Ormond Beach which can potentially provide Burrowing Owls with cover. (Ferren and Maney 1986). Suitable burrow habitat was observed in upland habitat areas during the July 2004 site visits, though no Owls were observed. A 2002 occurrence just south of McGrath State Beach Campgrounds, Oxnard (CDFG 2007) and observations of wintering Owls by USFWS personnel and local birders in the sod farm vicinity (D. Pereksta, USFWS, pers. email, March 28, 2005) suggest that Burrowing Owls may persist in the region. However, according to the California Audubon website (Audubon California 2006), breeding Burrowing Owls are thought to be extirpated from coastal Ventura County.

r. Loggerhead Shrike (*Lanius ludovicianus*) USFWS Bird of Conservation Concern, CDFG Species of Special Concern

Distribution

The Loggerhead Shrike is found throughout the United States. In California, it is a common resident and winter visitor in lowlands and foothills.

Habitat

Shrikes prefer open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. The highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats.

Occurrence in Study Area

Loggerhead Shrikes were observed in the vicinity of non-native annual grassland (ruderal vegetation association) and non-native annual grassland (coyote brush/western ragweed association) habitats during the WRA's July 2004 site visits. Suitable breeding and foraging habitat is available in the other upland areas of the Study Area as well.

s. Yellow Warbler (*Dendroica petechia brewsteri*) CDFG Species of Special Concern

Distribution

Once a common breeding species in California, Yellow Warbler population numbers declined rapidly in the twentieth century due to habitat loss and cowbird parasitism. Present from 250 feet to almost 9,000 feet in California.
Habitat

Breeds in coastal and desert riparian areas and is typically found in deciduous riparian habitats such as cottonwoods, willows and alders during the summer months.

Occurrence in Study Area

Suitable habitat for this species is available in the willow scrub habitats at the Ventura County Game Preserve and likely Point Mugu Game Preserve.

t. California Horned Lark (*Eremophila alpestris actia*) CDFG Species of Special Concern

Distribution

This species is a year-long resident within the state of California. After breeding, large flocks may form, including migrants from outside of California.

Habitat

Horned Larks are found in a variety of open habitats, from grasslands along the coast and deserts at sea level to alpine dwarf-shrub habitat above the treeline. This species nests on the ground in the open.

Occurrence in Study Area

This species was observed in 1991 in the vicinity of Ormond Beach (Impact Sciences 1996) and is regularly observed foraging in the sod farms (D. Pereksta, USFWS, pers.

email, March 28, 2005). Suitable breeding habitat is available for this species in the upland non-native grassland and mixed transitional habitat areas.

u. Tri-colored Blackbird (*Agelaius tricolor*) USFWS Bird of Conservation Concern, CDFG Species of Special Concern

Distribution

This colonial species is largely endemic to California and is most abundant in the Central Valley and vicinity. Overall distribution and breeding colony locations may vary from year to year.

Habitat

Preferred habitat for this species consists of large freshwater marshes dominated by tules and cattails with open accessible water and access to suitable foraging areas with abundant insect prey within one kilometer of the breeding colony. This species may forage in agricultural fields, pastures, dry seasonal pools, feedlots and dairies during all seasons.

Occurrence at the Study Area

Suitable emergent wetland habitat is available along Oxnard Industrial Drain, adjacent coastal freshwater/brackish marsh habitat, and at the dense emergent wetland vegetation at the Ventura County Game Preserve duck ponds and likely Point Mugu Game Preserve duck ponds. This species is commonly observed at Ventura County Game Preserve during the winter and smaller numbers are present during breeding season (D. Pereksta, USFWS, pers. email, March 28, 2005).

v. South Coast garter snake (*Thamnophis sirtalis ssp.*) CDFG Species of Special Concern

Distribution

California endemic known only from scattered localities along the southern California coastal plain from Ventura County south to San Diego County.

Habitat

South Coast garter snake appears restricted to marsh and upland habitats near permanent water that have substantial areas or strips of riparian vegetation.

Occurrence in Study Area

A South Coast garter snake was observed crossing Arnold Road adjacent to the cultivated sod fields during the one of WRA's July 2004 site visits. Suitable habitat for this species is available primarily in the southern coastal salt marsh and coastal

freshwater/brackish marsh habitats but it may occur in nearly all of the upland habitat types available at the Study Area.

w. Sandy beach tiger beetle (*Cicindela hirticollis gravida*) CDFG Special Status Invertebrate

Distribution

Inhabits areas along the coast of California from San Francisco Bay to northern Mexico.

Habitat

Found in areas of clean, dry, light-colored sand adjacent to non-brackish waters.

Occurrence in Study Area

Despite the fact that this species was not observed during focused invertebrate surveys of the North Ormond Beach area in 1991 (Impact Sciences 1996), suitable habitat is present in the southern foredune habitat at the Study Area. The species has been observed nearby at Naval Base Ventura County, Point Mugu (1982), McGrath State Beach (1970), and Port Hueneme (1979) (CDFG 2007).

x. tiger beetle (*Cicindela senilis frosti*) CDFG Special Status Invertebrate

Distribution

Inhabits the marine shoreline from the Central California Coast south to the salt marshes of San Diego.

Habitat

Dark-colored mud in the lower zone and dried salt pannes in the upper zone.

Occurrence in Study Area

Observed at Mugu Lagoon, on the banks of Calleguas Creek (1982), salt marshes on the south side of the west arm of Mugu lagoon (1982) (CDFG 2007). Suitable habitat available along the banks of the J-Street Lagoon and other drainage canals and possibly in the salt panne areas.

y. globose dune beetle (*Coelus globosus*) CDFG Special Status Invertebrate

Distribution

Inhabitant of coastal sand dune habitat from Bodega head in Sonoma County south to Ensenada, Mexico.

Habitat

Inhabits foredunes and sand hummocks. Burrows beneath the sand surface and is most common beneath dune vegetation.

Occurrence in Study Area

Observed by Dr. Mattoni during focused invertebrate surveys of Ormond Beach in 1991. The globose dune beetle was the most abundant beetle in the dune collections during his survey. Suitable habitat for this species persists in the southern foredune habitat area located adjacent to the Ormond Beach shoreline.

z. wandering (=saltmarsh) skipper (*Panoquina errans*) CDFG Special Status Invertebrate

Distribution

A rare species that ranges from coastal southern California and Baja California to mainland western Mexico.

Habitat

Occurs in coastal saltmarsh habitats where saltgrass (*Distichlis spicata*) is available (larval host plant) as well as other nectar sources.

Occurrence in Study Area

Observed during WRA site visits in southern coastal salt marsh, coastal freshwater/brackish marsh, and non-native annual grassland (coyote brush/western ragweeed scrub habitats. Preferred habitat is within saltmarsh vegetation throughout Study Area.

71 species of wildlife were observed in or adjacent to the Study Area during the site assessment (Appendix B). Many of the wildlife observed in the Study Area are commonly found species and are adapted to occupying disturbed or urban areas. A total of 28 special status wildlife species have been observed within the Study Area by WRA or others (Appendix A).

3.3.2 Plants

Based upon a review of the resources and databases given in Section 2.3.1, 50 special status plant species have been documented in the general vicinity of the Study Area (Appendix A). The Study Area contains suitable habitat for 30 of these species; the July site assessment occurred during the blooming period of 15 of the 30 special status plant species with a potential to occur in the Study Area. Three special status plant species were observed within the Study Area during the WRA July site visits: salt marsh bird's-beak (*Cordylanthus maritimus ssp.*

maritimus), spiny rush (*Juncus acutus ssp. leopoldii*), and woolly seablite (*Suaeda taxifolia*)[4]. These observed locations are included as Figure 6; woolly seablite (*Suaeda taxifolia*) is not mapped because it was not clearly differentiated from other *Suaeda* species during the time of the field surveys. In addition, two other special status plant species have also been documented within the Study Area by others: red sand-verbena (*Abronia maritima*) and Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*) (Jones and Stokes 1998; CDFG 2007; Impact Sciences 1996).

Of the remaining 25 species with potential to occur within the Study Area, Aphanisma (*Aphanisma blitoides*), San Fernando Valley spineflower (*Chorizanthe parryi var. fernandina*), and white rabbit-tobacco (*Pseudognaphalium leucocephalum*) are the only special status plant species with a low potential to occur. Thirteen of the special status plant species, Braunton's milk-vetch (*Astragalus brauntonii*), Ventura marsh milk-vetch (*Astragalus pycnostachyus var. lanosissimus*) South Coast saltscale (*Atriplex pacifica*), Davidson's saltscale (*Atriplex serenana var. davidsonii*), Brewer's calandrinia (*Calandrinia breweri*), seaside calandrinia (*Calandrinia maritima*), Catalina mariposa lily (*Calochortus catalinae*), Santa Barbara morning-glory (*Calystegia sepium ssp. binghamiae*), dunedelion (*Malacothrix incana*), cliff malacothrix (*Malacothrix saxatilis var. saxatilis*), Mexican malacothrix (*Malacothrix similis*), rayless ragwort (*Senecio aphanactis*), and salt spring checkerbloom (*Sidalcea neomexicana*) have a moderate potential for occurrence in the Study Area. Nine special status plant species have a high potential for occurrence: southern tarplant (*Centromadia parryi ssp. australis*), Orcutt's pincushion (*Chaenactis glabriuscula var. orcuttiana*), dune larkspur (*Delphinium parryi ssp. blochmaniae*), beach spectaclepod (*Dithyrea maritima*), small spikerush (*Eleocharis parvula*), suffrutescent wallflower (*Erysimum insulare ssp. suffrutescens*), vernal barley (*Hordeum intercedens*), California spineflower (*Mucronea californica*), and estuary seablite (*Suaeda esteroa*).

Appendix A summarizes the potential for occurrence for the special status plant species documented in the general vicinity of the Study Area, and the 30 species with potential to occur are also described in following sections.

POTENTIAL SPECIAL STATUS PLANT SPECIES WITH A LOW POTENTIAL TO OCCUR WITHIN THE STUDY AREA

a. Aphanisma (*Aphanisma blitoides*) - (CNPS List 1B)

This species is an annual herb that occurs in coastal bluff scrub, coastal dunes, coastal scrub. It is commonly found on bluffs and steep slopes near the ocean in sandy or clay soils. It can occur at elevations ranging from 1-305 meters and blooms March through June. It has been collected historically near the mouth of the Ventura River. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a low potential to support this species. These habitats constitute marginal coastal scrub habitat and do not contain steep slopes.

[4] See footnote, p. 13.

b. **San Fernando Valley spineflower** (*Chorizanthe parryi var. fernandina*) - (Federal Candidate, State Endangered, List 1B)

This species is an annual herb that occurs on sandy soils within coastal scrub habitats. It can occur at elevations ranging from 3-1035 meters and blooms April through June. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a low potential to support this species. These habitats constitute marginal coastal scrub habitat. Furthermore, the soils within these regions are primarily comprised of loams (USDA 1970).

c. **White rabbit-tobacco** (*Pseudognaphalium leucocephalum*) - (List 2)

This species is a perennial herb that occurs on sandy or gravelly soils within chaparral, cismontane woodland, riparian woodland, and coastal scrub habitats. It can occur at elevations ranging from 0-2100 meters and blooms August through November (less commonly in July and December). The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a low potential to support this species. These habitats constitute marginal coastal scrub habitat. However, the soils within these regions are primarily comprised of loams (USDA 1970).

POTENTIAL SPECIAL STATUS PLANT SPECIES WITH A MODERATE POTENTIAL TO OCCUR WITHIN THE STUDY AREA

a. **Braunton's milk-vetch** (*Astragalus brauntonii*) - (Federal Endangered, List 1B)

This species is a perennial herb that occurs in closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland on recent burns or disturbed areas. This species is usually found on carbonate. It can occur at elevations ranging from 4-640 metes and blooms February through July. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a moderate potential to support this species.

b. **Ventura marsh milk-vetch** (*Astragalus pycnostachyus var. lanosissimus*) - (Federal Endangered, State Endangered, List 1B)

This species is a perennial herb that occurs in coastal salt marshes, within reach of high tide or protected by barrier beaches. It is also infrequently found near seeps or on sandy bluffs. This species was presumed extinct but was rediscovered near Oxnard in 1997. The palustrine emergent-persistent (*Salicornia, Jaumea, Atriplex*) seasonally-flooded mixohaline mid-high diked estuarine salt-marsh habitat has a moderate potential to support this species. In mid-2004 this species was introduced by CDFG as a single experimental population of approximately 50 individual plants located about 250 meters east of the southeast edge of Reliant station. However, after approximately 20 percent survivorship with good individual plant growth through that summer, the entire population expired following prolonged inundation caused by a heavy rainstorm in October 2004. Portions of the Study Area still may be considered good habitat for future experimental plant introductions, but localized hydrology is a critical variable.

c. South Coast saltscale (*Atriplex pacifica*) - (List 1B)

This species is an annual herb that occurs in coastal bluff scrub, coastal dune, coastal scrub, and playas. It can occur at elevations ranging from 0-140 meters and blooms March through October. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), coyote brush (myoporum tree association), and southern foredune habitats have a moderate potential to support this species.

d. Davidson's saltscale (*Atriplex serenana var. davidsonii*) - (List 1B)

This species is an annual herb that occurs in coastal bluff scrub, and alkaline coastal scrub habitats. It can occur at elevations ranging from 3-250 meters and blooms April through October. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a moderate potential to support this species. The soils in these regions range from slightly to moderately alkaline (USDA 1970).

e. Brewer's calandrinia (*Calandrinia breweri*) - (List 4)

This species is an annual herb that occurs in chaparral and coastal scrub habitats. It is commonly found on sandy or loamy sands, often on disturbed sites and burns. It can occur at elevations ranging from 10-1220 meters and blooms March through June. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a moderate potential to support this species.

f. Seaside calandrinia (*Calandrinia maritima*) - (List 4)

This species is an annual herb that occurs in coastal bluff scrub, coastal scrub, and valley and foothill grassland habitats. It can occur at elevations ranging from 5-300 meters and blooms February through August. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a moderate potential to support this species.

g. Catalina mariposa lily (*Calochortus catalinae*) - (List 4)

This species is a bulbiferous perennial herb that occurs within chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats. It can occur at elevations ranging from 15-700 meters and blooms February through May. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a moderate potential to support this species.

h. Santa Barbara morning-glory (*Calystegia sepium ssp. binghamiae*) - (List 1A)

This species is a perennial herb that occurs in coastal marshes and swamps. It can occur at elevations ranging from 0-20 meters and blooms May through November. The wetland habitats within the Study Area have a high potential to support this species; however, this species may be extinct.

I. Dunedelion (*Malacothrix incana*) - (List 4)

This species is a perennial herb that occurs in coastal dune and coastal scrub habitats. It can occur at elevation ranging from 2-35 meters and blooms January through October. It has been reported historically from dunes on the coast of Ventura County. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats. The southern foredune habitat has a high potential to support this species. Translocation experiments at UC-Santa Barbara have successfully re-established specimens from northern Santa Barbara County to the Goleta area.

j. Cliff malacothrix (*Malacothrix saxatilis var. saxatilis*) - (List 4)

This species is a rhizomatous perennial herb that occurs in coastal bluff scrub and coastal scrub habitats. It can occur at elevations ranging from 3-200 meters and blooms March through September. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats have a moderate potential to support this species.

k. Mexican malacothrix (*Malacothrix similis*) - (List 1A)

This species is an annual herb that occurs in coastal dune habitats. It can occur at elevations ranging from 0-40 meters and blooms April through May. The southern foredune habitat within the Study Area has a high potential to support this species; however, this species was last seen in 1925 (CNPS 2007) and may be extinct.

l. Rayless ragwort (*Senecio aphanactis*) - (List 2)

This species is an annual herb that occurs in cismontane woodland and coastal scrub habitats. It is often found on drying alkaline flats. This species has a moderate potential to occur in the palustrine emergent-persistent (*Cressa, Suaeda, Atriplex*) seasonally-saturated alkali flats/depressional wetland habitat within the Study Area.

m. Salt spring checkerbloom (*Sidalcea neomexicana*) - (List 2)

This species is an perennial herb that occurs in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, alkaline playas, and brackish marshes. It can occur at elevations ranging from 0-1500 meters and blooms March through June. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), coyote brush (myoporum tree association), and coastal freshwater/brackish marshes within the Study Area.

POTENTIAL SPECIAL STATUS PLANT SPECIES WITH A HIGH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

a. Southern tarplant (*Centromadia parryi ssp. australis*) - (List 1B)

This species is an annual herb that occurs along the margins of marshes and swamps, valley and foothill grassland, and vernal pools. It can occur at elevations ranging from 0-425 meters and blooms May through November. This species has a high potential to occur in many of the mixed transitional habitats that are located along the fringes of the wetland habitats within the Study Area.

b. Orcutt's pincushion (*Chaenactis glabriuscula var. orcuttiana*) - (List 1B)

This species is an annual herb that occurs in coastal bluff scrub and coastal dune habitats. It can occur at elevations ranging from 3-100 meters and blooms January through August. The southern foredune habitat within the Study Area has a high potential to support this species.

c. Dune larkspur (*Delphinium parryi ssp. blochmaniae*) - (List 1B)

This species is a perennial herb that occurs in chaparral and coastal dune habitats. It can occur at elevations ranging from 0 to 200 meters. The southern foredune habitat within the Study Area has a high potential to support this species.

d. Beach spectaclepod (*Dithyrea maritima*) - (State Threatened, List 1B)

This species is a rhizomatous perennial herb that occurs within coastal dune and sandy coastal scrub habitats. It can occur at elevations ranging from 3-50 meters and blooms March through May. The southern foredune habitat within the Study Area has a high potential to support this species.

e. Small spikerush (*Eleocharis parvula*) - (List 4)

This species is a perennial herb that occurs in slightly brackish to freshwater ponded or tidal marshes and swamps. It can occur at elevations ranging from 0-2500 meters and blooms June through September. The wetland habitats within the Study Area have a high potential to support this species, and this species was observed at McGrath Lake in the 1980s, a coastal site approximately 10 miles north of the Study Area (Ferren, 2006).

f. Suffrutescent wallflower (*Erysimum insulare ssp. suffrutescens*) - (List 4)

This species is a perennial herb that occurs in coastal bluff scrub, coastal dune, and coastal scrub habitats. It can occur at elevations ranging from 0-150 meters and blooms January through July. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats. The southern foredune habitat has a high potential to support this species.

g. Vernal barley (*Hordeum intercedens*) - (List 3)

This species is an annual herb that occurs in coastal dune, coastal scrub, saline flats and depressions within valley and foothill grassland, and vernal pools. It can occur at elevations ranging from 5-1000 meters and blooms March through June. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats. The southern foredune and palustrine emergent-persistent (*Cressa, Suaeda, Atriplex*) seasonally-saturated alkali flats/depressional wetland habitats have a high potential to support this species.

h. California spineflower (*Mucronea californica*) - (List 4)

This species is an annual herb that occurs in chaparral, cismontane woodland, coastal dune, coastal scrub, and sandy soils within valley and foothill grassland. It can occur at elevations ranging from 0-1400 meters and blooms March through August. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum tree association) habitats. The southern foredune habitat has a high potential to support this species.

I. Estuary seablite (*Suaeda esteroa*) - (List 1B)

This species is a perennial herb that can occur in clay silt and sand substrates within coastal salt marshes. It can occur at elevations ranging form 0-5 meters and blooms May through January. The southern coastal salt marsh habitats have a high potential to support this species.

SPECIAL STATUS PLANT SPECIES THAT HAVE BEEN DOCUMENTED WITHIN THE STUDY AREA

a. Red sand-verbena (*Abronia maritima*) - (List 4)

This species is a perennial herb that occurs in coastal dune habitats. It can occur at elevations ranging from 0-100 meters and blooms February through November. Red sand-verbana is present throughout the dunes of the Study Area, although identification may be difficult with likely hybridization with *Abronia umbellata*. This species was reported to occur within the southern foredune and transitional habitat within the Study Area (Impact Sciences 1996) and was also included on the 309-acre Nature Conservancy parcel located immediately east and northeast of the Halaco slag pile (Jones and Stokes 1998). In addition, this species was observed by ERM within the southern foredune community in 2002 (ERM 2002) (Figure 6).

b. **Salt marsh bird's-beak** (*Cordylanthus maritimus ssp. maritimus*) - (Federal Endangered, State Endangered, List 1B)

This species is a hemiparasitic annual herb that occurs in the higher elevation of coastal salt marshes and coastal dunes. It can occur at elevations ranging from 0-30 meters and blooms May through October. This species has been previously documented within several of the coastal salt marsh habitats within the Study Area, as well as by WRA during the July 2004 site visits (CDFG 2007, ERM 2002) (Figure 6). Additionally, several populations were observed by WRA within the managed duckponds of the Ventura County Game Preserve (Figure 6).

c. **Spiny rush** (*Juncus acutus ssp. leopoldii*) - (List 4)

This species is a rhizomatous perennial herb that occurs within coastal dunes, meadows and alkaline seeps, and coastal salt marshes and swamps. It can occur at elevations ranging from 3-900 meters and blooms May through June. This species is reported on the 309-acre City of Oxnard/Study Area (now the Nature Conservancy parcel located immediately east and northeast of the Halaco slag pile) species list provided in Jones and Stokes (1998). Additionally, this species was observed within several of the wetland habitats within the Study Area during surveys performed by ERM in 2002 and by WRA in July 2004 (Figure 6).

d. **Coulter's goldfields** (*Lasthenia glabrata ssp. coulteri*) - (List 1B)

This species is an annual herb that occurs in coastal salt marshes, playas, valley and foothill grassland, and vernal pools habitats. It is often found on alkaline soils, and in coastal areas is generally restricted to wetlands with reduced salinity in the spring and hypersalinity during the summer drought. This species can occur at elevations ranging from 1-1220 meters and blooms February through June. Coulter's goldfields was not observed during the July 2004 site visits but it has been previously documented within the palustrine emergent-persistent (*Salicornia, Jaumea, Atriplex*) seasonally-flooded mixohaline mid-high diked estuarine salt-marsh wetland habitat (Jones and Stokes Associates, Inc 1998; CDFG 2007).

e. **Woolly seablite** (*Suaeda taxifolia*) - (List 4)

This species is an evergreen shrub that occurs in coastal bluff scrub, coastal dune, and along the margins of coastal salt marshes and swamps. It can occur at elevations ranging from 0-50 meters and blooms January through December. Woolly seablite was most likely the species observed in several of the wetland habitats during the July 2004 site visits and is included on the 309-acre Nature Conservancy parcel (Jones and Stokes 1998).[5]

[5] See footnote, p. 13.

f. California seablite (*Suaeda californica*) - (Federal Endangered, List 1B)

This species is an evergreen shrub that is only known to inhabit well-drained marshy beach ridges along relatively high-energy shorelines with coarse sediments in Morro Bay (Goals Project 2000). It can occur at elevations ranging from 0-5 meters and blooms July through October. California seablite is formerly known from the San Francisco Bay Area; however, development has eliminated its habitat. This species is often confused with woolly seablite and estuary seablite in southern California, but California seablite is not known to occur there (CNPS 2001). This species was not observed within the Study Area during the July 2004 site visits; however it is included on the 309-acre Nature Conservancy and State Coastal Conservancy parcel species lists provided in Jones and Stokes (1998) and ERM (2002), respectively. According to Wayne Ferren, before he and Sherry Whitmore described estuary seablite, California seablite was the name that was most commonly misapplied to estuary seablite (Ferren 2005). As a result, it is likely that California seablite was misidentified within the Study Area and it is most likely estuary seablite (*Suaeda esteroa*).

In addition, silverscale saltbush (*Atriplex argentea*) was observed within the Perkins parcel by Wayne Ferren on January 20, and September 2, 1999 (Ferren 2002). Silverscale saltbush is not a special status species; however, Wayne Ferren believes that this species is locally rare (Ferren 2002, 2005).

4.0 CONCLUSION AND RECOMMENDATIONS

Twenty seven (27) special status plant species and 42 special status wildlife species have documented presence or a moderate or high potential to occur within the Study Area. Additionally, the southern coastal salt marsh, coastal freshwater/brackish marsh, willow scrub, and southern foredune habitats are sensitive plant communities identified within the Study Area. Moreover, the open water, ocean, and beach habitats will also be considered sensitive areas by the CDFG, CCC, NOAA Fisheries Service, and Corps (Figure 4).

Based upon the results of the biological assessment, special status species, their potential habitat, and sensitive plant communities within the Study Area may be impacted by potential habitat restoration activities. The following sections present recommendations for future studies and potential permitting requirements that will more than likely be required to implement restoration activities within the Study Area.

4.1 Sensitive Plant Communities and Aquatic Features

4.1.1 Wetlands and Waters

The southern coastal salt marsh, coastal freshwater/brackish marsh, open water, and ocean habitats within the Study Area have the potential to be considered jurisdictional by the Corps, RWQCB, and CCC. During the July 2004 site visits, wetland hydrology and/or wetland hydrology indicators were not observed within some of the wetland habitats. Additionally, large expanses of salt panne and sand flat habitat were completely devoid of hydrophytic plants. As a result, it is unclear if these areas would meet the Army Corps of Engineers or California

Coastal Commission wetlands definition. WRA recommends that two separate wetland delineations following the Corps and CCC procedures be conducted to determine the exact jurisdictional boundaries of these habitats. Furthermore, the delineation should occur in Spring (March through May) to allow for proper identification of the plant species growing within these areas and to observe wet season hydrology.

The Corps wetlands delineation should be submitted to the Los Angeles Corps District and the CCC; the CCC wetlands delineation should be submitted to the City of Oxnard Planning Department. The approved wetlands delineations are called jurisdictional determinations and will define the Corps and CCC jurisdiction within the Study Area (i.e, wetlands and "other waters" boundaries). A wetlands delineation was conducted for a portion of the Study Area by Impact Sciences, Inc. in 2000, including the Nature Conservancy parcel. This document may serve to define the Corps and CCC jurisdictions for this portion of the Study Area (Impact Sciences 2000).

If the restoration activities will impact existing wetland habitats within the Study Area, a permit from the Corps will be necessary. Additionally, a coastal development permit will be required for impacts to wetlands that were determined to be within CCC jurisdiction. Furthermore, since federal endangered plant and animal species are located within the Study Area, the Corps must consult with the United States Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act. Under this scenario, the Corps cannot permit impacts to wetlands until the USFWS issues a biological opinion. The biological opinion includes detailed mitigation measures that the applicant must implement in order to protect the federal endangered plant and animal species within the Study Area.

4.1.2 Riparian Habitat

The existing willow scrub plant community in the Study Area would meet the definition of "riparian habitat" described in the Fish and Game Code and the California Code of Regulations or Statewide Interpretive Guidelines, since it is adjacent to aquatic habitat. This community would also be considered a sensitive plant community under CEQA and CCC policies; therefore, potential impacts to this community must be evaluated and mitigation measures (such as protection and avoidance, impact minimization, or compensation) must be proposed.

4.1.3 Other Sensitive Communities

The southern foredune plant community and intertidal area between the dune and the ocean is also considered a sensitive community. Similarly, potential impacts to these communities must be evaluated under CEQA, and mitigation measures addressed. Mitigation measures could include preserving additional dune habitat offsite or enhancing remaining dune habitat within the Study Area.

4.2 Exotic Species

Exotic species are present at significant densities within several plant communities within the Study Area including: the non-native annual grassland (ruderal vegetation association), coyote brush (eucalyptus association), coyote brush (myoporum tree association), mixed transitional, and southern foredune habitats. Exotic species principally degrade natural habitats through

displacement of native species. Some species such as iceplant (*Carpobrotus* sp.) can overrun dune habitats at such densities that native species are completely removed, ultimately converting natural dune habitats to a non-native monoculture.

The coyote brush (myoporum tree association), mixed transitional, and southern foredune habitats within the Study Area represent a great opportunity to restore natural habitat through the removal of exotic species. The enhancement of these habitats through exotic species abatement and native plant installation should be incorporated in future habitat restoration efforts.

Additionally, invasive New Zealand mudsnails (*Potamopyrgus antipodarum*) have been observed in drains in the City of Oxnard's parcel in the northwestern portion of the Study Area (Birosik 2007). This species has only recently been documented in coastal Southern California (CDFG 2006), but as it has infested other areas of California, attention should be paid to its presence and potential to spread.

4.3 Wildlife

A number of surveys (protocol-level or otherwise) should be conducted to determine the presence/absence of federal and state listed species and species of concern/special concern in the various habitat patches of the Study Area. USFWS protocol surveys should be conducted to determine the presence/absence of Light-footed Clapper Rail in suitable habitat areas. General breeding bird surveys should be conducted to determine the presence/absence of the following federal and state-listed species in suitable habitat areas: Western Snowy Plover, California Least Tern, Belding's Savannah Sparrow, and Least Bell's Vireo. Other breeding species of concern/special concern may be noted at this time. Summer flight season surveys should also be conducted to determine the extent of Saltmarsh Wandering Skipper habitat.

Once the presence/absence of federal and state-listed species and species of concern/special concern has been determined in potential suitable habitat areas, mitigation measures designed to reduce impacts to these species during the restoration process can be determined. Project-related impacts to federally-listed, proposed, and candidate species or their habitat will require consultation with the USFWS and NOAA Fisheries Service. Appropriate mitigation measures would be developed during these interagency meetings. Such measures may include:

- Implementation of multiple phases of restoration so that major portions of habitat for a particular species or species group are not impacted all at once. Phases would incorporate timing of habitat use as well as overall habitat loss (winter foraging vs. spring breeding habitat).

- Complete avoidance of particularly sensitive wildlife habitat areas such as the Snowy Plover/Least Tern nesting area at Ormond Beach, including buffer zones.

- Primary disturbance to habitat areas, including vegetation clearing, conducted during the non-breeding season so that breeding birds are not interrupted, disturbed or harmed, a violation of the Migratory Bird Treaty Act.

- Salvage of native plant materials to facilitate restoration and preserve local genotypes, by direct transplanting or storage at nursery facilities. This may include on-site storage and usage of cleared native vegetative materials that may harbor important invertebrate species, including the eggs of local butterfly species and other important species of the local food chain. On-site storage may also prevent contamination with exotic invasive species from off-site nursery facilities.

- Pre-disturbance surveys for small mammals, amphibians, reptiles and invertebrates so that they may be relocated to undisturbed areas prior to activity.

- Installation of silt fences to reduce erosion into water channels and prevent small mammal and reptile species from entering active restoration/disturbed areas

4.3.1 Essential Fish Habitat

The 1996 Sustainable Fisheries Act (Public Law 104-297) requires cooperation between Federal and State agencies in achieving EFH goals of habitat enhancement, conservation and protection (NMFS 1998). The restoration of the Ormond Beach area will involve Federal consultation and permitting at several stages. The restoration activities within the Study Area will probably not adversely affect EFH in the long term though there may be some short term adverse affects during the construction phase.

An EFH consultation can be consolidated with other Federal interagency consultation, coordination and environmental review procedures such as the National Environmental Policy Act (NEPA), Fish and Wildlife Coordination Act, Clean Water Act, Endangered Species Act (ESA) or in the ESA Section 7 Consultation associated with the tide water goby (NMFS 1999). It is recommended that there should be an EFH discussion of impacts and benefits in the EIR/EIS for the entire Ormond Beach Restoration project and then it will be possible for the NOAA Fisheries Service to assess if adverse impacts are likely to occur and if EFH recommendations would be required (Chesney 2004, personal communications).

EFH most specifically involves three groups of fish that are Federally managed under the auspices of the Pacific Fisheries Management Council in Portland Oregon. Recreationally important species such as striped bass *(Morone saxatilis)*, for which there is no commercial fishery, are not covered. Commercially important species that are specifically managed by the states such as the Pacific herring (*Clupea pallasi*), and California grunion (*Leuresthes tenuis*), are similarly not covered directly under terms of the Sustainable Fisheries Act. But in practice, adverse effects to forage fish such as herring and grunion are considered under an EFH consultation as an indirect effect (NMFS 1999).

The largest grouping of Federally managed fish are collectively covered under the terms of the Pacific Groundfish Management Plan. The Pacific Groundfish Management Plan covers species such as sole, flounders, demersal sharks, rockfish and similar species that live most of their life near the bottom of the ocean. No groundfish would normally be found in the open water adjacent to the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland though there are probably several groundfish species regularly using the channels near the Ventura County Game Preserve.

The next major grouping of fish includes the salmonids covered under terms of the Pacific Salmon Fishery Management Plan. Though salmon are occasionally caught offshore of the Ormond Beach Area and as far south as Mexico it would be highly unusual for any to naturally migrate into coastal wetlands such as the Ormond Beach area. Steelhead trout may be occasionally found in Mugu Lagoon tributaries when individual fish swim upstream investigating potential spawning waters; however, none of the study area with its muddy waterway substrate supports suitable habitat for steelhead spawning and rearing. The nearest suitable steelhead habitat is upcoast at Santa Clara River and downcoast at Big Sycamore Creek.

The Coastal Pelagic Fishery Management Plan covers five species; northern anchovy *(Engraulis mordax)*, Pacific sardine (*Sardinops sagax)*, Pacific mackerel (*Scomber japonicus)*, Jack mackerel *(Trachurus symmetricus)* and the market squid (*Loligo opalescens)*. Restoration of the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently-flooded lagoon shore wetland and adjacent open waters to increase flow is likely to encourage several pelagic species to use the lagoon for foraging and possibly juvenile rearing.

The restoration of Batiquitos Lagoon near San Diego included increasing ocean water circulation in the lagoon. Sampling after the restoration of Batiquitos lagoon indicated the presence of anchovies, halibut, sharks, herring rockfish all of which are Federally managed species of fish and consequently involved in an EFH consultation.

Tradeoffs between creation of Essential Fish Habitat versus intertidal marshlands, transitional, and upland habitat is inherent in large-scale coastal wetland projects such as that proposed within the Study Area. Because the natural historical conditions of the “Ormond Beach Estuary” apparently was open only intermittently to the ocean, it may not have had a diverse fish population. Therefore, consideration should be given as to the goals of the project: if restoration is interpreted in the narrow sense of putting something back the way it was, then that provides one set of design parameters; whereas if the goal is to establish diverse estuarine and marine fish populations that would provide a different set of design parameters. The measurement of success of the project, however, has to be based upon the goals. Therefore, the lack of a diverse fish population would not signal a failed project if the goals of the project and design parameters did not include the establishment of conditions to support a diverse fish population (Ferren 2006).

4.4 Plants

Protocol-level plant surveys should be conducted to determine the exact location of special status plant species within the Study Area. The surveys should follow the guidelines published by the CNPS (CNPS 2001). Surveys should be conducted during the appropriate blooming period of all special status plant species that could potentially occur within the Study Area. Based upon WRA’s site assessment and literature review, three surveys should be conducted. The early season survey should be conducted between the months of January and April, the mid-season survey should be conducted in the month of May, and the late season survey should be conducted in July.

Although several populations of special status plant species are already known to occur within the Study Area, protocol-level surveys will identify all populations so that potential impacts can be assessed. If special status plant populations will be impacted by restoration activities, the

expected adverse impacts can be mitigated by identifying an on-site area that will support the plants, and either physically transplant them to the identified areas or collect seeds and plant them in the identified area. A mitigation plan to move the plants should be prepared by a qualified biologist that describes methodologies, such as plant/seed collection and transplanting timing and techniques, need for soil treatment or irrigation, maintenance, performance criteria, and monitoring methods.

As appropriate, additional populations of sensitive plant species should be established within the Study Area so that potential stochastic events cannot extirpate the small populations of some species that remain at Ormond Beach. Furthermore, pre-mitigation or restoration experiments should be implemented when feasible and when relevant to help guide the implementation process of the project (Ferren 2006).

4.5 Habitat Linkages and Corridors

Large-scale restoration projects such as the proposed Ormond Beach restoration project require careful planning to ensure that plant and wildlife species may disperse to and from suitable habitat areas once the physical alteration of the landscape is complete. There are two key components to this planning, habitat linkages and wildlife corridors. Habitat linkages provide connectivity between habitat patches and year-round foraging, reproduction and dispersal habitat for resident plants and animals (MSCP 1995). Wildlife corridors are landscape features that allow animal movement between two patches of habitat (Ogden 1996) and are species-specific. Both elements maintain demographic and genetic exchange between conserved habitat areas. Whereas habitat linkages may serve as wildlife corridors, the reverse is not always true.

In order to maximize the quality of the restored habitats within the Study Area and to minimize wildlife fatalities a habitat linkages and corridors analysis should be completed as part of the overall restoration plan. According to Penrod *et al.* (2004) identification and/or planning of habitat linkages and wildlife corridors may be accomplished using the following methodology:

1. Focal Species: Identify a taxonomically diverse group of focal species that are sensitive to habitat loss and represent diverse ecological requirements and movement needs.

2. Landscape Permeability Analysis: Analyze landscape permeability for focus species using GIS techniques that model the relative cost for a species to move between core areas based on how each species is affected by habitat characteristics, such as slope, elevation, vegetation composition and road density. This analysis identifies a least cost corridor, or the best potential route for each species moving between protected core areas (Walker and Craighead 1997, Craighead *et al.* 2001, Singleton *et al.* 2002).

3. Patch Size and Configuration Analysis: Analyze habitat patches within the Study Area to identify priority conservation areas needed to maintain linkage function. Identify whether dispersal distances would allow individuals to move between habitat patches.

4. Field Investigations: Conduct field investigations to ground-truth results of prioritization analyses and identify barriers and management concerns.

5. Design Compilation: Compile results of analyses and field investigations to produce linkage design plan.

4.5.1 Opportunities

Considerable opportunities for habitat linkages exist both within and adjacent to the Study Area due to the relative lack of development separating individual property parcels and source populations of native plants and wildlife already present in the vicinity. These populations should be connected by a mosaic of native and upland habitats that draw species from current habitat areas into new habitat areas.

Such opportunities could include connecting the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis)* semi-permanently-flooded lagoon shore wetland to a larger permanently or intermittently open lagoon. A new lagoon could be created within the Southland Sod parcel and the parcel located immediately east and northeast of the Halaco slag pile. This would expand the existing habitat for many fish and shorebird species including the tidewater goby, California Least Tern and Snowy Plover. Moreover the adjacent marsh, transitional habitats, and uplands could be designed to support avian nesting colonies or populations of special status plants such as salt marsh bird's-beak, or Coulter's goldfields.

Other opportunities to expand and link existing habitat corridors could include creating additional tidal marsh habitats and enhancing the existing duck ponds within the Ventura County Game Preserve. These newly created habitats could be linked to other restored wetland features within the adjacent Southland Sod, Agromin, and State Coastal Conservancy parcels. Such a connection could be created via hydrological connection through ODD 3 or merely by designing the wetlands such that they are in close proximity to one another. This action would greatly benefit avian species by creating a large, connected, and diverse habitat that is suitable for foraging and breeding. Moreover, plant species such as salt marsh bird's-beak would benefit through the connection of two separate populations located within the Ventura County Game Preserve and State Coastal Conservancy parcels.

There is also an opportunity to enhance habitat/ecosystem edges for dependent or restricted species, for multi-habitat species, and as refuges during high tide conditions. Larval and adult butterflies, for example, can have dependency on different plant species from different habitats. In the case of the Pygmy Blue Butterfly, the larval forms forage only on plants that belong to the spinach or Chenopodiaceae family (e.g. *Atriplex* spp., *Suaeda* spp., *Arthrocnemum*, and *Salicornia* spp.), which often grow in or on the margin of salt marshes; whereas the adult butterfly nectars on flowers from families often occurring in upland or transitional habitats (e.g. Asteraceae). In the case of the rare Wandering Skipper, the larval form forages only on saltrass (*Distichlis spicata*), whereas the adult butterly is a generalist, but like the Pygmy Blue often depends on flowers of plants in adjacent uplands or transition areas (Ferren 2006).

In another example, the endangered salt marsh bird's-beak (*Cordylanthus maritimus spp. maritimus*) grows in tidal or formally tidal salt marsh habitats but depends on pollination by native bees that are usually ground-nesting types from adjacent uplands. Regarding the use of transitional and adjacent upland habitats as refuges, the endangered Light-footed Clapper Rail, which is generally restricted to the intertidal salt marsh habitat of estuaries, depends upon adjacent uplands as a refuge during extreme high and storm tides. There are many other examples of the importance of wetland edges, but those provided here demonstrate the need to plan for, design, and manage high-quality upper marsh, transitional, and upland habitats for many important ecosystem functions (Ferren 2006).

Other elements of an evaluation methodology and eventual management strategy could also include the following guidelines (Ferren 2006):

1. Examine the impacts of site alternatives in a regional, landscape context.

2. Plan for long-term change and, as possible, for unexpected even stochastic events.

3. Preserve rare landscape elements, critical habitats, and associated species.

4. Avoid choices that deplete natural resources over a broad area.

5. Retain large contiguous or connected areas that contain critical habitats.

6. Minimize the introduction and spread of non-native species.

7. Minimize or compensate for effect (e.g. strormwater runnoff) of nearby development on ecological processes.

8. Implement or influence application of land use and land management practices that are compatible with the natural potential of the area.

4.5.2 Constraints

Current barriers to demographic and genetic exchange between habitat areas at the Study Area include canals, agriculture, industrial infrastructure and chain-link fences. These features may act as both active and passive barriers. For example, roads, canals, fences and infrastructure block the physical movement of terrestrial species such as reptiles, small mammals, and amphibians from one parcel to the next across the Study Area. Though birds can overcome these barriers through flight, their physical presence may discourage movement because of noise or human disturbance level. Purely passive barriers (where no physical structure is present) include much more difficult to quantify levels of human and pet disturbance at Ormond Beach, as well as overflight occurrences of paragliders and ultralight aircraft (CDFG 2005, USFWS 2005b).[6]

With regards to maximizing habitat quality and linkages within the Study Area, the primary physical constraints affecting the survival and movement of species include Edison Drive and the Reliant Energy parcel, and the Naval Base Ventura County, Point Mugu.

Edison Drive and the Reliant Energy parcel are constraints to the movement of species because these utilities essentially bisect the Study Area. If a large open water and marsh habitat were to be created within the Study Area, Edison Drive would most likely need to be raised in order to maintain an east to west hydrological connection while allowing access to the Reliant Energy parcel. Although a large contiguous habitat could be created while these utilities remained, the value of the created habitat would be reduced because the utilities would still effectively divide the habitat in half.

---

[6] In late 2005 the City of Oxnard enacted a municipal ordinance prohibiting paraglider takeoffs and landings, and since that time these aerial vehicles have stopped flying over the Ormond Beach area and this disturbance to Ormond Beach birds has ended.

The Naval Base Ventura County, Point Mugu is also a constraint to the survival and movement of species within the Study Area. Currently, the Ventura County Game Preserve represents an excellent opportunity to restore coastal salt marsh habitats and open water avian fauna foraging habitat within the Study Area. However, creating such habitats within close proximity to an active airfield could potentially increase avian fatalities due to bird strikes. A study being conducted at Goleta Slough and the Santa Barbara Municipal Airport addresses the potential of increased bird strikes due to the manipulation of estuarine and palustrine wetlands adjacent to the airport runways. Ongoing and future results of this study may be useful in the design of the Ormond Beach project and subsequent management of the restored ecosystem.

5.0 REFERENCES

Atwood, J. L., P. D. Jorgensen, R. M. Jurek, and T. D. Manolis. 1977. California Least Tern Census and Nesting Survey, 1977. Calif. Dep. Fish and Game, Sacramento. Nongame Wildl. Invest. E-1-1, Job V-2.11, Final Rep. 35pp.

Audubon California. 2006. Audubon and the Western Burrowing Owl. Available at: http://www.audubon-ca.org/burrowing_owl.htm.

Bildstein, K. L., and K. Meyer. 2000. Sharp-shinned Hawk (Accipiter striatus). In The Birds of North America, No. 482 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Binford, L. C. 1979. Fall Migration of Diurnal Raptors at Pt. Diablo, California. West. Birds 10:1-16.

Birosik, S. 2007. Email to Peter Brand on March 19, 2007.

Butler, R. W. 1992. Great Blue Heron. In The Birds of North America, No. 25 (A. Poole, P. Stettenheim, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, DC: The American Ornithologists' Union.

California Coastal Commission. 1981. Statewide Interpretive Guideline for Wetlands and Other Wet Environmentally Sensitive Habitat Areas.

California Department of Fish and Game. 2007. Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. Sacramento.

California Department of Fish and Game, 2006. New Zealand Mudsnail, Known locations in California. Available at: http://www.dfg.ca.gov/fishing/html/Administration/MudSnail/MSLocList.asp.

California Department of Fish and Game, L. Ryan Broddrick. 2005. Letter to the Honorable Fran Pavley, Assembly Member, 41st District. March 10, 2005.

California Department of Fish and Game. Environmental Services Division (ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code.

California Invasive Plant Council (Cal-IPC). 2006. California Invasive Plant Inventory: Cal-IPC Publication 2006-2. California Invasive Plant Council, Berkeley, CA. Available at: http://www.cal-ipc.org/ip/inventory/index.php

California Native Plant Society. 2007. Inventory of Rare and Endangered Vascular Plants of California (online edition, v7-07c). California Native Plant Society, Sacramento, California. Available at: http://www.cnps.org/inventory.

California Native Plant Society. 2001. Inventory of Rare and Endangered Plants of California. Sixth edition. California Native Plant Society, Sacramento, California.

Carter, H.R., G.J. McChesney, D.L. Jaques, C.S. Strong, M.W. Parker, and J.E. Takekawa. 1990. Breeding Populations of Seabirds on the Northern and Central California Coasts in 1989 and 1990. Final Draft Rep. for the USFWS, No. Prairie Wild. Res. Cent.

Chesney, Bryant. 2004. Personal Communication Between Bob Abbott and National Marine Fisheries Service. September.

Cogswell, H. L. 1977. Waterbirds of California. Univ. California Press, Berkeley. 399pp

Coastal Conservancy. 2003. Ormond Beach Acquisitions, Project Summary. File No. 90-048. October 23.

Craighead, April C., Elizabeth Roberts, F. Lance Craighead. 2001. Bozeman Pass Wildlife Linkage and Highway Safety Study. Prepared for American Wildlands. Available at: http://www.wildlands.org/research.html

Curtis, O. E., R. N. Rosenfield and J. Bielefeldt (2006). Cooper's Hawk. (Accipiter cooperii). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Laboratory of Ornithology.

Davis, W. E., Jr. 1993. Black-crowned Night-Heron (Nycticorax nycticorax). In The Birds of North America, No. 74 (A. Poole and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, D.C.: The American Ornithologists' Union.

Environmental Resources Management (ERM). 2002. Biological Resource Surveys for the Ormond Beach Propoerty, Oxnard, California. Prepared for Occidental Petroleum. July.

Ferren, W. R. Jr. And D. L.. Magney. 1986. Wetland Vegetation of the Proposed Madalay Beach County Park, Oxnard, California. Prepared for Campbell and Campbell. The Herbarium, Department of Biological Sciences, UCSB.

Ferren, W. R., P. Fiedler, R.A. Leidy, K.D. Lafferty, and L. Mertes. 1996. Wetlands of California, Part II: Classification and Description of Wetlands of the Central and Southern California Coast and Coastal Watersheds. Madrono, Vol 42. No. 1 pp. 125-182.

Ferren, W. 2002. Email to armbrustr@vcss.k12.ca.us on September 25, 2002.

Ferren, W. 2005. Email to Tim DeGraff (degraff@wra-ca.com) on February 18, 2005.

Ferren, W. 2006. Letter to Dr. Spencer MacNeil, Aspen Environmental Group on June 19, 2006. Review of Draft Biological Assessment, Ormond Beach, Oxnard, Ventura County, Ca. MC Project No. 05001548A.

Goals Project. 2000. Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish, and wildlife. Prepared by the San Francisco Bay Area wetlands Ecosystem Goals Project. P.R. Olofson, editor. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.

Grinnell, J. and Miller, A. H. 1944. The Distribution of the Birds of California. Cooper Ornithological Club, Berkeley, CA.

Holland R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. The California Department of Fish and Game, October.

Hickman, J.C. (ed.) 1993. The Jepson manual: higher plants of California. University of California Press.

Impact Sciences, Inc. 1996. North Ormond Beach Flood Control Management Plan. Prepared for Ventura County Flood Control District, Ventura, CA.

Impact Sciences, Inc. 2000. Wetlands Delineation for a Portion of the Ormond Beach Specific Plan Area. Prepared for City of Oxnard, California. November.

Jennings, Mark R. and M. P. Hayes. 1994. Amphibians and Reptile Species of Special Concern in California. California Department of Fish and Game.

Jones and Stokes Associates, Inc. 1994. South Ormond Beach Wetland Restoration and Management Plan. Final Draft. Prepared for City of Oxnard, Community Development Department, Oxnard, CA. November.

Jones and Stokes Associates, Inc. 1998. Result of a Biological Survey of an Approximately 309-acre Parcel at Ormond Beach, City of Oxnard, California. July, 24.

Knopf, F. L. and M.B. Wunder. 2006. Mountain Plover (Charadrius montanus). In The Birds of North America, No. 211 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

McClelland Engineers. 1985. Ormond Beach Wetland Restoration and Management Program. October: revised November 20.

McCrimmon, D. A., Jr., J. C. Ogden, and G. T. Bancroft. 2001. Great Egret (Ardea alba). In The Birds of North America, No. 570 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Multiple Species Conservation Program (MSCP). 1995. Technical resource document: Conservation Biology Institute. Available at: http://www.consbio.org/cbi/applied_research/wildlife_corridors/wildlife_corridors.htm

National Marine Fisheries Service (NMFS). 1998. Essential Fish Habitat: New Marine Fish Habitat Conservation Mandate for Federal agencies. NMFS Long Beach CA.

NMFS. 1999. Essential Fish Habitat consultation guidance. NMFS office of Habitat Conservation.

Natural Resources Conservation Service (NRCS). 2002. Field Indicators of Hydric Soils in the United States, version 5.0 G.W. Hurt, P.M. Whited, eds. USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils, Fort Worth, TX.

Ogden. 1996. Biological monitoring plan for the Multiple Species Conservation Program. Prepared for City of San Diego, California Department of Fish and Game, and U.S. Fish and Wildlife Service. April.

Penrod, K., C. Cabañero, P. Beier, C. Luke, W. Spencer, E. Rubin, S. Loe, and K. Meyer. 2004. South Coast Missing Linkages Project: A Linkage Design for the San Gabriel-San Bernardino Connection. South Coast Wildlands, Idyllwild, CA. www.scwildlands.org.

Pereksta, D. USFWS. Email to Trina Schneider (schneider@wra-ca.com) March 28, 2005.

Reed, P. B., Jr. 1988. National list of plant species that occur in wetlands: California (Region 10). U.S. Fish and Wildlife Service Biological Report 88 (26.10).

Sawyer, J.O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society.

Singleton, Peter H., William L. Gaines, Joghn F. Lehmkuhl. 2002. Landscape Permeability for Large Carnivores in Washington: A Geographic Information System Weighted-Distance and Least-Cost Corridor Assessment. USDA Forest Service, Pacific Northwest Research Station, Research Paper PNW-RP-549

Tetra Tech EM, Inc. 2002. Final Integrated Natural Resources Management Plan (INRMP) Naval Base Ventura County (NBVC) Point Mugu, California. Prepared for Department of the Navy, Pt. Mugu, California.

Thompson, W.C. 1994. Shoreline Geomorphology of the Oxnard Plain for Early U.S. Coast Survey Maps. Shore and Beach, Vol. 62, No. 3, pp 39-50.

United States Department of Agriculture (USDA). 1970. Soil Survey, Ventura Area, California. 104 pp. + appendices.

United States Environmental Protection Agency (USEPA). 2007. Superfund National Priorities List for Halaco Engineering Company, Oxnard, Ventura County, California. Available at http://www.epa.gov/superfund/sites/npl/nar1760.htm.

United States Fish and Wildlife Service (USFWS). 2005a. Recovery Plan for the Tidewater Goby (*Eucyclogobius newberryi*). U.S. Fish and Wildlife Service, Portland, Oregon. vi + 199 pp.

United States Fish and Wildlife Service (USFWS), Carl T. Benz. 2005b. Letter to Tad Dougherty, Camarillo Airport Manager. March 9, 2005.

United States Fish and Wildlife Service (USFWS). 2004. Unofficial Species Lists, Sacramento Fish and Wildlife Service. Sacramento. June 5.

US Fish and Wildlife Service. 1992. Status and trends report on the wildlife of the San Francisco estuary. San Francisco Estuary Project, US Fish and Wildlife Service, Sacramento, CA.

Ventura County Planning Division. 2001. Coastal Area Plan of the Ventura County General Plan, last amended 12-05-01 and 11-2001.

Waian, L. B., and R. C. Stendell. 1970. The White-tailed Kite in California with observations of the Santa Barbara population. Calif. Fish and Game 56:188-198.

Walker, R. and L. Craighead. 1997. Analyzing Wildlife Movement Corridors in Montana Using GIS. ESRI User Conference Proceedings.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White. 1990. California's Wildlife, Volume I-III: Amphibians and Reptiles, Birds, Mammals. California Statewide Wildlife Habitat Relationships System, California Department of Fish and Game, Sacramento.

Appendix A. Special Status Plant and Wildlife Species

This appendix presents the special status plant and wildlife species with a potential to occur within the Study Area, their habitat requirements, and a rating of potential for occurrence. A biological assessment is intended to identify suitable habitat for special status species known to occur in the vicinity in order to determine their potential to occur within the Study Area. The July 2004 site visits performed by WRA do not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special status species is observed during the site visits, its presence was recorded and discussed.

(1) Not Present. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime). The species has an extremely low probability of being found on the site.

(2) Low Potential. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species has a low probability of being found on the site.

(3) Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

(4) High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

(5) Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable (uncommon wildlife species observed on the site (incidental occurrence observation) receive a “low” potential rating if the site is lacking most habitat components).

Special status plant and animal species that may occur, or are known to occur in habitats similar to those found on the Study Area. List compiled from CNDDB (July 2007), CNPS (July 2007), and USFWS Ventura County lists (April 2004).

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Plants			
red sand-verbena *Abronia maritima*	List 4 (February-November)	Coastal dunes. 0-100 meters	**Present**. Based upon the species list provided in Jones and Stokes Associates, Inc. (1998), this species is present within the 309 Nature Conservancy parcel.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
aphanisma *Aphanisma blitoides*	List 1B (March-June)	Coastal bluff scrub, coastal dunes, coastal scrub, coastal rocky slopes. On bluffs and slopes near the ocean in sandy or clay soils. In steep decline on the islands and mainland. 1-305 meters.	**Low potential**. This species has a low potential to occur within the southern foredune, and non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area. Collected historically near mouth of the Ventura River.
Braunton's milk-vetch *Astragalus brauntonii*	FE, List 1B (February-July)	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; recent burns, disturbed areas, usually on carbonate. 4-640 meters.	**Moderate potential**. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area.
Ventura marsh milk-vetch *Astragalus pycnostachyus* var. *lanosissimus*	FE, SE, List 1B (June-October)	Coastal salt marsh, within reach of high tide or protected by barrier beaches, more rarely near seeps on sandy bluffs. 1-35 meters	**Moderate Potential**. The palustrine emergent-persistent (*Salicornia, Jaumea, Atriplex*) seasonally-flooded-mixohaline-mid-high-diked-estuarine salt marsh habitat has a moderate potential to support this species.
South Coast saltscale *Atriplex pacifica*	List 1B (March-October)	Coastal bluff scrub, coastal dunes, coastal scrub, and playas. 0-140 meters.	**Moderate Potential**. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) and southern foredune habitats within the Study Area.
Davidson's saltscale *Atriplex serenana var. davidsonii*	List 1B (April-October)	Coastal bluff scrub, coastal scrub (alkaline). 3-250 meters.	**Moderate potential.** This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area. The soils within these habitats range from slightly to moderately alkaline.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Plummers's baccharis *Baccharis plummerae ssp. plummerae*	List 4 (May-October)	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub (rocky). 5-425 meters.	**Not present**. No suitable habitat. The Study Area does not contain broadleafed upland forest, chaparral, or cismontane woodland habitats. Additionally, the coyote brush associations within the Study Area do not contain rocky substrates.
Brewer's calandrinia *Calandrinia breweri*	List 4 (March-June)	Chaparral, coastal scrub; sandy or loamy, often on disturbed sites and burns. 10-1220 meters.	**Moderate potential**. The non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area contain loamy soils that may be able to support this species.
seaside calandrinia *Calandrinia maritima*	List 4 (February-August)	Coastal bluff scrub, coastal scrub, valley and foothill grassland. 5-300 meters.	**Moderate potential**. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area.
Catalina mariposa lily *Calochortus catalinae*	List 4 (February-May)	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. 15-700 meters.	**Moderate potential**. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area.
Plummer's mariposa lily *Calochortus plummerae*	List 1B (May-July)	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lover montane coniferous forest. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be common after fire. 90-1610 meters.	**Not present**. No suitable habitat. Although coastal scrub habitat is present within the Study Area, the site is well below the elevation requirements of this species.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
late-flowered mariposa lily *Calochortus weedii var. vestus*	List 1B (June-August)	Chaparral, cismontane woodland, riparian woodland. Usually on dry, open coastal woodland, chaparral and often on serpentinite. 275-900 meters.	**Not present**. No suitable habitat. The Study Area does not contain chaparral, cismontane woodland, riparian woodland habitats, or serpentine soils. Additionally, the site is well below the elevation requirements of this species.
Santa Barbara morning-glory *Calystegia sepium ssp. binghamiae*	List 1A (April-May)	Coastal marshes and swamps. 0-20 meters.	**Moderate potential**. The wetland habitats within the Study Area have a high potential to support this species; however, this species may be extinct.
southern tarplant *Centromadia parryi ssp. australis*	List 1B (May-November)	Marshes and swamps (margins), valley and foothill grassland, and vernal pools. 0-425 meters.	**High potential**. The transitional habitats bordering the wetland habitats within the Study area have a high potential for supporting this species.
Catalina Island mountain-mahogany *Cercocarpus traskiae*	FE, SE, List 1B (March-May)	Chaparral and coastal scrub. Rocky and sausserite gabbro substrate. 100-250 meters.	**Not present**. No suitable habitat. Although coastal scrub habitat is present within the Study Area, the site is well below the elevation requirements of this species.
Orcutt's pincushion *Chaenactis glabriuscula var. orcuttiana*	List 1B (January-August)	Coastal bluff scrub, coastal dunes. 3-100 meters.	**High potential**. This species has a high potential to occur within the southern foredune communities within the Study Area.
San Fernando Valley spineflower *Chorizanthe parryi var. fernandina*	FC, SE, List 1B (April-June)	Coastal scrub (sandy soils). 3-1035 meters.	**Low potential**. There are coastal scrub habitats located within the Study Area; however, the soils within these areas are primarily comprised of loam.
salt marsh bird's-beak *Cordylanthus maritimus ssp. maritimus*	FE, SE, List 1B (May-October)	Coastal salt marsh, coastal dunes. Limited to the higher zones of the salt marsh habitat. 0-30 meters.	**Present**. This species was observed within many of the southern coastal salt marsh habitats within the Study Area during the July 2004 site assessment. Additionally, this species has been documented within the Study Area by others (CDFG 2007).
Santa Susana tarplant *Deinandra minthornii*	SR, List 1B (July-November)	Chaparral, coastal scrub/rocky. 280-760 meters.	**Not present**. No suitable habitat. Although coastal scrub habitat is present within the Study Area, the site is well below the elevation requirements of this species.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
dune larkspur *Delphinium parryi ssp. blochmaniae*	List 1B (April-May)	Chaparral, coastal dunes (maritime). On rocky areas and dunes. 0-200 meters.	**High potential**. This species has a high potential to occur within the southern foredune habitat within the Study Area.
beach spectaclepod *Dithyrea maritima*	ST, List 1B (March-May)	Coastal dunes, coastal scrub (sandy). 3-50 meters.	**High potential**. This species has a high potential to occur within the southern foredune habitat within the Study Area. It is unlikely that this species would occur within the coyote brush associations due to the lack of sandy soils. Although historically ranging as far south as Los Angeles County and possibly Baja California Norte, Mexico, this species currently occurs in the dunes of San Luis Obispo and Santa Barbara counties and on San Nicholas and San Miguel Islands.
Blochman's dudleya *Dudleya blochmaniae ssp. blochmaniae*	List 1B (April-June)	Coastal scrub, coastal bluff scrub, valley and foothill grassland. Occurs on open, rocky slopes; often in shallow clays over serpentinite or in rocky areas with little soil. 5-450 meters.	**Not present**. No suitable habitat. There are no coastal bluff scrub or valley and foothill grassland habitats within the Study Area. Additionally, the coyote brush associations within the Study Area do not contain rocky slopes, clay substrates, or serpentine soils.
marcescent dudleya *Dudleya cymosa ssp. marcescens*	FT, SR, List 1B (April-July)	Chaparral (volcanic); rocky. 150-520 meters.	**Not present**. No suitable habitat. The Study Area does not contain chaparral habitats. Additionally, the site is well below the elevation requirements of this species.
Santa Monica mountains dudleya *Dudleya cymosa ssp. ovatifolia*	FT, List 1B (March-June)	Chaparral, coastal scrub/volcanic, rocky. 150-1675 meters.	**Not present**. No suitable habitat. Although coastal scrub habitat is present within the Study Area, volcanic, rocky substrates do not occur, and the site is below the elevation requirements of this species.
Conejo dudleya *Dudleya parva*	FT, List 1B (May-June)	Coastal scrub, valley and foothill grassland/rocky or gravelly, clay or volcanic. 60-450 meters.	**Not present**. No suitable habitat. The Study Area does not contain valley and foothill grassland habitat. The coastal scrub habitats within the Study Area do not contain the required substrates and are well below the elevation requirements of this species.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Verity's dudleya *Dudleya verityi*	FT, List 1B (May-June)	Chaparral, cismontane woodland, coastal scrub. Often on volcanic rock outcrops in the Santa Monica Mountains. 60-120 meters.	**Not present**. No suitable habitat. The Study Area does not contain chaparral or cismontane woodland habitats. The coastal scrub habitats within the Study Area do not contain volcanic rock outcrops and are well below the elevation requirements of this species.
small spikerush *Eleocharis parvula*	List 4 (June-September)	Marshes and swamps. Slightly brackish to freshwater ponded or tidal sites. 1-2530 meters.	**High potential**. This species has a high potential to occur within the wetland habitats within the Study Area.
Conejo buckwheat *Eriogonum crocatum*	SR, List 1B (April-July)	Chaparral, coastal scrub, valley and foothill grassland. Often on conejo volcanic outcrops and rocky sites. 50-580 meters.	**Not present**. No suitable habitat. Although coastal scrub habitats are present within the Study Area, the site is well below the elevation requirements of this species.
round-leaved filaree *Erodium macrophyllum* (tentative new classification as *California macrophylla*)	List 2 (March-May)	Cismontane woodland, valley and foothill grassland (clay). 15-1200 meters.	**Not present**. No suitable habitat. There are no cismontane woodland or valley and foothill grassland habitats located within the Study Area. Additionally, the soils within the Study Area are primarily comprised of sands and loams.
suffrutescent wallflower *Erysimum insulare ssp. suffrutescens*	List 4 (January-July)	coastal bluff scrub, coastal dune, coastal scrub. 0-150 meters.	**High potential**. This species has a high potential to occur within the southern foredune and non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area.
stinkbells *Fritillaria agrestis*	List 4 (March-June)	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland (clay), sometimes serpentinite. 10-1555 meters.	**Not present**. No suitable habitat. There are no chaparral, cismontane woodland, pinyon and juniper woodland, or valley and foothill grassland habitats located within the Study Area. Additionally, serpentinite is not present within the Study Area and the onsite soils consist primarily of sand and loams.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
vernal barley *Hordeum intercedens*	List 3 (March-June)	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools. 5-1000 meters.	**High potential**. This species has a high potential to occur within the southern foredune, and palustrine emergent-persistent (*Cressa, Suaeda, Atriplex, Salicornia*) seasonally-saturated alkali flats/depressional wetland habitats within the Study Area. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area.
spiny rush *Juncus acutus ssp. leopoldii*	List 4 (May-June)	Coastal dunes, meadows and seeps (alkaline seeps), coastal salt marshes and swamps. 3-900 meters.	**Present**. This species was observed within many several of the wetland habitats and transitional areas within the Study Area during the July 2004 site assessment. Additionally, this species is documented within the Study Area by others Impact Sciences (1996).
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	List 1B (February-June)	Coastal salt marshes, playas, valley and foothill grassland, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-1220 meters.	**Present**. This species has been documented within the palustrine pmergent-persistent (*Salicornia, Jaumea, Atriplex*) seasonally-flooded-mixohaline-mid-high-diked-estuarine salt marsh wetland habitat (Jones and Stokes Associates, Inc 1998; CDFG CDFG).
wavy-leaved malacothrix *Malacothrix foliosa ssp. crispifolia*	List 1B (March-July)	Coastal scrub (rocky). 3-65 meters.	**Not present**. No suitable habitat. The coastal scrub habitat within the Study Area does not contain rocky soils.
dunedelion *Malacothrix incana*	List 4 (January-October)	Coastal dunes, coastal scrub. 2-35 meters.	**Moderate potential**. This species has a high potential to occur within the southern foredune and non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area. However, this species was last collected on Santa Cruz Island in the 1880s (CNPS 2007).

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
cliff malacothrix *Malacothrix saxatilis var. saxatilis*	List 4 (March-September)	Coastal bluff scrub, coastal scrub. 3-200 meters.	**Moderate potential**. This species has a moderate potential to occur within the non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area.
Mexican malacothrix *Malacothrix similis*	List 1A (April-May)	Coastal dunes. 0-40 meters.	**Moderate potential**. This species has a high potential to occur within the southern foredune habitat within the Study Area. However, this species was last seen in 1925 and may be extinct in California (CNPS 2007).
California spineflower *Mucronea californica*	List 4 (March-August)	Chaparral, cismontane woodland, coastal dune, coastal scrub, valley and foothill grassland (sandy). 0-1400 meters.	**High potential**. This species has a high potential to occur within the southern foredune and non-native annual grassland (coyote brush/western ragweed association), coyote brush (eucalyptus association), and coyote brush (myoporum association) habitats within the Study Area.
California Orcutt grass *Orcuttia californica*	FE, SE, List 1B (April-August)	Vernal pools. 15-650 meters.	**Not present**. No suitable habitat. Although shallow alkaline seasonal depressions are located within the Study Area, these habitats do not constitute vernal pools. As a result, it is unlikely that these habitats would be able to supply the habitat requirements of this species.
Lyon's pentachaeta *Pentachaeta lyonii*	FE, SE, List 1B (March-August)	Chaparral (openings), coastal scrub, valley and foothill grassland/rocky, clay. 30-630 meters.	**Not present**. No suitable habitat. There are no chaparral or valley and foothill grassland habitats located within the Study Area. There are coastal scrub habitats; however, the soils within these areas are not rocky and are primarily comprised of loam, and the site is below the elevation requirements of this species.
chaparral rein orchid *Piperia cooperi*	List 4 (March-June)	Chaparral, cismontane woodland, valley and foothill grassland. 15-1585 meters.	**Not present**. No suitable habitat. There are no chaparral, cismontane woodland, or valley and foothill grassland habitats located within the Study Area.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
white rabbit-tobacco *Pseudognaphalium leucocephalum*	List 2 (August-November; uncommon in July and December)	Chaparral, cismontane woodland, coastal scrub, riparian woodland. Sandy or gravelly soils. 0-2100 meters.	**Low potential**. No suitable habitat. There are no chaparral or cismontane woodland habitats located within the Study Area. There is coastal scrub habitat; however, the soils within these areas are primarily comprised of loam.
Sanford's arrowhead *Sagittaria sanfordii*	List 1B (May-October)	Marshes and swamps (assorted shallow freshwater). 0-610 meters.	**Not Present**. No suitable habitat. The wetland habitats located within the Study Area do not provide that habitat requirements of this species because they are either: saline, brackish, or alkaline. Additionally, this species has been extirpated from Southern California (CNPS 2007).
rayless ragwort *Senecio aphanactis*	List 2 (January-April)	Cismontane woodland, coastal scrub. Often found on drying alkaline flats. 15-800 meters).	**Moderate potential**. This species has a moderate potential to occur within the palustrine emergent-persistent (*Cressa, Suaeda, Atriplex, Salicornia*) seasonally-saturated alkali flats/depressional wetland habitat within the Study Area.
salt spring checkerbloom *Sidalcea neomexicana*	List 2 (March-June)	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, alkaline playas, brackish marshes. 0-1500 meters.	**Moderate potential**. This species has a moderate potential to occur within the coastal freshwater/brackish marshes within the Study Area.
estuary seablite *Suaeda esteroa*	List 1B (May-Jan)	Coastal salt marshes in clay silt, and sand substrates. 0-5 meters.	**High Potential**. This species has a high potential to occur within the southern coastal salt marsh habitat in the southern region of the Study Area. This species has been documented to occur within similar habitats at Mugu Lagoon (CDFG 2007).
woolly seablite *Suaeda taxifolia*	List 4 (January-December)	Coastal bluff scrub, coastal dune, margins of coastal salt marshes and swamps. 0-50 meters.	**Present**. Based upon the species list provided in Jones and Stokes Associates, Inc. (1998), this species is present within the 309-acre Nature Conservancy parcel.
woven-spored lichen *Texosporium sancti-jacobi*	CSC (n/a)	Chaparral.	**Not present**. No suitable habitat. There is no chaparral habitat in the Study Area.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Sonoran maiden fern *Thelypteris puberula var. sonorensis*	List 2 (January-September)	Meadows and seeps; along streams and in seepage areas. 50-610 meters.	**Not present**. No suitable habitat. There are no streamside meadows or seeps in the Study Area, and the site is well below the elevation requirements of this species.
Mammals			
southern California saltmarsh shrew *Sorex ornatus salicornicus*	CSC	Southern California Salt Marsh Shrews are confined to the coastal marshes in Los Angeles, Orange, and Ventura counties. Known occurrence extends from Point Mugu, Ventura County south to the salt marshes around Anaheim Bay and Newport Beach in Orange County. Little is known about specific habitat requirements.	**Present.** Observed in saltmarsh area east of slag pile in 1991 (Impact Sciences 1996). May occur in saltmarsh habitat areas throughout Study Area.
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	CSC	Primarily found in rural settings in a wide variety of habitats including oak woodlands and mixed coniferous-deciduous forest. Day roosts highly associated with caves and mines. Very sensitive to human disturbance.	**Low potential.** Study Area provides little opportunity for roosting and no woodland habitat. Human disturbance and nearby development likely precludes occurrence. No records in vicinity.
long-eared myotis *Myotis evotis*		Primarily a forest associated species. Day roosts in hollow trees, under exfoliating bark, rock outcrop crevices and buildings. Other roosts include caves, mines and under bridges.	**Not present**. Forest habitat not available within Study Area or nearby vicinity. No records in vicinity.
fringed myotis *Myotis thysanodes*		Associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwood/sequoia groves. Buildings, mines and large snags are important day and night roosts.	**Low potential.** Study Area provides little opportunity for roosting and no woodland habitat. Human disturbance and nearby development likely precludes occurrence. No records in vicinity.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
long-legged myotis *Myotis volans*		Generally associated with woodlands and forested habitats. Large hollow trees, rock crevices and buildings are important day roosts. Other roosts include caves, mines and buildings.	**Not present**. Forest habitat not available within Study Area or nearby vicinity. No records in vicinity.
Yuma myotis *Myotis yumanensis*		Known for its ability to survive in urbanized environments. Also found in heavily forested settings. Day roosts in buildings, trees, mines, caves, bridges and rock crevices. Night roosts associated with man-made structures.	**Low potential.** May roost in unused structures or under bridges. No records in vicinity.
small-footed myotis *Myotis ciliolabrum*		Occurs in a wide variety of habitats, primarily in relatively arid wooded and brushy uplands near water. Seeks cover in caves, buildings, mines, crevices and occasionally under bridges and under bark.	**Low potential.** Study Area provides little opportunity for roosting. Human disturbance and nearby development likely precludes occurrence. No records in vicinity.
pallid bat *Antrozous pallidus*	CSC	Occupies a variety of habitats at low elevation including grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	**Low potential.** Study Area provides little opportunity for roosting. Human disturbance and nearby development likely precludes occurrence. No records in vicinity.
greater western mastiff bat *Eumops perotis californicus*	CSC	Found in a wide variety of habitat. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	**Low potential.** Study Area does not provide suitable roosting habitat. Human disturbance and nearby development likely precludes occurrence. No records in vicinity.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	CSC	Formerly common from the coast to desert habitats but is now scattered along the coast in remnant local patches.	**Present.** One observed in the southern foredune area southeast of the Halaco slag pile in 1991 (Impact Sciences 1996).

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
San Diego desert woodrat *Neotoma lepida intermedia*	CSC	Common to abundant in Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and most desert habitats. Most abundant in rocky areas with Joshua trees.	**Not present.** Suitable habitat elements not present at the Study Area. No known records in the vicinity.
Birds			
Common Loon *Gavia immer*	CSC	Winter in estuarine and subtidal marine habitats along coast, San Francisco Bay.	**Low potential.** May occur as winter migrant in open water habitats.
California Brown Pelican *Pelecanus occidentalis californicus*	FE, SE, CFP	Found in estuarine, marine subtidal, and marine pelagic waters along the coast. Nest on rocky or low brushy slopes of undisturbed islands.	**Present**. Roosts on beach adjacent to J-Street Lagoon and was observed flying over many habitat types within the Study Area during the WRA site visits. Nearby Mugu Lagoon is important estuarine roost site.
Double-crested Cormorant *Phalacrocorax auritus*	CSC	Nests along coast on sequestered islets, usually on ground with sloping surface or in tall trees along lake margins. Forage for fish in waters generally less than 9 meters deep.	**Present.** Roosts on beach and uplands adjacent to J-Street Lagoon. Suitable foraging habitat available in open water and Pacific Ocean. Suitable undisturbed colonial nest sites lacking.
American Bittern *Botaurus lentiginosus*		Secretive species that hides, rests and roost solitarily amidst tall, dense emergent vegetation, on or near ground. Feeds in tall, fresh or saline emergent wetlands.	**Present**. Observed in the vicinity of north Ormond Beach (Impact Sciences 1996) and sod farms (D. Pereksta, pers. com.). Suitable habitat available at emergent wetland habitat adjacent to Oxnard Industrial Drain and in dense emergent vegetation at duck club ponds.
Western Least Bittern *Ixobrychus exilis hesperis*	CSC	Secretive species that hides, rests and roost solitarily amidst tall, dense emergent vegetation, on or near ground. Feeds in tall, fresh or saline emergent wetlands.	**Low potential.** Uncommon species that breeds in small numbers in few remaining places in California. Small breeding population may persist in San Diego County. Suitable habitat available in dense emergent vegetation at duck club ponds.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Great Blue Heron (rookery) *Ardea herodias*		Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Found in close proximity to foraging areas (rivers and streams, tide-flats, wet meadows.)	**Present.** Suitable foraging habitat in open water areas and brackish marsh habitat. Potential rookery habitat available at duck club ponds in areas of dense riparian vegetation. Species observed in Study Area during WRA site visits.
Great Egret (rookery) *Ardea alba*		Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	**Present.** Numerous individuals observed foraging in open water habitat during WRA site visits. No known rookery in vicinity, species likely utilizes Study Area as foraging and resting grounds. May utilize brackish marsh, duck pond and open water habitats.
Snowy Egret (rookery) *Egretta thula*		Widespread along shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields. Feeds primarily on small fish, crustaceans and large insects.	**Present**. Numerous individuals observed foraging in open water habitat during WRA site visits. No known rookery in vicinity, likely utilize Study Area as foraging and resting grounds. May utilize coastal freshwater/brackish marsh, duck pond and open water habitats.
Black-crowned Night Heron (rookery) *Nycticorax nycticorax*		Common and year-long resident throughout the lowlands of California. Feeds along the margins of fresh and saline emergent habitats and roosts in dense foliage and emergent vegetation.	**Present.** Suitable foraging and roosting habitat available along drainage canals, J-Street Drain and duck ponds. Dense emergent wetland vegetation capable of supporting rookery available at duck club ponds. Species observed during WRA site visits.
White-faced Ibis *Plegadis chihi*	CSC	An uncommon summer resident in sections of southern California, a rare visitsor in the Central Valley, and is more widespread in migration. It prefers to feed in fresh emergent wetland, shallow lacustrine waters, and muddy ground of wet meadows and irrigated, or flooded, pastures and croplands. Nests in dense, fresh emergent wetland. This species no longer breeds regularly anywhere in California.	**Present.** Observed flying over Study Area and foraging at duck club ponds. Likely utilizes emergent wetland habitats and sod farm areas for foraging and roosting during the non-breeding season.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
California Condor *Gymnogyps californianus*	FE, SE, CFP	Endangered, permanent resident of the semi-arid, rugged mountain ranges surrounding the southern San Joaquin Valley. Forages over wide areas of open rangelands, roosts on cliffs and in large trees and snags. Occurs mostly between sea-level and 2700 m (0-9000 ft), and nests from 610-1372 m (2000-6500 ft).	**Not present.** Study Area and vicinity do no provide suitable habitat elements for this species.
Golden Eagle *Aquila chrysaetos*	BCC, CSC, CFP	Found in rolling foothill and mountain areas, sage-juniper flats, dessert. Cliff-walled canyons provide nesting habitat in most parts of range.	**Not present.** Study Area and vicinity do no provide suitable habitat elements for this species.
White-tailed Kite *Elanus leucurus*	CFP	Year-long resident of coastal and valley lowlands; rarely found away from agricultural areas. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	**Present.** Species observed roosting and foraging in upland habitats, including mixed transitional areas, coyote bush/non-native grassland areas, and the dry duck club ponds. Suitable breeding habitat available in trees and large bushes adjacent to upland foraging grounds.
Bald Eagle *Haliaeetus leucocephalus*	FD, SE, CFP	Requires large bodies of water, or free-flowing rivers with abundant fish adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork. Winter visitsor in southern California.	**Low Potential.** This species may occur infrequently within the Study Area. Bald Eagles are known to occur at Mugu Lagoon. As the breeding population on Santa Cruz Island increases, this species is expected to be seen more frequently.
Northern Harrier *Circus cyaneus*	CSC	Found in open grasslands, prairies, and marshes. Tend to nest near water.	**Present.** Suitable breeding and foraging habitat available in saltmarsh, mixed transitional upland, and non-native grassland habitats. Observed foraging and flying over saltmarsh, upland transitional/ Baccharis, sod farms and duck pond habitat areas.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Ferruginous Hawk *Buteo regalis*	BCC, CSC	Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys and fringes of pinyon-juniper habitats. Winter visitsor in California.	**Low potential.** May occur as winter vagrant or visitsor. 1991 occurrence at Mugu Lagoon, perched on fencepost in coastal saltmarsh habitat (CDFG 2007).
Cooper's Hawk *Accipiter cooperii*	CSC	Inhabits areas with dense tree stands or patchy woodlands. Usually nests in deciduous riparian areas or second-growth conifer stands near streams.	**Present.** Study Area is lacking significant patches of woodland habitat for breeding, however specieshas been observed wintering in Study Area vicinity (D. Pereksta, USFWS, pers. com.) and limited deciduous tree breeding habitat is available at the Ventura Co. Game Preserve. This species may forage in upland and sod farm habitats.
Sharp-shinned Hawk *Accipiter striatus*	CSC	Generally associated with woodland habitats. Typically nests in isolated areas away from human disturbance.	**Present.** Study Area is lacking significant patches of woodland habitat for breeding, however species is regularly observed wintering in Study Area vicinity (D. Pereksta, USFWS, pers. email, March 28, 2005). This species may forage in upland and sod farm habitats.
American Peregrine Falcon *Falco peregrinus anatum*	FD, SE, CFP	Breeds near wetlands, lakes, rivers, or the water on high cliffs, banks, dunes, mounds. Requires protected cliffs and ledges for cover. Feeds on a variety of birds, and some mammals, insects, and fish.	**Present**. Species was present historically and was observed in 1991 by Impacts Sciences in the Ormond Beach vicinity (Impact Sciences 1996) and in the sod farm vicinity (D. Pereksta, USFWS, pers. email, March 28, 2005). May utilize all habitats within Study Area for foraging habitat during winter or migration.
Prairie Falcon *Falco mexicanus*	BCC, CSC	Uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner Coast Ranges and Sierra Nevada. Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas.	**Not present.** Uncommon species that is not expected to occur along southern coastline.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Merlin *Falco columbarius*	CSC	Uncommon winter migrant Frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and early successional stages. Ranges from annual grasslands to ponderosa pine and montane hardwood-conifer habitats.	**Present.** Species has been observed foraging in sod farm habitat for pipits and horned larks from fall through spring (D. Pereksta, USFWS, pers. email, March 28, 2005). Species occurs as winter resident and may also forage in open upland habitats. Study Area is outside of known breeding range.
Light-footed Clapper Rail *Rallus longirostris levipes*	FE, SE, CFP	Locally common yearlong in coastal wetlands and brackish areas and in coastal saline emergent wetlands.	**High potential.** Uncommon species but is known to inhabitat marshes at Mugu Lagoon (Tetra Tech 2002) Suitable habitat available in southern coastal saltmarsh habitat and coastal freshwater/brackish marsh habitats.
Western Snowy Plover *Charadrius alexandrinus nivosus*	FT, CSC, BCC	Found on sandy beaches, salt pond levees and shores of large alkali lakes. Need sandy gravelly or friable soils for nesting.	**Present.** Adults and young observed during WRA site visits along Ormond Beach from the J-street drain lagoon south to the Naval property boundary at Arnold Drive. Records from Pt. Mugu (1988), Ormond beach, approx. 1.5 miles sw of Port Hueneme (1998), McGrath State Beach (1978), mouth of Santa Clara River (1978), Oxnard Beach, 4 miles southwest of Oxnard (1997) (CDFG 2007).
Mountain Plover *Charadrius montanus*	BCC, CSC	Winter resident of short grasslands and plowed fields of California, primarily in the Central Valley region.	**Low potential.** Species is uncommon and declining but is an occasional visitsor to the sod farms during fall migration. Usually occurs in small numbers (1-3) (D. Pereksta, USFWS, pers. email, March 28, 2005).
Long-billed Curlew *Numenius americanus*	BCC, CSC	Winters in large coastal estuaries, upland herbaceous areas, and croplands. Breeds in northeastern California in wet meadow habitat.	**Present.** Observed foraging along Ormond Beach shoreline. May utilize shallow open water, inundated salt panne, sand flat, sod farm and seasonal wetlands for foraging and roosting during non-breeding season.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
California Least Tern *Sterna antillarum (=albifrons) browni*	FE, SE, CFP	In Ventura County, California least terns nest at NBVC, Ormond Beach, and just north of the mouth of the Santa Clara River. In 1996, approximately 80 pairs of California least terns nested at Ormond Beach, making this the largest colony in Ventura County. Nests on barren to sparsely vegetated site near water.	**Present.** Adults and young observed during WRA site visits along Ormond Beach. Also observed foraging in lagoon and drainage channels. CNDDB occurrences at Santa Clara river mouth south to McGRath lake, northwest stretch of Pt. Mugu missile test center, Ormond Beach, Oxnard Beach (CDFG 2007).
Western Yellow-billed Cuckoo *Coccyzus americanus occidentalis*	FC, SE, BCC	Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Not present.** Extremely uncommon species that has been extirpated from region. 1942 occurrence at the Santa Clara river from the mouth to the vicinity of Montalvao. None found in 1977 survey (CDFG 2007).
Western Burrowing Owl *Athene cunicularia*	BCC, CSC	A yearlong resident of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Utilizes small mammal burrows for cover and nesting.	**Present.** Uncommon species in region, however suitable burrow habitat and foraging habitat is available at Study Area. 2002 occurrence just south of McGrath State Beach Campgrounds, Oxnard (CDFG 2007) and observation of wintering individuals in the Study Area vicinity (D. Pereksta, USFWS, pers. email, March 28, 2005. May occur in upland habitats and roadside berms.
Costa's Hummingbird *Calypte costae*		Occurs primarily in arid scrub and chaparral habitats and in riparian edge. Nests in a wide variety of tress, cacti, shrubs, woody forbs and vines.	**Moderate potential**. Suitable foraging habitat available at Study Area. May occur during migration.
Allen's Hummingbird *Selasphorus sasin*		Breeds in sparse and open woodlands, coastal redwoods, and sparse to dense scrub habitats. Distribution highly dependent on abundance of nectar sources.	**Moderate potential**. Known to occur in vicinity though overall woodland scrub habitat lacking at the Study Area. May occur to forage as transient.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
California Horned Lark *Eremophila alpestris actia*	CSC	Frequents grasslands and other open habitat with low, sparse vegetation. Nests on ground in the open.	**Present.** Observed in 1991 in the vicinity of Ormond Beach (Impact Sciences 1996) and foraging in the sod farm areas (D. Pereksta, USFWS, pers. email, March 28, 2005). Possible breeding habitat available in upland non-native grassland and mixed transitional habitat areas.
Purple Martin *Progne subis*	CSC	An uncommon to rare, local summer resident in a variety of wooded, low-elevation habitats throughout the state. Uses valley foothill and montane hardwood, valley foothill and montane hardwood-conifer and riparian habitats. A rare and local breeder on the south coast and in interior mountain ranges.	**Low potential.** Has been observed occasionally during spring migration in the Study Area though is a rare migrant in Ventura County (D. Pereksta, USFWS, pers. email, March 28, 2005).
Least Bell's Vireo *Vireo bellii pusillus*	FE, SE, BCC	Summer resident of southern California. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, baccharis, mesquite. Found in low riparian in vicinity of water.	**High potential.** Breeding population observed at the Santa Clara river south of the Hwy 101 Bridge, 2 miles NNW of Oxnard in 2003 (CDFG 2007). Has also been recently reported at Pt. Mugu, though the breeding status at the site has not been confirmed. Potential breeding habitat available at willow scrub habitat at the Ventura Co. Game Preserve (duck club ponds).
Bank Swallow *Riparia riparia*	ST	Migrant in riparian and other lowland habitats in western California. Nests in riparian areas with vertical cliffs and bands with fine-textured or sandy soils in which to nest.	**Low potential.** Uncommon species in region. May occur to during migration. CNDDB reports one or two pairs nested at Santa Clara river estuary in 1976 (CDFG 2007).
Coastal California Gnatcatcher *Polioptilla californica californica*	FT, CSC	Local, uncommon, obligate resident of arid coastal scrub below about 500 m (1,500 ft).	**Not present.** Uncommon species in region. Arid coastal scrub habitat not available at or in vicinity of Study Area.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
California Thrasher *Toxostoma redivivum*		Common resident of foothills and lowlands in cismontane California. Occupies moderate to dense chaparral habitats and extensive thickets in young or open valley foothill riparian habitat.	**Not present.** Chaparral habitat lacking at Study Area.
Loggerhead Shrike *Lanius ludovicianus*	BCC, CSC	Prefers open habitats with scattered shrubs, trees, pots, utility lines from which to forage for large insects. Nest well concealed above ground in densely-foliaged shrub or tree.	**Present.** Observed during WRA site visits in mixed transitional habitat with myoporum/coyote brush scrub habitat in the vicinity. Suitable nesting and foraging habitat available in all open upland habitats that contain shrubs or trees. May also forage in sod farm areas.
Yellow Warbler *Dendroica petechia brewsteri*	CSC	Nests in riparian stands of willows, cottonwoods, aspens, sycamores, and alders. Also nests in montane shrubbery in open conifer forests.	**High potential**. Suitable habitat available in willow scrub habitat at Ventura Co. Game Preserve (duck club ponds).
Yellow-breasted Chat *Icteria virens*	CSC	An uncommon summer resident and migrant in coastal California and in foothills of the Sierra Nevada. Found up to about 1450 m (4800 ft) in valley foothill riparian, and up to 2050 m (6500 ft) east of the Sierra Nevada in desert riparian habitats.	**Low potential.** Limited suitable habitat available in willow scrub habitat with the Ventura Co. Game Preserve. Uncommon species with no known records in the vicinity.
Lark Sparrow *Chondestes grammacus*		Frequents herbaceous ground cover with scattered shrubs or trees for lookout and song perches.	**Moderate potential.** May occur in upland habitat areas including non-native grasslands, mixed transitional, sod farms and dry duck club ponds.
Belding's Savannah Sparrow *Passerculus sandwichensis beldingi*	SE	Occurs primarily in southern coastal salt marsh habitats and prefers tall dense stands of pickleweed habitat. May forage in adjacent mudflats.	**Present.** Observed in coastal salt marsh habitat during WRA site visits. Last observed at McGrath state beach (CNDDDB 2007) in 1991. Observed in 2001 at Ormond beach wetlands, 1 mile SE of Port Hueneme. Mugu Lagoon salt marshes support largest population of this species of any southern California marsh.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Tri-colored Blackbird *Agelaius tricolor*	BCC, CSC	Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs.	**Present.** Suitable emergent wetland habitat available along Oxnard Industrial drain, adjacent coastal freshwater/brackish marsh habitat, and at the dense emergent wetland vegetation at a few of the Ventura Co. Game Preserve duck ponds. Commonly observed at Ventura Co. Game Preserve during winter and smaller numbers present during breeding season (D. Pereksta, USFWS, pers. email, March 28, 2005).
Reptiles and Amphibians			
southwestern pond turtle *Emys (Clemmys) marmorata pallida*	CSC	Associated with permanent or nearly permanent water in a wide variety of habitat types. Requires basking sites such as partially submerged logs, rocks, mats of floating vegetation or open mud banks.	**Low potential.** Suitable habitat may be present in freshwater drainages depending on salt water intrusion. Basking and upland habitats available. No known records in vicinity.
Coast (San Diego) horned lizard *Phrynosoma coronatum (blainvillei)*	CSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grass habitats.	**Moderate potential.** 1995 occurrence south of the Santa Clara river, SW of the intersection of Leland St., Auto Center Drive, and Ventura Rd. Habitat consisted of ruderal vegetation, mostly *Hirschfeldia incana* with some *Centaurea sp.* Open sandy to clay substrate. Suitable habitat available in mixed transitional or ruderal habitats.
Coastal western whiptail *Aspidoscelis tigris stejnegeri*		Prefers open sunny areas in rocky habitats, often in association with shrub or grassland habitats.	**Moderate potential.** Suitable habitat available in upland habitats such as non-native grasslands, ruderal habitats, and mixed transitional habitats. No known records in the vicinity.
silvery legless lizard *Anniella pulchra pulchra*	CSC	Burrowing species found in loose, friable soils or sand.	**Moderate potential.** Suitable habitat available in southern foredune habitat located along Ormond Beach. No known records in the vicinity.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
South Coast garter snake *Thamnophis sirtalis ssp.*	CSC	California endemic that is restricted to scattered localities on the Southern California plain. South Coast garter snake appears restricted to marsh and upland habitats near permanent water that have areas of riparian vegetation.	**Present.** Observed crossing road adjacent to cultivated sod fields during WRA site visits. May utilize southern coastal salt marsh and coastal freshwater/brackish marsh and adjacent upland/transitional habitats throughout Study Area.
western spadefoot toad *Spea (Scaphiopus) hammondii*	CSC	Elevations of occurrence extend from sea level to 1363 m (4500 ft) in the southern Sierra foothills. This species occurs primarily in grassland situations, but occasional populations also occur in valley-foothill hardwood woodlands. Adults remain in underground burrows most of the year.	**Low potential.** Limited suitable habitat available due to saline soils and disturbed upland habitats. No known records in the vicinity.
Arroyo toad *Bufo californicus*	FE, CSC	Washes, streams, and arroyos, and adjacent uplands (desert, shrubland). On sandy banks in riparian woodlands (willow, cottonwood, sycamore, and/or coast live oak) in California. Along rivers that have shallow gravelly pools adjacent to sandy terraces. Adults obtain shelter by burrowing into sandy soil.	**Not present.** Suitable sandy riparian habitat not present at or adjacent to Study Area.
California red-legged frog *Rana aurora draytonii*	FT, CSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	**Not present.** Suitable aquatic and upland habitat lacking due to saline conditions and disturbed nature of Study Area. No known populations in the vicinity.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Fishes			
southern steelhead-southern California ESU *Oncorhynchus mykiss irideus*	FE, CSC	The basic environmental requirements for southern steelhead probably are similar to those of more northern steelhead stocks, although it is likely that southern steelhead have greater physiological tolerances to the warmer and more variable conditions they commonly encounter in southern California streams.	**Low potential.** Upstream spawning habitat not available in the urban drains that pass through the Study Area. Numbers greatly reduced in southern California, may occur during migration if J-Street Lagoon is open to the Pacific Ocean. Occurrence very unlikely.
Arroyo chub *Gila orcutti*	CSC	Arroyo chubs are found in the Los Angeles Basin south coastal streams in slow-moving or backwater sections of warm to cool (10-24 C) streams with mud or sand substrates. Feed heavily on aquatic vegetation and associated invertebrates.	**Moderate potential.** Observed in 1993 at Calleguas Creek and Revolon Slough, tributaries of Mugu Lagoon. Found only in the freshwater sections of the streams. Potential habitat available in Oxnard Industrial Drain, J-Street Drain. Water quality levels unknown.
tidewater goby *Eucyclogovius newberryi*	FE, CSC	Found in the brackish waters of coastal lagoons, marshes, creeks, and estuaries. Unique among fishes of the Pacific coast, gobies are restricted to waters of low salinity in coastal wetlands. They feed along the bottom, preferring clean, shallow, slow-moving waters.	**Present.** 1999 occurrence at Santa Clara River estuary, 1940 at Calleguas Creek (none found in 1993), 1995Oxnard drain ("J" Street canal, SE of Port Hueneme. Suitable habitat available in J-Street canal, Oxnard Industrial Drain, and J-Street Lagoon. Connectivity limited to certain times of year.
unarmored threespine stickleback *Gasterosteus aculeatus williamsoni*	FE, SE, CFP	This fish is currently restricted to the upper Santa Clara River drainage in Los Angeles and Ventura counties, San Antonio Creek on Vandenburg Air Force Base, San Luis Obispo County, and an isolated population in San Felipe Creek in San Diego County.	**Not present.** No known records in the vicinity, species extremely reduced in numbers.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
Invertebrates			
mimic tryonia (California brackish-water snail) *Tryonia imitator*		Inhabits coastal lagoons, estuaries and salt marshes from Sonoma Co. south to San Diego Co. Able to withstand a wide range of salinities.	**Moderate potential.** 1979 occurrence at the west arm of Mugu lagoon. Suitable habitat available in coastal salt marsh, brackish marsh habitats.
vernal pool fairy shrimp *Branchinecta lynchi*	FT	Inhabits the ephemeral water of swales and vernal pools. It is most commonly found in grassed or mud bottomed swales, earth sump, or basalt flow depression pools in unplowed grasslands.	**Not present.** Not known to occur in Ventura County. Disturbed history of Study Area would also limit likelihood of occurrence.
sandy beach tiger beetle *Cicindela hirticollis gravida*		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.	**High potential.** Observed at Pt. Mugu Naval air station (1982), McGrath State Beach (1970), Port Hueneme (1979) (CDFG 2007). Suitable habitat available in southern foredune and beach habitat areas.
tiger beetle *Cincidela sensilis frosti*		Inhabits estuaries and mudflats along the coast of southern California. Generally found on dark-colored mud in the lower zone; occasionally found on dry saline flats of estuaries.	**High potential.** Observed at Mugu Lagoon, on the banks of Calleguas Creek (1982), salt marshes on the south side of the west arm of Mugu lagoon (1982) (CDFG 2007). Suitable habitat available along the banks of the J-Street Lagoon and other drainage canals and possibly in the salt panne areas.
globose dune beetle *Coelus globosus*		Inhabitant of coastal sand dune habitat from Bodega head in Sonoma County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks. Burrows beneath the sand surface and is most common beneath dune vegetation.	**Present.** Observed during 1991 invertebrate surveys by Dr. Mattoni (Impact Sciences 1996) at Ormond Beach dunes. 1982 occurrence in the sand dunes of the Barrier beach along the entire length of the Pt. Mugu Air Station. Suitable habitat available in southern foredune habitat areas.

SPECIES	STATUS* (blooming period) - plants	HABITAT	POTENTIAL FOR OCCURRENCE
wandering (saltmarsh) skipper *Panoquina errans*		Southern california coastal salt marshes. Requires moist saltgrass for larval development.	**Present.** Observed during 1991 invertebrate surveys by Dr. Mattoni (Impact Sciences 1996) at Ormond Beach dunes. 1982 occurrence at Mugu Lagoon salt marshes. Observed during WRA site visits in southern coastal salt marsh, coastal freshwater/brackish marsh, and non-native annual grassland (coyote brush/western ragweeed association) habitats. Preferred habitat available in saltmarsh vegetation throughout Study Area.
monarch butterfly *Danaus plexippus*		Winter roost sites located in wind-protected tree groves with nectar and water sources nearby.	**Moderate potential.** 1985 occurrence at Blue Gum Grove site just east of Pleasant Valley Rd, Oxnard. 1991 mouth of La Jolla Canyon, Pt. Mugu State Park. Fire occurred in 1998. Big sycamore canyon, Pt. Mugu state park-population fluctuating (CDFG 2007). Suitable habitat may be available in willow scrub and coyote brush (Eucalyptus association) habitat scattered throughout Study Area.

*** Key to status codes:**
Status codes used above are:
FD - Federal Delisted
FE - Federal Endangered
FT - Federal Threatened
FC - Federal Candidate
FPD - Federal Proposed for Delisting
BCC USFWS Birds of Conservation Concern
SE - State Endangered
SR - State Rare
ST - State Threatened
CSC - CDFG Species of Special Concern, CSC (Draft) - 4 April 2001 Draft
CFP - California Fully Protected Species
None - No status given but rookery sites are monitored by CDFG
List 1B - CNPS 1B List, Endangered, Threatened, or Rare in California
List 2 - CNPS List 2 Plants that are rare, threatened, or endangered in California, but more common elsewhere
List 3 - CNPS List 3 Plants about which more information is needed - a review list
List 4 - Plants of limited distribution - a watch list

FSC - Federal Species of Concern- Some species on this list were USFWS Species of Concern in 2004 when this assessment was performed. As of 2006 this list is no longer maintained, so the designations have been removed from this document, but the species were still evaluated for potential occurrence.

APPENDIX A

LIST OF POTENTIAL SPECIAL STATUS PLANT AND ANIMAL SPECIES

Appendix B - Wildlife Species Observed During the July 2004 WRA Field Visits

Species	Status (Federal/State)	Seasonal Abundance at Study Area*			
		W	SP	SU	F
Mammals					
Botta's pocket gopher	common	A	A	A	A
California ground squirrel	common	A	A	A	A
California vole	common	A	A	A	A
Audubon's cottontail	common	A	A	A	A
raccoon	common	A	A	A	A
Birds					
Pied-billed Grebe	common	A	C	C	A
Brown Pelican	FE, SE, CFP	C	C	A	C
Double-crested Cormorant	CSC	A	A	C	A
Great Egret	Rookeries protected	C	C	U	U
Great Blue Heron	Rookeries protected	C	C	C	C
Snowy Egret	Rookeries protected	C	C	C	C
Black-crowned Night Heron	Rookeries protected	C	C	C	C
Green Heron	Rookeries protected	U	U	U	U
White-faced Ibis	CSC	U	U	U	U
Mallard	common	A	C	C	A
Gadwall	common	A	C	U	C
Cinnamon Teal	common	A	C	A	C
Ruddy Duck	common	A	C	C	A
Turkey Vulture	common	C	U	C	U
Northern Harrier	CSC	C	U	U	C
White-tailed Kite	CFP	U	C	C	U
Red-tailed Hawk	common	C	C	C	C
American Kestrel	common	C	C	C	C

Species	Status (Federal/State)	Seasonal Abundance at Study Area*			
		W	SP	SU	F
American Coot	common	A	A	A	A
Snowy Plover	FT, BCC, CSC	C	C	C	C
Semipalmated Plover	migratory	C	U	U	C
Killdeer	common	A	A	A	A
American Avocet	common	C	C	C	C
Black-necked Stilt	common	C	C	C	C
Willet	migratory	C	U	U	C
Long-billed Curlew	BCC, CSC	C	U	U	C
Least Sandpiper	migratory	A	U	C	A
Western Sandpiper	migratory	C	U	C	C
Marbled Godwit	migratory	C	U	U	C
Dowitcher sp.	migratory	C	U	U	C
Red-necked Phalarope	migratory	U	U	U	U
Wilson's Phalarope	migratory	U	U	U	U
Western Gull	common	A	A	A	A
Heermann's Gull	migratory/common	C	C	A	A
Caspian Tern	migratory	U	C	C	U
Forster's Tern	common	A	A	A	A
Royal Tern	migratory	C	U	U	C
California Least Tern	FE, SE, CFP	C	C	C	C
Mourning Dove	common	A	A	A	A
Anna's Hummingbird	common	A	A	A	A
Black Phoebe	common	A	A	A	A
Cliff Swallow	migratory	U	A	A	U
Barn Swallow	migratory	U	A	A	U
American Crow	common	C	C	C	C

Species	Status (Federal/State)	Seasonal Abundance at Study Area*			
		W	SP	SU	F
Loggerhead Shrike	BCC, CSC	C	C	C	C
Bushtit	common	C	C	C	C
Northern Mockingbird	common	A	A	A	A
Common Yellowthroat	common	C	C	C	C
California Towhee	common	A	A	A	A
Belding's Savannah Sparrow	SE, common in vicinity	C	C	C	C
Song Sparrow	common	C	C	C	C
Red-winged Blackbird	common	A	A	A	A
Great-tailed Grackle	transient	U	U	U	U
Western Meadowlark	common	C	C	C	C
House Finch	common	C	C	C	C
Amphibians/Reptiles					
Pacific chorus frog	common	A	A	C	A
south coast garter snake	CSC	U	U	U	U
western fence lizard	common	A	A	A	A
Fish					
threespine stickleback	common	C	C	C	C
Invertebrates					
western tiger swallowtail	common	C	C	C	C
painted lady	common	C	C	C	C
wandering (saltmarsh) skipper	rare sp., seasonal	U	U	C	U
mourning cloak	seasonal	U	C	C	U
western pygmy blue	common	C	C	C	C
gray hairstreak	seasonal	U	C	C	C
orange sulphur	seasonal	U	C	C	C

PLANTS OF ORMOND BEACH			
Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Abronia sp.	**sand verbena**	**X**	
Abronia maritima	**red sand verbena (CNPS List 4)**		**ERM (2002) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)**
Abronia umbellata ssp. umbellata	**pink sand verbena**		**Impact Sciences (1996)**
Acroptilon repens	Russian knapweed (Cal-IPC Moderate)	X	Impact Sciences (2000)
Agrostis stolonifera	creeping bentgrass (Cal-IPC Limited)		Impact Sciences (1996)
Amaranthus blitoides	**mat amaranth**		**Impact Sciences (1996)**
Amblyopappus pusillus	**pineapple weed**		**ERM (2002)**
Ambrosia acanthicarpa	**annual burweed**		**Jones and Stokes (1998)**
Ambrosia chamissonis	**beach bur**	**X**	**ERM (2002) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)**
Ambrosia psilostachya	**western ragweed**	**X**	**ERM (2002) Impact Sciences (2000) Impact Sciences (1996) Jones and Stokes (1994)**
Ammophila arenaria	European beachgrass (Cal-IPC High)	X	
Amsinckia sp.	**fiddleneck**		**ERM (2002)**
Amsinckia menziesii var. intermedia	**common fiddleneck**		**Jones and Stokes (1994)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Anagallis arvensis	scarlet pimpernel	X	ERM (2002) Jones and Stokes (1998) Jones and Stokes (1994)
Anemopsis californica	**yerba mansa**	**X**	**ERM (2002)** **Jones and Stokes (1994)**
Apium graveolens	celery		ERM (2002) Jones and Stokes (1998) Jones and Stokes (1994)
Artemisia biennis	biennial sagewort		Jones and Stokes (1994)
Artemisia californica	**California sagebrush**		**ERM (2002)** **Jones and Stokes (1994)**
Artemisia douglasiana	**mugwort**	**X**	**Jones and Stokes (1998)** **Impact Sciences (1996)**
Arundo donax	giant reed (Cal-IPC High)	X	ERM (2002) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Aster sp.	**aster**	**X**	
Atriplex sp.	saltbush	X	
Atriplex argentea	**silverscale saltbush**		**Impact Sciences (2000)**
Atriplex californica	**California saltbush**		**ERM (2002)**
Atriplex lentiformis	**big saltbush**		**Impact Sciences (2000)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Atriplex lentiformis ssp. lentiformis	**big saltbush, Brewer's saltbush**	**X**	**ERM (2002)** **Jones and Stokes (1998)** **Jones and Stokes (1994)**
Atriplex leucophylla	**beach saltbush**	**X**	**ERM (2002)** **Jones and Stokes (1998)** **Jones and Stokes (1994)**
Atriplex patula	**spear oracle**		**Impact Sciences (1996)**
Atriplex rosea	tumbling oracle	X	ERM (2002) Jones and Stokes (1998) Jones and Stokes (1994)
Atriplex semibaccata	Australian saltbush (Cal-IPC Moderate)	X	ERM (2002) Impact Sciences (1996) Jones and Stokes (1994)
Atriplex triangularis	**spearscale**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1994)**
Avena sp.	wild oats		Impact Sciences (2000)
Avena fatua	wild oats (Cal-IPC Moderate)		ERM (2002) Jones and Stokes (1994)
Avena barbata	slender wild oats (Cal-IPC Moderate)	X	Jones and Stokes (1998)
Baccharis douglasii	**salt marsh baccharis**		**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1994)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Baccharis pilularis	**coyote brush**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Baccharis salicifolia	**mulefat**	**X**	**ERM (2002)** **Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Bassia hyssopifolia	five-horn bassia (Cal-IPC Limited)		ERM (2002) Impact Sciences (2000) Impact Sciences (1996) Jones and Stokes (1994)
Batis maritima	**saltwort**	**X**	**Impact Sciences (1996)**
Beta vulgaris	common beet		Impact Sciences (1996)
Bolboschoenus maritimus (=Scirpus maritimus), or possible hybrid with Schoenoplectus robustus	**bulrush**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1994)**
Brassica nigra	black mustard (Cal-IPC Moderate)	X	ERM (2002) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Brassica rapa	field mustard (Cal-IPC Limited)		Jones and Stokes (1998)
Bromus sp.	brome grass		Impact Sciences (2000) Jones and Stokes (1994)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Bromus catharticus	rescue grass		ERM (2002) Impact Sciences (2000)
Bromus diandrus	ripgut brome (Cal-IPC Moderate)	X	ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Bromus hordeaceus	soft chess (Cal-IPC Limited)	X	ERM (2002) Impact Sciences (2000) Impact Sciences (1996) Jones and Stokes (1994)
Bromus madritensis ssp. rubens	red brome (Cal-IPC High)	X	ERM (2002) Impact Sciences (2000) Impact Sciences (1996) Jones and Stokes (1994)
Bromus tectorum	cheatgrass (Cal-IPC High)	X	Impact Sciences (1996)
Cakile maritima	sea rocket (Cal-IPC Limited)	X	Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Callistemon viminalis	weeping bottlebrush		Jones and Stokes (1994)
Calystegia soldanella	**beach morning glory**	**X**	**ERM (2002)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Camissonia cheiranthifolia	**beach evening primrose**	**X**	**ERM (2002)** **Jones and Stokes (1998)** **Impact Sciences (1996)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Camissonia cheiranthifolia ssp. suffruticosa	**shrubby beach-primrose**		**Jones and Stokes (1994)**
Camissonia strigulosa	**contorted primrose**		**ERM (2002)**
Capsella bursa-pastoris	shepherd's purse	X	Jones and Stokes (1998)
Carex sp.	sedge		Impact Sciences (1996)
Carpobrotus chilensis	sea fig, iceplant (Cal-IPC Moderate)	X	Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Carpobrotus edulis	iceplant, hottentot fig (Cal-IPC High)	X	ERM (2002) Impact Sciences (1996) Jones and Stokes (1994)
Centaurea sp.	star thistle		Jones and Stokes (1998)
Centaurea melitensis	tocalote (Cal-IPC Moderate)		ERM (2002) Impact Sciences (1996) Jones and Stokes (1994)
Centaurea stoebe ssp. micranthos (=Centaurea maculosa)	spotted knapweed (Cal-IPC High)		ERM (2002) Jones and Stokes (1994)
Chenopodium album	lambs-quarters	X	Jones and Stokes (1998) Impact Sciences (1996)
Chenopodium californicum	**California goosefoot**		**ERM (2002)**
Chenopodium murale	nettle-leaf goosefoot		Impact Sciences (1996) Jones and Stokes (1994)
Chenopodium rubrum	**red goosefoot**	**X**	**Jones and Stokes (1998)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Cirsium sp.	thistle	X	Jones and Stokes (1998) Impact Sciences (1996)
Cirsium vulgare	bull thistle (Cal-IPC Moderate)		ERM (2002)
Conium maculatum	poison hemlock (Cal-IPC Moderate)		ERM (2002) Jones and Stokes (1994)
Convolvulus arvensis	field bindweed	X	Impact Sciences (2000) Impact Sciences (1996) Jones and Stokes (1994)
Conyza sp.	horseweed	X	Jones and Stokes (1998)
Conyza bonariensis	horseweed		ERM (2002)
Conyza canadensis	**Canadian horseweed**		**ERM (2002)** **Impact Sciences (2000)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Cordylanthus maritimus ssp. maritimus	**salt marsh bird's-beak (FE, SE, CNPS List 1B)**	**X**	**ERM (2002)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Cordyline sp.	cordyline		ERM (2002)
Coreopsis gigantea	**giant coreopsis**		**ERM (2002)** **Jones and Stokes (1994)**
Corethrogyne filaginifolia	**California aster**		**Impact Sciences (1996)**
Cortaderia selloana	pampas grass (Cal-IPC High)	X	ERM (2002) Jones and Stokes (1994)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Cotula coronopifolia	brass buttons (Cal-IPC Limited)	X	ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Cressa truxillensis	**alkali weed**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Croton californicus	**California croton**		**Impact Sciences (1996)** **Jones and Stokes (1994)**
Croton setigerus (=Eremocarpus setigerus)	**turkey mullein**		**Impact Sciences (1996)**
Cryptantha sp.	**cryptantha**		**Impact Sciences (1996)**
Cuscuta salina	**salt marsh dodder**	**X**	**ERM (2002)** **Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Cynodon dactylon	bermuda grass (Cal-IPC Moderate)	X	Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Cyperus eragrostis	**tall flatsedge**		**ERM (2002)** **Jones and Stokes (1994)**
Cytisus scoparius	scotch broom (Cal-IPC High)		Jones and Stokes (1994)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Distichlis spicata	**salt grass**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Echinochloa crus-galli	barnyard grass		Jones and Stokes (1994)
Eleocharis macrostachya	**common spikerush**	**X**	
Epilobium ciliatum ssp. ciliatum	**Northern willow-herb**		**Jones and Stokes (1994)**
Eragrostis curvula var. curvula	weeping lovegrass		Impact Sciences (1996)
Eriogonum sp.	**buckwheat**	**X**	
Eriophyllum confertiflorum var. confertiflorum	**golden yarrow**		Jones and Stokes (1998)
Erodium cicutarium	redstem filaree (Cal-IPC Limited)		ERM (2002) Impact Sciences (1996)
Erodium moschatum	whitestem filaree		ERM (2002)
Eucalyptus sp.	gum tree	X	ERM (2002)
Eucalyptus globulus	Tasmanian blue gum (Cal-IPC Moderate)	X	ERM (2002) Jones and Stokes (1994)
Euthamia occidentalis	**western goldenrod**		**ERM (2002)** **Jones and Stokes (1994)**
Festuca sp.	fescue	X	Impact Sciences (1996)
Festuca arundinacea	tall fescue (Cal-IPC Moderate)	X	

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Festuca pratensis	meadow fescue		Jones and Stokes (1994)
Foeniculum vulgare	fennel (Cal-IPC High)		ERM (2002) Jones and Stokes (1994)
Frankenia salina	**alkali-heath**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Galium aparine	**goose grass**	**X**	**ERM (2002)** **Jones and Stokes (1998)** **Jones and Stokes (1994)**
Galium parisiense	wall bedstraw		ERM (2002)
Glebionus coronaria (=Chrysanthemum coronarium)	crown daisy (Cal-IPC Moderate)		Impact Sciences (1996)
Gnaphalium sp.	everlasting	X	
Gnaphalium californicum	**green everlasting**		**ERM (2002)**
Gnaphalium luteo-album	everlasting cudweed	X	ERM (2002) Impact Sciences (1996)
Gnaphalium ramosissimum	**pink cudweed**		**Impact Sciences (1996)**
Gnaphalium stramineum	**cotton-batting cudweed**		**ERM (2002)** **Jones and Stokes (1994)**
Hazardia squarrosa	**sawtooth goldenbush**		**ERM (2002)**
Hedypnois cretica	Crete weed		ERM (2002)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Heliotropium curassavicum	**heliotrope**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Heterotheca grandiflora	**telegraph weed**	**X**	**ERM (2002)** **Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Hirschfeldia incana	summer mustard (Cal-IPC Moderate)	X	ERM (2002) Impact Sciences (1996) Jones and Stokes (1994)
Hordeum brachyantherum	**meadow barley**		**ERM (2002)**
Hordeum marinum ssp. gussoneanum	Mediterranean barley (Cal-IPC Moderate)	X	ERM (2002)
Hordeum murinum ssp. leporinum	foxtail barley (Cal-IPC Moderate)	X	ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Hordeum vulgare	common barley	X	Impact Sciences (1996)
Hypochaeris radicata	rough cat's ear (Cal-IPC Moderate)	X	Jones and Stokes (1998)
Isocoma menziesii	**white-flowered goldenbush**	**X**	**ERM (2002)**
Isocoma menziesii var. vernonioides	**coastal goldenbush**		**Jones and Stokes (1994)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Jaumea carnosa	**marsh jaumea**	**X**	**ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)**
Juncus acutus ssp. leopoldii	**southwestern spiny rush (CNPS List 4)**	**X**	**ERM (2002) Impact Sciences (1996) Jones and Stokes (1994)**
Juncus balticus	**Baltic rush**	**X**	**ERM (2002) Jones and Stokes (1994)**
Juncus bufonius	**toad rush**	**X**	**ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Jones and Stokes (1994)**
Juncus lesueurii	**salt rush**	**X**	**ERM (2002) Impact Sciences (1996)**
Juncus mexicanus	**Mexican rush**		**Jones and Stokes (1994)**
Juncus textilis	**basket rush**		**ERM (2002) Jones and Stokes (1994)**
Kochia scoparia	summer-cypress (Cal-IPC Moderate)		Jones and Stokes (1994)
Lactuca serriola	prickly lettuce		Impact Sciences (2000)
Lamarckia aurea	goldentop		Jones and Stokes (1994)
Lasthenia sp.	**goldfields**		**Impact Sciences (2000)**
Lasthenia glabrata ssp. coulteri	**Coulter's goldfields (CNPS List 1b)**		**Jones and Stokes (1998)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Lavatera sp.	tree mallow		Impact Sciences (1996)
Lavatera arborea	tree mallow		Jones and Stokes (1998)
Lepidium sp.	**pepper grass**		**ERM (2002)**
Lepidium draba ssp. draba (=Cardaria draba)	hoary cress (Cal-IPC Moderate)		Jones and Stokes (1998)
Leptochloa uninervia	**sprangletop**		**Impact Sciences (2000)**
Leymus triticoides	**creeping wild-rye**		**ERM (2002)** **Jones and Stokes (1994)**
Limonium californicum	**California sea lavender**	**X**	**ERM (2002)** **Jones and Stokes (1994)**
Limosella aquatica	water mudwort		Jones and Stokes (1994)
Lindernia dubia var. anagallidea	false pimpernel		Jones and Stokes (1994)
Lobularia maritima	sweet alyssum (Cal-IPC Limited)		ERM (2002)
Lolium multiflorum	Italian ryegrass (Cal-IPC Moderate)	X	Impact Sciences (2000)
Lolium perenne	perennial ryegrass		Impact Sciences (2000)
Lotus corniculatus	bird's-foot trefoil	X	
Lotus salsuginosus	**coastal lotus**		**Impact Sciences (1996)**
Lotus scoparius	**deerweed**	**X**	**Impact Sciences (1996)**
Lupinus sp.	lupine	X	Jones and Stokes (1998)
Lythrum sp.	loosestrife		Impact Sciences (2000)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Malva parviflora	cheeseweed		ERM (2002) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Malvella leprosa	**alkali mallow**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1994)**
Marrubium vulgare	horehound (Cal-IPC Limited)		ERM (2002) Jones and Stokes (1994)
Matricaria matricarioides (=Chamomilla suaveolens)	pineapple weed	X	ERM (2002) Jones and Stokes (1998) Jones and Stokes (1994)
Medicago polymorpha	bur clover (Cal-IPC Limited)	X	ERM (2002) Impact Sciences (2000) Impact Sciences (1996)
Medicago sativa	alfalfa		Impact Sciences (1996)
Melilotus alba	white sweetclover	X	ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Melilotus indica	sourclover	X	ERM (2002) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Melilotus officinalis	yellow sweetclover		Impact Sciences (1996)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Mesembryanthemum crystallinum	crystalline iceplant (Cal-IPC Moderate)	X	Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Mesembryanthemum nodiflorum	slender-leaved iceplant	X	ERM (2002), Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Monanthochloe littoralis	**shoregrass**		**ERM (2002)** **Jones and Stokes (1994)**
Myoporum laetum	myoporum, ngaio tree (Cal-IPC Moderate)	X	Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Myrtaceae	landscape shrubs		ERM (2002)
Nasturtium officinale (=Rorippa nasturtium-aquaticum)	**watercress**		**ERM (2002)**
Nicotiana glauca	tree tobacco (Cal-IPC Moderate)	X	ERM (2002) Jones and Stokes (1998) Jones and Stokes (1994)
Oenothera elata ssp. hookeri	**Hooker's evening primrose**		**ERM (2002)**
Osteospermum ecklonis	African daisy		ERM (2002) Jones and Stokes (1994)
Parapholis incurva	sickle grass	X	ERM (2002) Impact Sciences (2000) Impact Sciences (1996)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Pennisetum clandestinum	kikuyu grass (Cal-IPC Limited)	X	ERM (2002) Impact Sciences (2000) Impact Sciences (1996) Jones and Stokes (1994)
Persicaria punctata (=Polygonum punctatum)	**water smartweed**		**Jones and Stokes (1994)**
Phalaris minor	little-seed canarygrass		Impact Sciences (2000)
Picris echioides	bristly ox-tongue (Cal-IPC Limited)	X	ERM (2002) Impact Sciences (2000)
Piptatherum miliaceum	smilo grass (Cal-IPC Limited)		Jones and Stokes (1998) Jones and Stokes (1994)
Plantago lanceolata	English plantain (Cal-IPC Limited)	X	ERM (2002)
Plantago major	common plantain	X	Jones and Stokes (1994)
Poa annua	annual bluegrass	X	Jones and Stokes (1998)
Poa douglasii	sand dune blue grass		Impact Sciences (1996)
Polygonum sp.	knotweed	X	Jones and Stokes (1998)
Polygonum aviculare ssp. depressum (=Polygonum arenastrum)	common knotweed	X	
Polypogon monspeliensis	rabbitfoot grass (Cal-IPC Limited)	X	ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Populus fremontii ssp. fremontii	**Fremont cottonwood**		**ERM (2002)**
Portulaca oleracea	common purslane		Impact Sciences (1996)
Pseudognaphalium beneolens (=Gnaphalium canescens ssp. beneolens)	**everlasting cudweed**		**ERM (2002)**
Psilocarphus tenellus	**wooly marbles**		**ERM (2002)**
Quercus agrifolia	**coast live oak**	**X**	
Raphanus sativus	wild radish (Cal-IPC Limited)	X	ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)
Ricinus communis	castor bean (Cal-IPC Limited)	X	Jones and Stokes (1998)
Rumex acetosella	sheep sorrel (Cal-IPC Moderate)	X	ERM (2002)
Rumex conglomeratus	clustered dock		ERM (2002)
Rumex crispus	curly dock (Cal-IPC Limited)	X	ERM (2002) Impact Sciences (2000) Impact Sciences (1996) Jones and Stokes (1994)
Ruppia maritima	**wigeon grass**		**Jones and Stokes (1994)**
Salicornia subterminalis (=Arthrocnemum subterminale)	**annual pickleweed**	**X**	**ERM (2002)** **Jones and Stokes (1998)** **Jones and Stokes (1994)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Salicornia virginica (=Salicornia depressa)	**perennial pickleweed**	**X**	**ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)**
Salix sp.	**willow**	**X**	
Salix exigua	**sandbar willow**	**X**	**ERM (2002) Jones and Stokes (1998) Impact Sciences (1996) Jones and Stokes (1994)**
Salix lasiandra ssp. lasiandra (=S. lucida ssp. lasiandra)	**yellow willow**		**ERM (2002)**
Salix lasiolepis	**arroyo willow**	**X**	**ERM (2002) Jones and Stokes (1998) Impact Sciences (1996)**
Salsola tragus	Russian thistle (Cal-IPC Limited)		ERM (2002) Impact Sciences (1996) Jones and Stokes (1994)
Schinus terebinthifolius	Brazilian pepper tree (Cal-IPC Limited)		Jones and Stokes (1998)
Schismus sp.	Mediterranean grass (Cal-IPC Limited)		Impact Sciences (1996)
Schoenoplectus acutus var. occidentalis (=Scirpus acutus var. occidentalis)	**common tule**		**Impact Sciences (2000)**
Schoenoplectus americanus (=Scirpus americanus)	**bulrush**	**X**	**Impact Sciences (1996)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Schoenoplectus californicus (=Scirpus californicus)	**California tule**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Jones and Stokes (1994)**
Schoenoplectus robustus (=Scirpus robustus)	**big bulrush**	**X**	**ERM (2002)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Senecio vulgaris	common groundsel	X	ERM (2002) Jones and Stokes (1998) Jones and Stokes (1994)
Silybum marianum	milk thistle (Cal-IPC Limited)		ERM (2002) Jones and Stokes (1994)
Sisymbrium altissimum	tumble mustard		Jones and Stokes (1994)
Sisymbrium irio	London rocket (Cal-IPC Moderate)		Jones and Stokes (1994)
Solanum sp.	nightshade		Jones and Stokes (1998)
Solanum douglasii	**Douglas' nightshade**		**ERM (2002)**
Solanum nigrum	black nightshade		Jones and Stokes (1994)
Sonchus asper ssp. asper	prickly sow thistle	X	ERM (2002) Impact Sciences (2000) Jones and Stokes (1998) Jones and Stokes (1994)
Sonchus oleraceus	common sow thistle	X	ERM (2002) Impact Sciences (2000) Impact Sciences (1996) Jones and Stokes (1994)

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Spergularia macrotheca	**sticky sand spurrey**	**X**	**ERM (2002)** **Jones and Stokes (1998)**
Spergularia salina ***(=S. marina)***	**salt marsh sand spurrey**	**X**	**ERM (2002)** **Impact Sciences (2000)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Suaeda sp. ***(taxifolia and/or moquinii (=nigra))***	**woolly seablite (CNPS List 4)** **and/or bush seepweed**	**X**	**Jones and Stokes (1998)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Suaeda calceoliformis	**horned seablite**	**X**	**Impact Sciences (2000)**
Symphyotrichum divaricatum ***(=Aster subulatus var. ligulatus)***	**salt marsh aster**		**ERM (2002)** **Impact Sciences (2000)** **Impact Sciences (1996)** **Jones and Stokes (1994)**
Tetragonia tetragonioides	New Zealand spinach		ERM (2002) Impact Sciences (1996) Jones and Stokes (1994)
Triglochin concinna	**arrow-grass**		**Jones and Stokes (1994)**
Triglochin maritima	**seaside arrow-grass**		**ERM (2002)** **Impact Sciences (1996)**
Typha domingensis	**southern cattail**		**ERM (2002)** **Jones and Stokes (1994)**
Typha latifolia	**broadleaf cattail**	**X**	**Impact Sciences (2000)** **Impact Sciences (1996)**
Urtica dioica ssp. holosericea	**stinging nettle**		**ERM (2002)** **Jones and Stokes (1994)**

Scientific Name	Common Name (special status listing)	Observed by WRA in July 2004	Observed by others
Urtica urens	dwarf nettle		Jones and Stokes (1994)
Verbena lasiostachys	**western vervain**		**ERM (2002)**
Verbena litoralis	shore vervain		Jones and Stokes (1998)
Veronica anagallis-aquatica	water speedwell	X	Jones and Stokes (1998)
Vulpia myuros	rattail fescue (Cal-IPC Moderate)		ERM (2002)
Vulpia octoflora	**six-weeks fescue**		**ERM (2002)**
Washingtonia robusta	Washington fan palm (Cal-IPC Moderate)		Jones and Stokes (1994)
Xanthium strumarium	**rough cocklebur**	**X**	**Impact Sciences (2000)** **Jones and Stokes (1994)**
Yucca baccata	banana yucca		Jones and Stokes (1994)

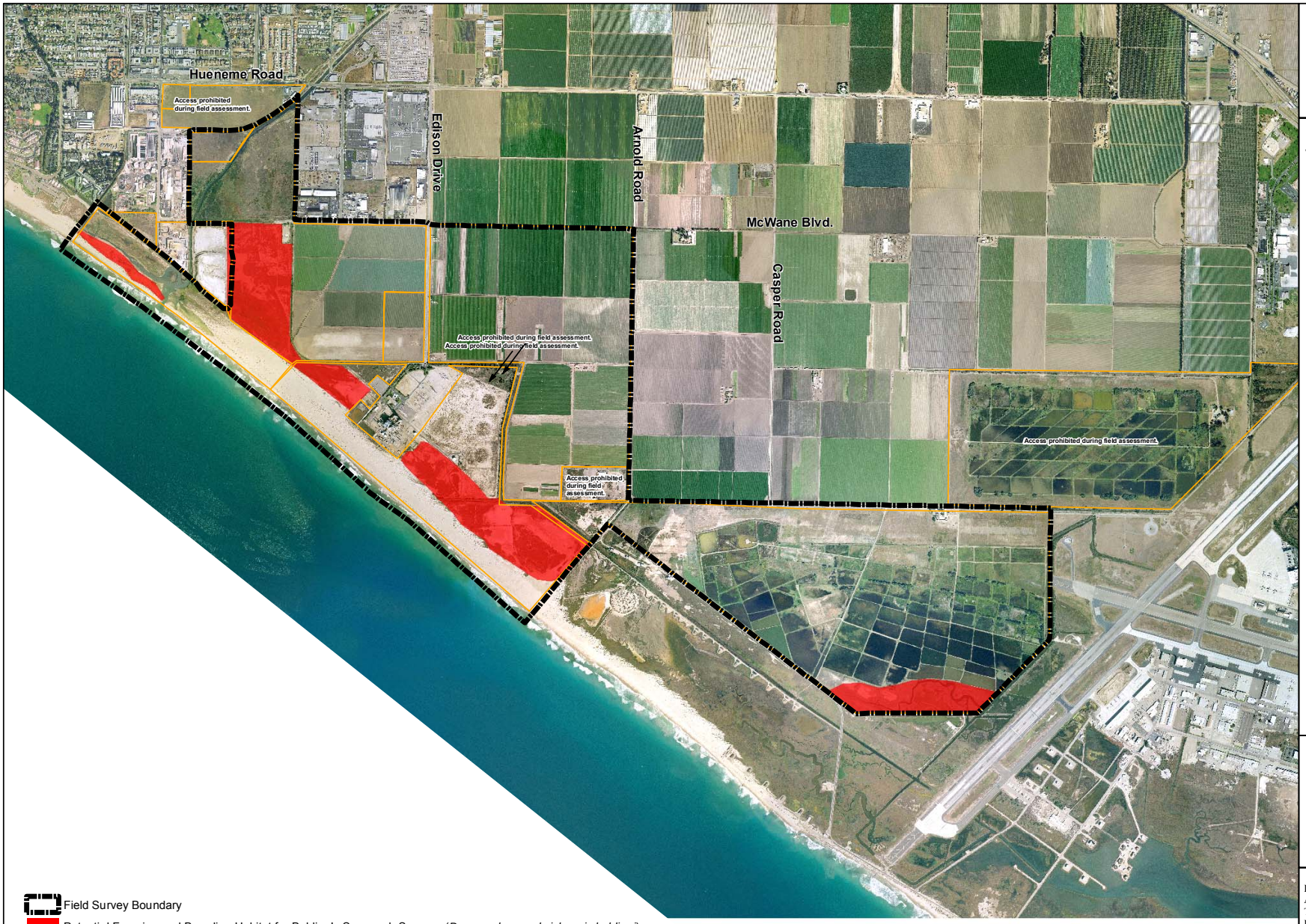
***Key to species codes:**
Plant species native to Ventura County are in bold
FE - Federal Endangered
FT - Federal Threatened
BCC - USFWS Birds of Conservation Concern
SE - State Endangered
CFP - CDFG Fully Protected Animal
CSC - CDFG Species of Special Concern
CNPS List 1B - California Native Plant Society: Endangered, Threatened, or Rare in California
CNPS List 4 - California Native Plant Society: Plants of Limited Distribution - a Watch List
Cal-IPC High - California Invasive Plant Inventory rating: Severe ecological impacts; moderate to high rates of dispersal and establishment; often widely distributed ecologically.
Cal-IPC Moderate - California Invasive Plant Inventory rating: Substantial and apparent but generally not severe ecological impacts; moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance; may range from limited to widespread.
Cal-IPC Limited - California Invasive Plant Inventory rating: Invasive but ecological impacts are minor on a statewide level or there was not enough information to justify a higher score; low to moderate rates of invasiveness; distribution is generally limited, but may be locally problematic.

APPENDIX B

LIST OF OBSERVED WILDLIFE AND PLANT SPECIES

APPENDIX C

POTENTIAL WILDLIFE FORAGING AND BREEDING HABITAT



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Biological Assessment Appendix C-7.

Potential Foraging and Breeding Habitat for Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)

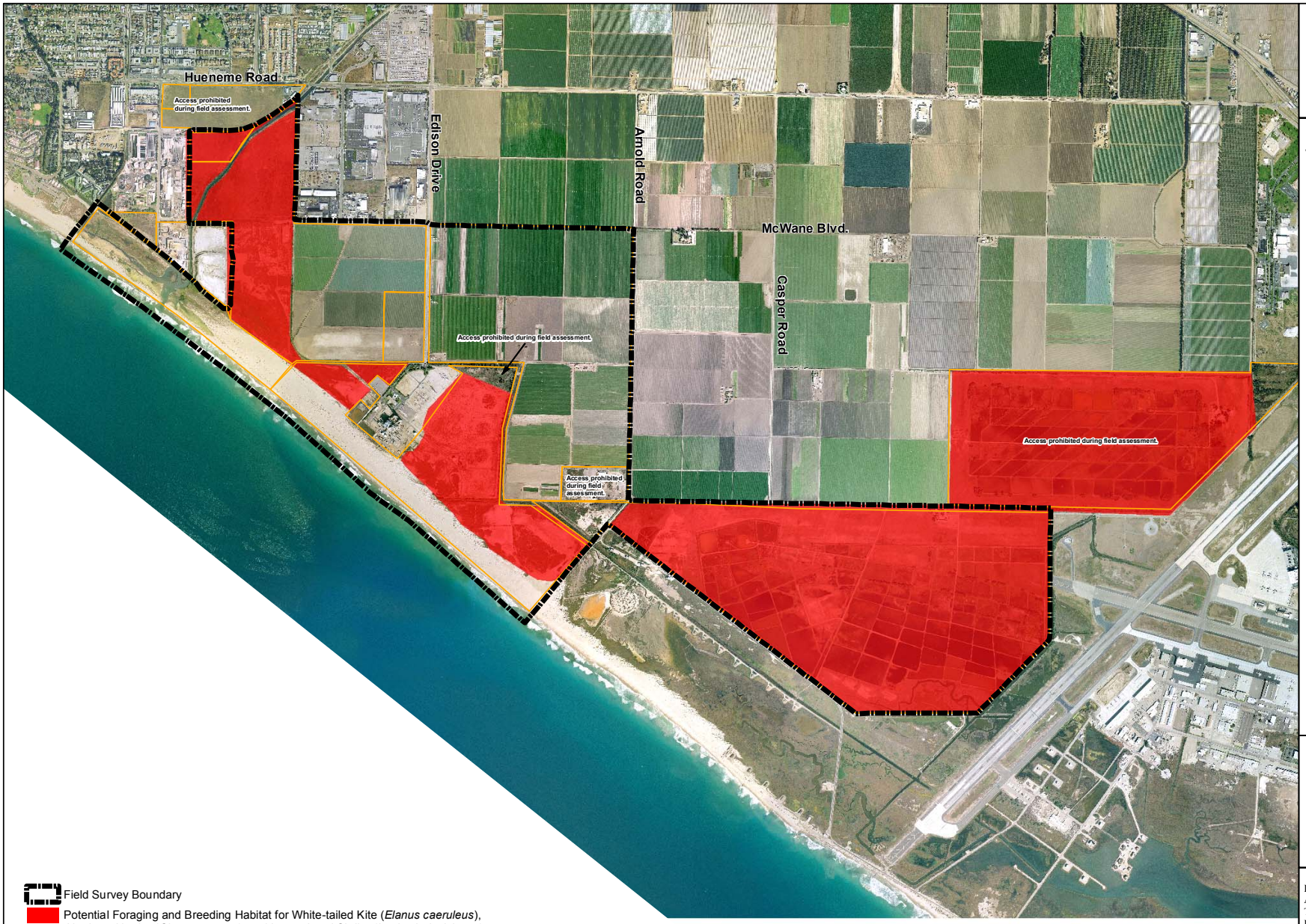
1:21,600

0 750 1,500 3,000
Feet

0 250 500 1,000
Meters

N

Date: July 2006
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: I:\Acad 2000\13006\GIS\ArcMap\July07 Revisions\Appendix C*.mxd



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Biological Assessment Appendix C-6.

Potential Foraging and Breeding Habitat for White-tailed Kite (*Elanus caeruleus*), Northern Harrier (*Circus cyaneus*), and Loggerhead Shrike (*Lanius ludovicianus*)

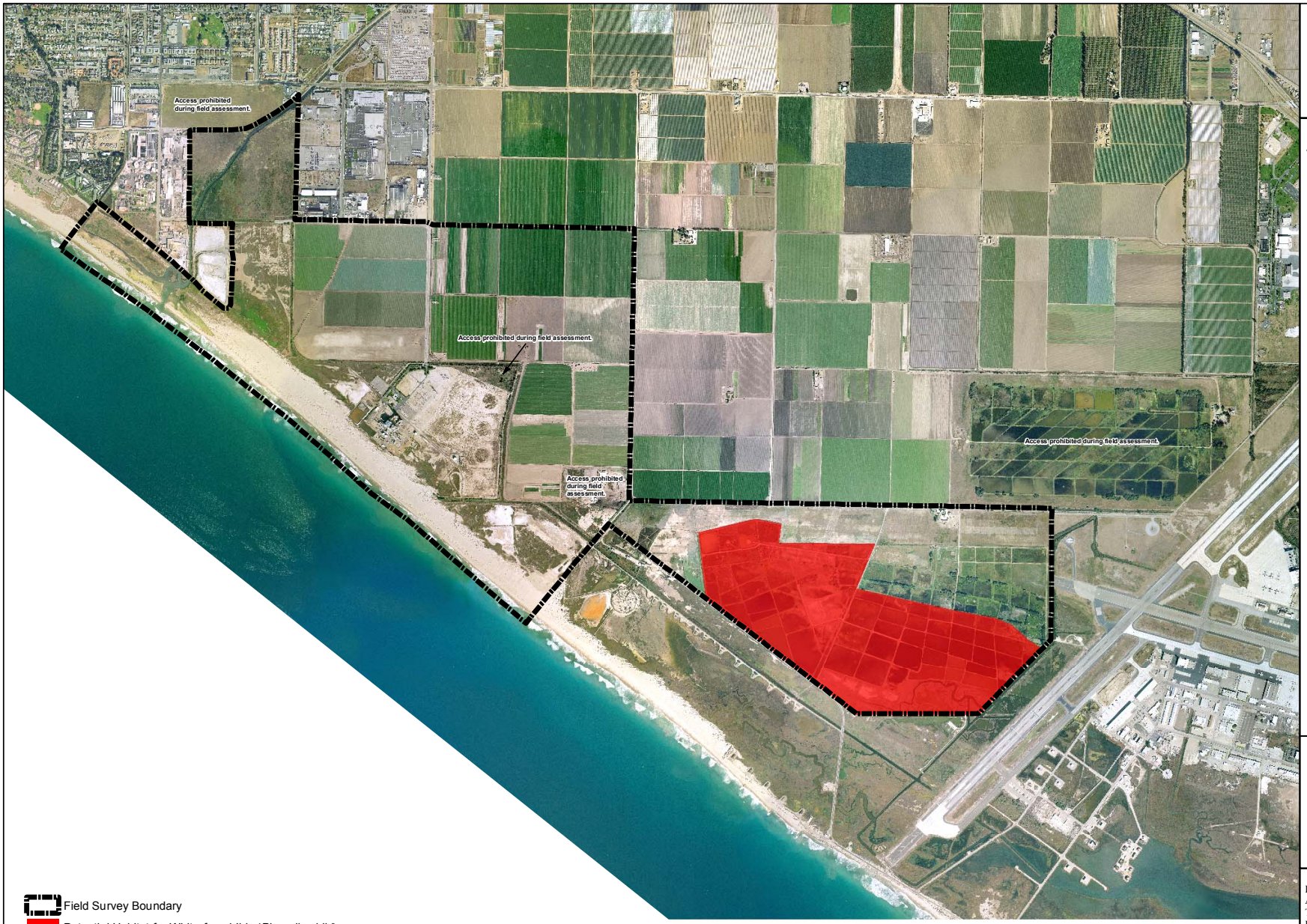
1:21,600

0 750 1,500 3,000
Feet

0 250 500 1,000
Meters

N

Date: July 2006
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: l:\Acad 2000\13006\GIS\ArcMap\July07 Revisions\Appendix C*.mxd



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Biological Conditions
Appendix C-5.

Potential Habitat for White-faced Ibis (*Plegadis chihi*)

1:21,600

0 750 1,500 3,000
Feet

0 250 500 1,000
Meters

N

Date: July 2006
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: l:\Acad 2000\13006\GIS\ArcMap\July07 Revisions\Appendix C*.mxd

wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Biological Assessment Appendix C-4.

Potential Foraging and Breeding Habitat for Western Snowy Plover (*Charadrius alexandrinus nivosus*)

1:21,600

0 750 1,500 3,000
Feet

0 250 500 1,000
Meters

N

Date: July 2006
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: I:\Acad 2000\13006\GIS\ArcMap\July07 Revisions\Appendix C*.mxd

wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Biological Assessment Appendix C-3.

Potential Foraging and Breeding Habitat for California Least Tern (*Sterna antillarum browni*)

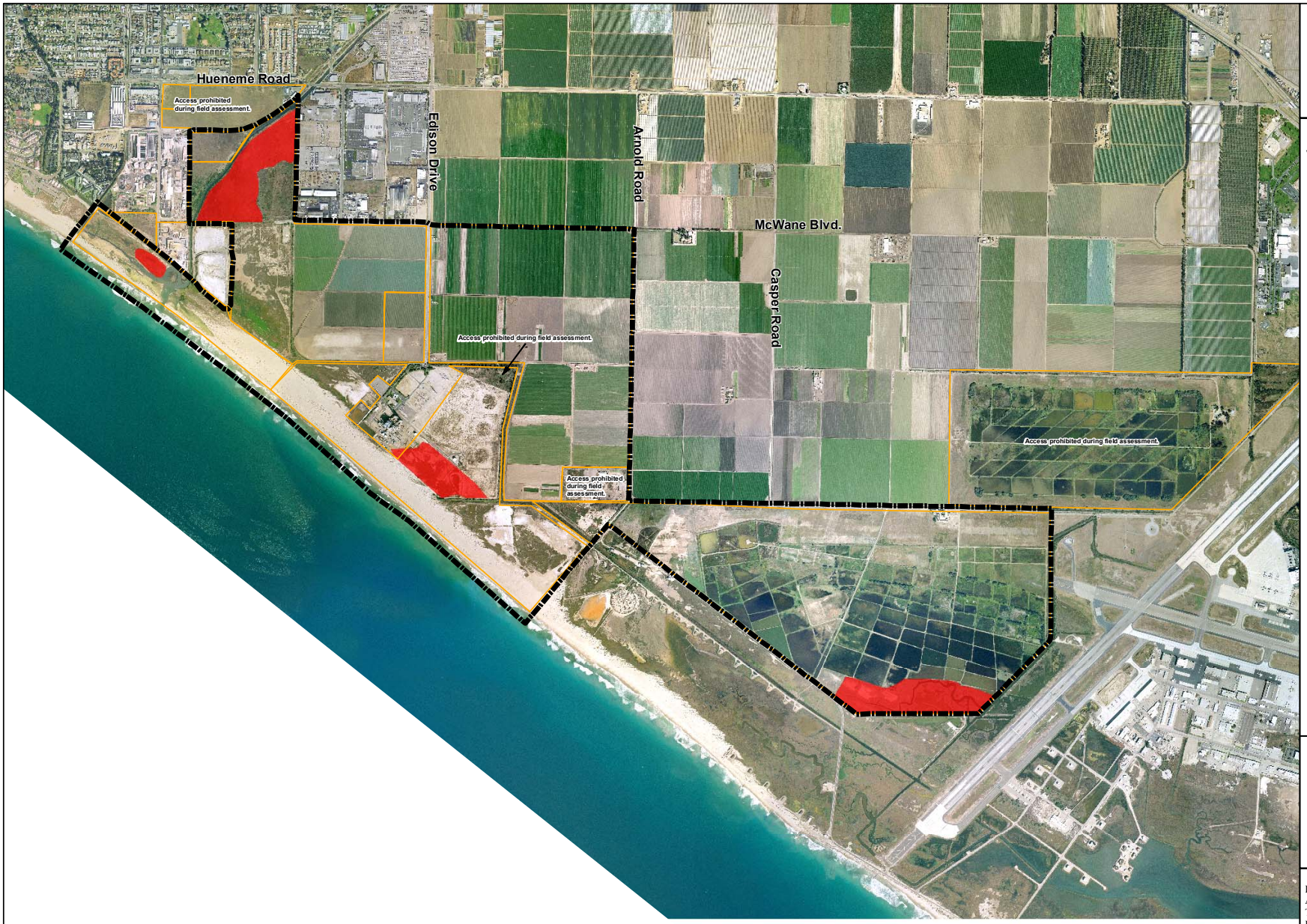
1:21,600

0 750 1,500 3,000
Feet

0 250 500 1,000
Meters

N

Date: July 2006
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: I:\Acad 2000\13006\GIS\ArcMap\July07 Revisions\Appendix C*.mxd



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Biological Assessment Appendix C-2.

Potential Foraging and Breeding Habitat for Wandering Skipper (*Panoquina errans*)

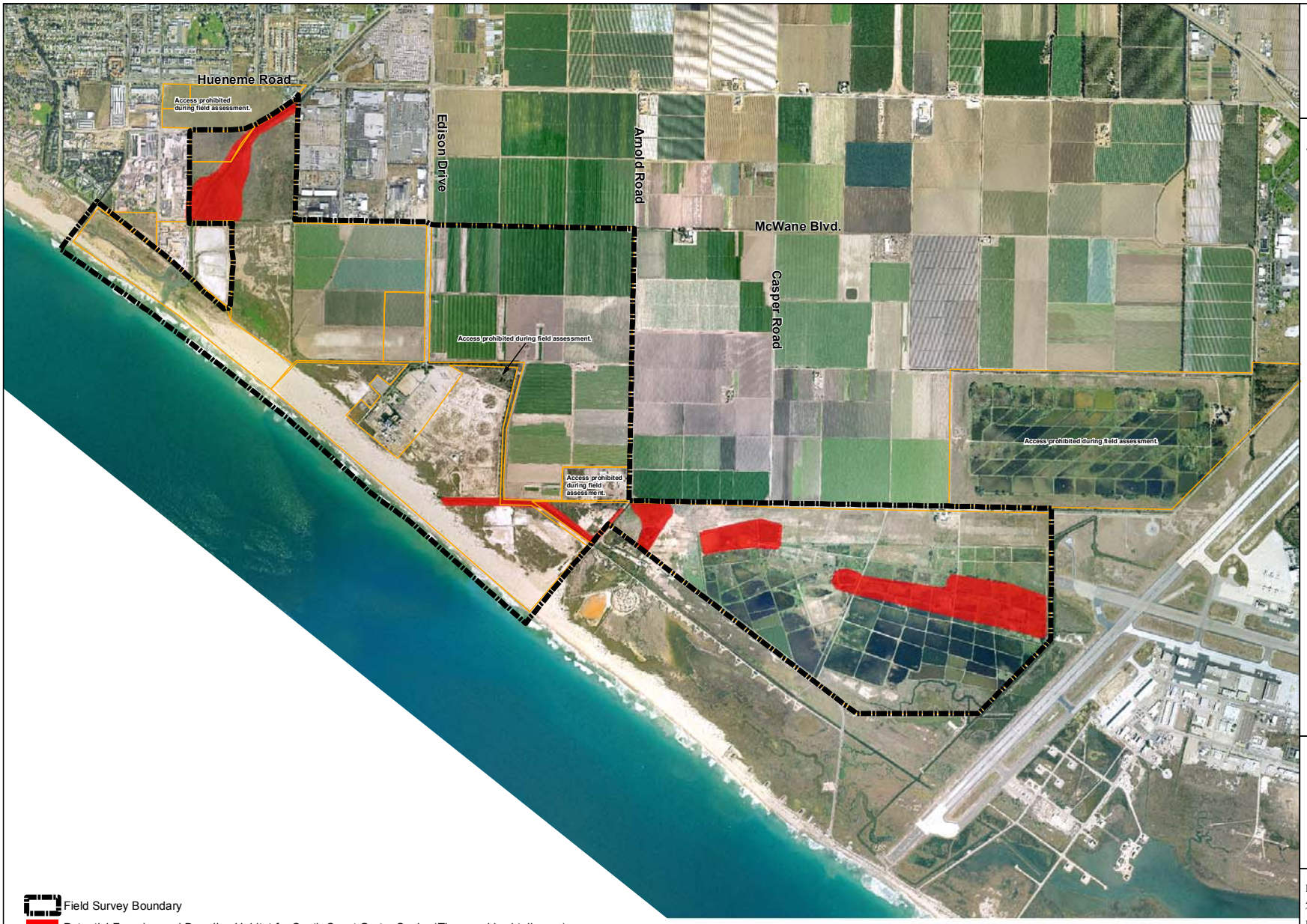
1:21,600

0 750 1,500 3,000
Feet

0 250 500 1,000
Meters

N

Date: July 2006
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: I:\Acad 2000\13006\GIS\ArcMap\July07 Revisions\Appendix C*.mxd



wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Biological Assessment Appendix C-1.

Potential Foraging and Breeding Habitat for South Coast Garter Snake (*Thamnophis sirtalis ssp.*)

1:21,600

0 750 1,500 3,000
Feet

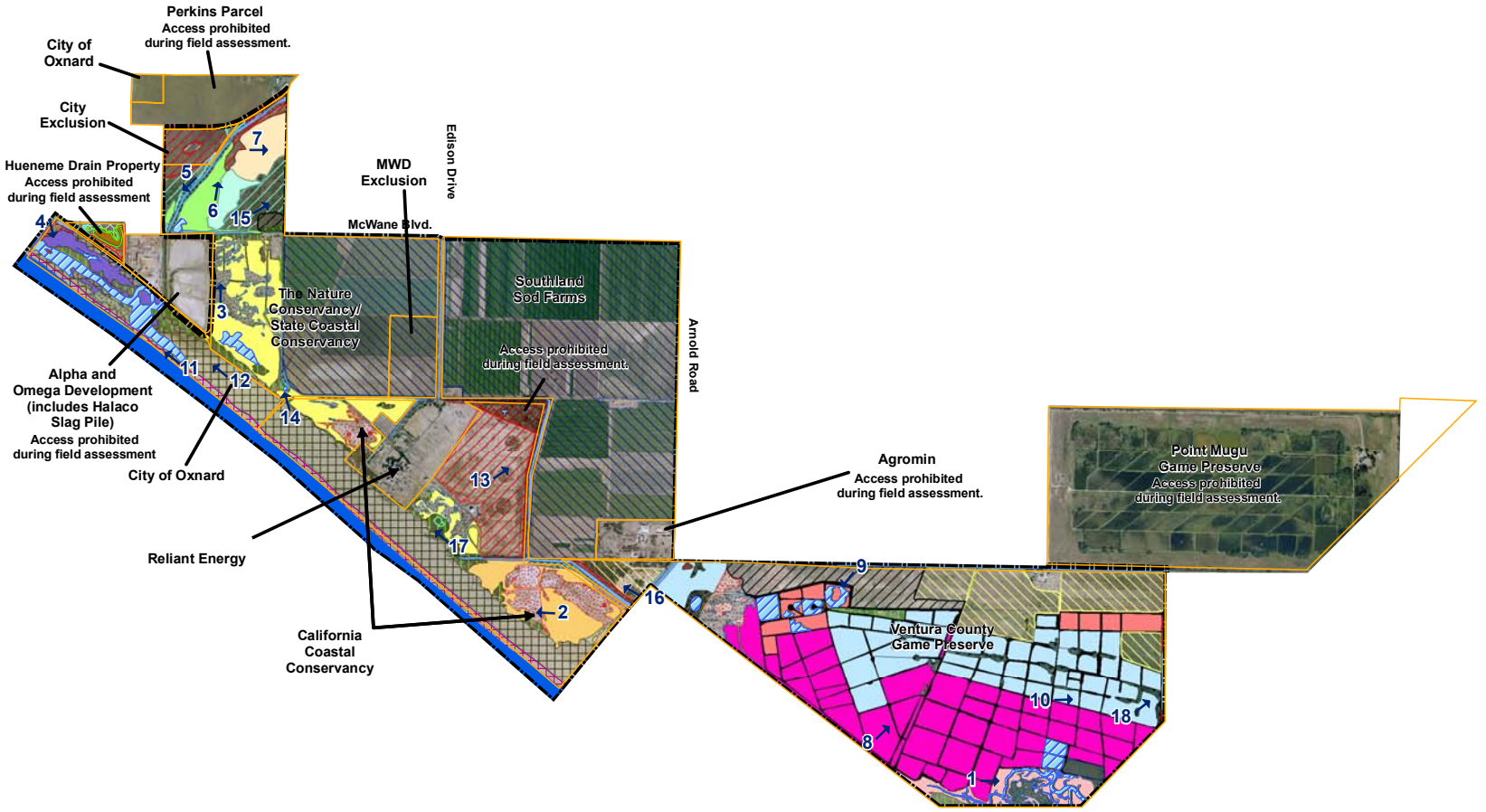
0 250 500 1,000
Meters

N

Date: July 2006
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: l:\Acad 2000\13006\GIS\ArcMap\July07 Revisions\Appendix C*.mxd

APPENDIX D

STUDY AREA PHOTOGRAPHS



Ocean (contains Irregularly- Exposed Marine Wetland)
Open Water
Marine Intertidal Unconsolidated- Sand Wetland

Southern Coastal Salt Marsh Habitats*

Seasonally-Flooded Mineral (Sand) Flats
Seasonally-Flooded Precipitate (Salt) Flats/Pannes
Estuarine-Intertidal Emergent-Persistent (Salicornia virginica) Regularly-Flooded Mixohaline Mid-High Salt-Marsh Wetland
Palustrine Emergent-Persistent (Salicornia, Jaumea, Atriplex) Seasonally-Flooded Mixohaline Mid-High Diked-Estuarine Salt-Marsh Wetland
Palustrine Emergent-Persistent (Salicornia, Suaeda) Seasonally-Flooded Mixohaline Mid-High Diked-Estuarine Salt-Marsh Weland
Palustrine Emergent-Persistent (Salicornia, Distichlis) Seasonally-Flooded Mixohaline Mid-High Diked-Estuarine Salt-Marsh Wetland

Freshwater/Brackish Wetland Habitats*

Palustrine Emergent-Persistent (Cressa, Salicornia) Seasonally-Flooded Mixohaline Managed Duck Pond Wetland
Palustrine Emergent-Persistent (Cressa, Suaeda, Atriplex) Seasonally-Saturated Alkali Flats/Depressional Wetland
Palustrine Emergent-Persistent (Distichlis, Salicornia, Frankenia) Seasonally-Flooded Drainage Channel Floodplain Wetland
Palustrine Emergent-Persistent (Mixed Vascular) Seasonally-Flooded Mixohaline Managed Duck Pond Wetland
Palustrine Emergent-Persistent (Schoenoplectus) Seasonally-Flooded Mixohaline High-Fringe-Marsh Wetland
Palustrine Emergent-Persistent (Schoenoplectus) Seasonally-Flooded Mixohaline Managed Duck Pond Wetland
Palustrine Emergent-Persistent (Schoenoplectus, Atriplex) Seasonally-Flooded Drainage Channel Floodplain Wetland
Palustrine Emergent-Persistent (Schoenoplectus, Typha, Distichlis) Semi-Permanently-Flooded Lagoon Shore Wetland

Upland Habitats

Southern Foredune (may contain Marine Intertidal Unconsolidated- Sand Wetland)
Willow Scrub
Coyote Brush (Eucalyptus Association)
Coyote Brush (Myoporum Association)
Non-Native Annual Grassland (Coyote Brush/Western Ragweed Association
Non-Native Annual Grassland (Ruderal Vegetation Association)
Saline/ Haline Herbs
Agricultural Field
Cultivated Sod Field
Mixed Transitional
Developed/Industrial
Berm

*boundaries based on assessment-level mapping and are not necessarily jurisdictional wetland boundaries

wra
ENVIRONMENTAL CONSULTANTS
2169-G East Francisco Blvd.
San Rafael, CA 94901
(415) 454-8868 Phone
(415) 454-0129 Fax

Ormond Beach
Ventura County, California

Appendix D.

Photograph Locations and Directions

1:22,400

0 1,000 2,000 Feet

0 500 1,000 Meters

Date: July 2007
Airphoto: Towill, Inc, 2001
Topography: Ventura Flood Control District, 2000
Drawn By: Gabe Olson &MR
File: I:\Acad 2000\13006\GIS\ArcMap\July07Revisions*.mxd

Photo 1 (top): Looking east at the estuarine-intertidal emergent-persistent (*Salicornia virginica*) regularly-flooded mixohaline mid-high salt-marsh wetland habitat.

Photo 2 (bottom): Looking west at the seasonally-flooded precipitate (salt) flats/pannes and palustrine emergent-persistent (*Salicornia, Suaeda)* seasonally-flooded mixohaline mid-high diked estuarine salt-marsh wetland habitat.

wra
ENVIRONMENTAL CONSULTANTS

Photo 3 (top): Looking north at the disturbed areas and seasonally-flooded mineral (sand) flats within the palustrine emergent-persistent (*Salicornia, Jaumea, Atriplex*) seasonally-flooded mixohaline mid-high diked estuarine salt marsh wetland habitat.

Photo 4 (bottom): Looking southeast at the palustrine emergent-persistent (*Schoenoplectus, Typha, Distichlis*) semi-permanently flooded lagoon shore wetland habitat

wra
ENVIRONMENTAL CONSULTANTS

Photo 5 (top): Looking southwest at the palustrine emergent-persistent (*Schoenoplectus californicus*) seasonally-flooded mixohaline high-fringe marsh wetland habitat.

Photo 6 (bottom): Looking northwest at the interface of the palustrine emergent-persistent (*Schoenoplectus, Atriplex*) – (*Distichlis, Salicornia, Frankenia*) seasonally-flooded drainage channel floodplain wetland habitats.

wra
ENVIRONMENTAL CONSULTANTS

Photo 7 (top): Looking east at the palustrine emergent-persistent (*Cressa, Suaeda, Atriplex,*) seasonally-saturated alkali flats/depressional wetland habitat

Photo 8 (bottom): Looking northeast at the palustrine emergent-persistent (*Cressa, Salicornia*) seasonally-flooded mixohaline managed duck pond wetland habitat.

wra
ENVIRONMENTAL CONSULTANTS

Photo 9 (top): Looking southwest at the palustrine emergent-persistent (*Schoenoplectus*) seasonally-flooded mixohaline-managed duck pond wetland habitat.

Photo 10 (bottom): Looking northwest at the palustrine emergent-persistent (mixed vascular) seasonally-flooded mixohaline managed duck pond wetland habitat.

wra
ENVIRONMENTAL CONSULTANTS

Photo 11 (top): Looking northwest at the marine intertidal unconsolidated sand wetland habitat within the Study Area.

Photo 12 (bottom): Looking northwest at the southern foredune habitat within the Study Area.

wra
ENVIRONMENTAL CONSULTANTS

Photo 13 (top): Looking northeast at the non-native annual grassland (ruderal association) habitat (foreground) and coyote brush (eucalyptus association) habitat (background).

Photo 14 (bottom): Looking north at the coyote brush (myoporum association) habitat within the Study Area.

wra
ENVIRONMENTAL CONSULTANTS

Photo 15 (top): Looking northeast at the non-native annual grassland (coyote brush / western ragweed association) habitats within the Study Area.

Photo 16 (bottom): Looking northwest at a typical agricultural field within the Study Area.

wra
ENVIRONMENTAL CONSULTANTS

Photo 17 (top): Looking northwest at mixed transitional and non-native annual grassland (coyote brush / western ragweed association) habitat within the Study Area.

Photo 18 (bottom): Looking northwest at the palustrine emergent-persistent (mixed vascular) seasonally-flooded mixohaline managed duck pond wetland and adjacent willow scrub habitat within the Study Area.

wra
ENVIRONMENTAL CONSULTANTS

APPENDIX E

DIGITAL DATA